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A MEDICAL STRIKE IN AUSTRIA.

Much dissatisfaction is expressed among the profession in Austria at the new legislative proposals made by the Government with regard to "social reform." The doctors believe that if these proposals become law they will be absolutely ruined. As they have made up their minds

to strike rather than submit, their association has met and drawn up a moderate tariff so as to allow all citizens, including the poorest, to receive treatment during the strike on condition that the fee is paid on the spot. Families whose income is below 1,200 crowns will pay a crown, or a little over tenpence, a visit. If the doctor calls at the patient's house, or has to make a lengthy journey, or if the income of the family exceeds 1,200 crowns, the tariff is raised appreciably, though it is still moderate. Consultations will cost from five to ten crowns. The association has apprised the public of its decision to strike, and of its scale of fees, at the same time explaining that the attitude taken up by the doctors is the result of the proposed law, which would render private medical practice impossible in poor and middle-class families.—*Edinburgh Medical Journals.*

Elastic knee bandages do much damage when worn too long; as they usually are. Patients should be warned about this. If the elastic bandage has not accomplished its purpose in two months it never will.—*Med. Review of Reviews.*

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Vermont Medical Journal

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The question whether syphilis existed in the old world before the fifteenth century or whether the companions of Christopher Columbus brought it from America is not yet cleared up. In studying bones collected by the Baron de Baye in burial places on the Marne and preserved in the Museum of National Antiquities of Saint-Germain-en-Laye near Paris, Dr. Paul Raymond, former *agrégé* professor at the Faculté de Médecine de Montpellier, found a humerus and a cubitus belonging to different subjects which presented evident lesions of syphilis. Dr. Raymond concludes that syphilis, like tuberculosis, is as old as humanity and that America had no share in its propagation in Europe.—*Medical World.*

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and other respiratory affections so often owe their intractability to malnutrition and debility that vigorous tonic medication always forms one of the first and most important indications for their treatment. The results that uniformly follow the use of

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in this class of affections, prove the wisdom, therefore, of "treating the patient as well as the disease." The exceptional efficiency of this time-tried tonic in all diseases of the air passages has led to its widespread recognition as one of the general practitioner's most dependable allies in his annual conflict with winter coughs and colds.

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Vermont Medical Monthly.

VOL. XVIII.

JANUARY 15, 1912.

NUMBER 1.

ORIGINAL ARTICLES.

SPINAL ANESTHESIA.

BY

J. M. ALLEN, M. D.,
St. Johnsbury, Vt.

Nearly four years ago it was the writer's privilege to witness the use of stovaine in the production of spinal analgesia for major operating in many cases in different clinics in Europe. He was so impressed by witnessing the procedure that upon his return he cautiously began using the method in the locality in which he resides.

The work of two men especially, namely, Barker of the University of London Hospital, and Chaput of the Hospital of Lariboissiere in Paris, with this method was most noteworthy. Barker had used it in only a few hundred cases, while Chaput has employed it for three or four years and now has records of over two thousand cases. Barker was using it in selected cases while Chaput was doing nearly all of his work by its aid.

A brief note of the history of spinal analgesia may here be of interest:

Several years ago, Corning of New York, injected cocaine into the dural sac of a dog and produced analgesia with loss of motor power. It remained, however, for Bier of Berlin to first make an injection of cocaine in the human dural sac with definite purpose. This was done August 16th, 1898. During the following week Bier had his own lumbar sac injected by his assistant, and he, in turn, injected that of his assistant, the two making careful observations of the effects of the drug. After using the method for a few times Bier frankly stated that so long as cocaine was the only drug available for use in spinal analgesia, the method would never approach general use, as the sequelae seen in some cases would prevent its adoption. But in the past seven years, since the introduction of stovaine, there have been thousands of cases operated upon under its use and today the method certainly has a place in recognized surgical procedure, although its exact position may be debatable.

Up to this time the writer has used the method in one hundred and nine cases, and today brings the report of these to you, for consideration.

It is needless to state that the first cases, at least, were carefully selected, the main points in selection being to find patients of "nerve," who were in good general condition except as affected by the diseased condition for which operation was proposed. This was done partly from motives of professional self protection, for the writer had no special desire to erect his own professional tombstone even in this novel way.

In its use at the hands of the writer, as well as in witnessing its use at the hands of others, it has been his honest intent to carefully weigh the evidence, favorable and unfavorable, and while one hundred cases are of course not a sufficient number to render final judgment, nevertheless he believes that in a good majority of cases when the field is below the ensiform cartilage, it is a rational method, and a safe procedure under proper safeguard, and with the careful watching of a man of good judgment, as one would desire, were a general anesthetic being used.

In none of these cases has its use been insisted upon, and if objection to it has been made by patients, or near friends, it has never been employed. Since Professor Johnnesco was here nearly two years ago and the method obtained notice in the lay press, more patients fall in readily with the suggestion that it be used, and in the past year it has been a not uncommon experience to have a patient request that it be used, he having heard of it from some other patient, who had been operated upon under the method. The sense of responsibility always felt by a surgeon when a patient comes into his hands for operation will ever prevent one's urging any new method for analgesia unless one is absolutely convinced of its safety being at least as great as any of the older and commonly employed methods of general anesthesia. Therefore the writer would not be understood as advocating the general employment of spinal analgesia at this time, but as simply urging the careful thought and investigation which medical men bring to new things in their work.

While the method today has a well recognized place in surgical procedure, the limitations will not be determined for some time, and each user will naturally form his own conclusions, some discarding it after a few failures or more or less unsatisfactory analgesia, even if no dangerous symptoms are seen, while others will continue in their trials of it with a strengthened belief in the efficiency and safety of the method as they gain larger experience.

There can be no doubt, but that this method has rendered possible in a great many instances, life saving operations, which with a general anesthetic would almost surely have been fatal.

In these cases here reported, it has been used only where the field was below the episternal notch; the oldest patient was eighty-five and the youngest, seventeen; as to its use in advanced age, where heart, lungs, or kidneys are bankrupt the writer is uncertain, although several of these patients were upwards of sixty years of age. The question of any anesthetic, in the very aged, is a serious one, for it is hard to divide the risk between the anesthetic and the shock from the dread of operative interference or the actual shock of the operation itself. In the early cases, some absolute failures were seen, and some imperfect analgesias observed. This has been the common experience of many users in their early cases. The latter three-fourths of the cases reported will show very few imperfect analgesias and only one or two failures where ether was needed. The stovaine used was from the laboratory of Billon of Paris, and for the most part was the Chaput formula which consisted of stovaine in normal salt solution. In a few cases Barker's formula was used, which contains glucose, while the Bier formula containing epirenin borate, was used in three cases, one of which was an absolute failure, and the other two were not perfect, although not requiring a general anesthetic. By far the best success was obtained by Chaput's formula, and also better success was had when the stovaine was mixed with a little spinal fluid, before being thrown into the canal. Some of the imperfect analgesias and failures were directly traceable to faulty position after injection, and that, of course, is one thing that experience in its use will eliminate.

There have been noted in a few cases some slight nausea upon the table, and in two cases a little vomiting occurred, also in a few cases pain in the epigastrium has been noted when intestine

was pulled upon. In only two or three cases has there been any post-operative vomiting and this was not protracted, as is usual when it occurs following ether; a few have had some headache, and one of the last patients, late in September, complained of disagreeable sensations in the back of his neck, for some days after its use. In not over ten per cent. of all has there been noted anything in the slightest degree unpleasant. The amount used has been five centigrams, and in only two cases has an extra injection been needed, and in one of these, a hip joint amputation which the writer was specially desirous of doing by this method, it was necessary to administer a little ether. These two cases were in the first thirty. The time required after injection before complete analgesia was obtained, varied from five to twenty minutes, and when not obtained in twenty minutes, ether was used. In the last sixty or seventy cases, the average time has been about seven minutes, although in one or two of these it was much longer. Usually the patient has spoken of numbness in the feet first and gradual loss of motion of lower limbs, although in a few, motion was only impaired and not wholly lost. The perineum was the first point to show loss of sensation, then followed the inner side of thighs, the legs, and abdomen. In nearly all the cases, moderate raising of the foot of the table was practiced, with the head kept high. By so doing it was found that a better analgesia was obtained and of course the analgesic area extended higher up. In many cases when at the time of beginning the operation it extended only to the level of the umbilicus, when the operation was concluded, tests showed that it had extended as high as the nipples. The duration of the analgesia has been variable, lasting from one-half hour to one and one-half hours. In only one or two cases has the duration not been sufficient to complete the necessary work without pain. In most cases when work was upon the right or left side better success has been had by putting the patient into the dorsal position than by placing upon the side as many have recommended.

Many of these operations have been done in the hospital, although several were in private practice outside. In nearly all cases the patient has expressed satisfaction at the result, and some have had it used a second time when an operation was necessary, one patient having it used four times.

The eyes have been covered and in a few cases the ears plugged and always all needless conversation, clicking of instruments and anything tending to disturb the patient has been carefully avoided. A few of the patients have had general anesthetics used at some time prior to the spinal method, and these speak with authority. Some few have complained of the puncture, but none have ever mentioned it after the operation was concluded. A preliminary injection of cocaine at the point of insertion of the needle has never been made.

From the standpoint of the operator the conditions in a perfect spinal analgesia are ideal. After the puncture and the introduction of the stovaine, while the patient is being put in proper position and the field of operation finally prepared, there is no struggling, coughing, or excitement, and relaxation occurs hand in hand with analgesia. In work upon the rectum, especially, pleasant features are present; there is complete relaxation of the sphincter and no more effort to enter the rectum is necessary than to separate the lips to examine with the fingers a patient's mouth. In all cases a few minutes prior to the puncture there has been given a hypodermic injection of morphine sulphate (grain $\frac{1}{4}$), strychnine sulphate (grain $\frac{1}{30}$), and caffeine sulphate (grain $\frac{1}{2}$). In only one case has resort been had to further hypodermic medication. This case will be spoken of later. There have been urged against the method several objections and disadvantages, and to the writer's mind, nearly all are more apparent than real.

1st. It is urged that it is a most dangerous thing to inject toxic agent into the lumbar sac.

2nd. The danger of sepsis.

3rd. Consciousness of the patient who knows and hears part of what is going on during the conduct of the operation.

4th. The psychic effect of this knowledge upon the patient.

5th. The nausea and vomiting during operation which are present in some instances.

6th. Some lowering of blood pressure which is certainly found in a proportion of cases.

7th. The pain of the injection.

8th. The possibility of injury to the cord, or spinal nerves.

9th. Pain referable to the epigastrium during abdominal operations.

10th. Subsequent paralyses, as of the sphincters or even complete paraplegias.

11th. Failure to get perfect or sufficiently prolonged analgesia.

12th. Difficulty of injection.

As to the danger of injecting a toxic agent into the lumbar sac, why should a small amount of poison thus introduced into the system be more dangerous than a large amount of irritant poison, like ether or chloroform, where the whole system must of necessity be charged with it? Deaths have no doubt occurred from its use, but so has death occurred from other anesthetics and drugs like morphine, etc., and we do not discard these on that account.

As to the consciousness of the patient, the eyes are covered, and the ears may be plugged, but it is admitted that these measures do not altogether remove this disadvantage. The psychic effect of this knowledge is very great in some patients. As to the nausea and vomiting which occur in a few cases during operation, it may be said that as a rule it is only very slight and appears to occur chiefly when intestine is especially handled or pulled upon. As to the lowering of blood pressure, which has been noted, in a certain proportion of cases, it has seemed that this was as much due to psychic disturbance as to the drug itself, for it has appeared in some of my cases before the injection has been made.

As to the pain of the injection, it is usually very slight unless the point of the needle wounds the periosteum when pain sometimes persists for two or three hours.

As to the danger of sepsis, this should not have serious consideration, for no man who cannot make an aseptic puncture should ever attempt such a thing, and sepsis here would be a confession of ignorance or of lack of control of surgical technic.

The possibility of injury to the cord can only exist provided the injection is improperly performed. Paralysis, in the opinion of the writer, can only occur as a result of faulty injection and where the needle did more than simply enter the dural sac, and is an indictment of the operator and not of the method.

As to the failure to get perfect or sufficiently prolonged analgesia, it can only be said that this occurs to most operators in their earlier cases, if at all, and would appear to show that greater familiarity with the technic overcomes this to a great extent.

As to the difficulty of injection, this may occur in stout persons, or in those with deformed

spines, but after some practice in most cases these obstacles, as a rule, are not difficult to overcome.

So then out of this list of disadvantages, one will find but few real objections, and it is really objections we look for, as disadvantages merely mean something to get around.

As good, valid objections it seems to the writer only these three obtain:

1st. Consciousness of the patient in a proportion of the cases certainly constitutes an objection, but solely on account of the psychic effect of the knowledge that one is undergoing an operation.

2nd. Lowering of arterial pressure to a great degree is shown to follow in all cases, and not alone in those where the psychic effect is noticeable, would surely be a valid objection. If, on the contrary, it only occurred where the mental stress was marked, it would only warn us to use greater care in our selection of cases for operations by this method.

3rd. Failure to obtain sufficiently prolonged analgesia would also be an actual objection if it occurred in many cases. As a matter of fact, unless an operation is to require more than an hour and one-quarter, this may be dismissed, for nearly all patients remain analgesic for a sufficient length of time for any ordinary operation to be done without pain. To the writer's mind then, these are the only real objections, and of these the only one of vital importance is in relation to the fall of blood pressure for this might go to an untoward result.

In the one hundred and nine cases there have been three deaths, particulars of which will now be given. First was a patient aged fifty who was operated upon by the writer one year previously under ether, for femoral hernia and varicose veins of both legs. In April, 1910, she was operated upon for appendicitis with abscess under stovaine spinal analgesia. There was a very bad fecal fistula resulting; this did not close, and two subsequent attempts at closure both under spinal analgesia resulted in failure. In August a resection of a large amount of intestine was done, and during the operation she collapsed, dying in forty-eight hours.

How much, if any, stovaine, contributed to the fatal result, is left to you to judge. In considering this case, remember, please, that here was a patient upon whom three operations under stovaine spinal had been done without symptoms, and reduced as she was by a four months' ill-

ness, and a chronic nephritis, it seems to the writer no wonder that she could not withstand the fourth operation.

The second death was a man, aged eighty-five, who had a very large prostate and who begged for an operation, as the use of the catheter was so painful. In consultation my associate, Dr. Farmer, advised the use of stovaine, as we felt certain the patient could not stand ether. The analgesia was perfect in one minute in the perineum, but the patient died on the table before the completion of the operation.

The third was a young man, aged nineteen, who had acute appendicitis and was in very bad condition, pulse one hundred and fifty at time of puncture. He, too, died just at the completion of the operation. In no one of these cases, is the writer willing to admit that the drug had anything to do with the untoward result.

As to the first case of these three, the fact that the patient had had experience with a general anesthetic and then had four spinal stovainizations, at least shows how satisfactory was the method to her.

These cases are reported and facts given because the writer has no disposition to cover up anything in bringing the entire report up for your judgment and criticism.

TABLE OF CASES.

Inguinal hernia	4
Inguinal hernia, strangulated	1
Omentopexy	1
Suspensio uteri	1
Varicocele	6
Amputation of great toe	2
Skin graft of leg	1
Supra-pubic cystotomy	1
Incised wound of ligamentum patellae.....	1
Interval appendicectomies	17
Appendicectomies, acute	17
Hydrocele	4
Hydrocele, double	1
Piles	5
Uterine curettage	2
Amputation of thigh	2
Ununited fracture of leg	2
Amputation at hip joint	1
Prostatectomy	4
Varicose veins of leg	5
Ventral hernia	1
Abdominal sinus	2
Perineorrhaphy	3

Trachelorrhaphy and perineorrhaphy	3
Ectopic gestation	2
Examination of rectum	1
Vaginal atresia	1
Sinus of hip joint	1
Renal ptosis	1
Fecal fistula, abdominal	3
Resection of intestine	1
Strangulated femoral hernia	2
Femoral hernia	1
Amputation of leg	4
Ischio rectal abscess	1
Castration	2
Psoas abscess	1
Ovarectomy and salpingectomy, double.	1

109

As already stated there were a few failures to obtain sufficient analgesia and in these some ether was used.

The first patient upon whom it was used was one; in this case the man took the injection upon the bed, and when he lay down care was not taken to put him exactly upon his back and the opposite side from what was desired was rendered analgesic, while the one upon which a hernia was to be operated upon was not much affected. Not wishing to give the second injection a little ether was used.

The third patient was a nervous woman who desired to try the method. After waiting twenty-eight minutes when she still felt pin pricks in lower abdomen, but indistinctly, the incision was made. It caused enough pain so that operation was finished with ether.

Case twenty-six. Amputation through hip joint, first injection rather imperfect as flow of spinal fluid was very slight. Second injection was made after twenty minutes; effect not sufficient, and a little ether was required. Profound shock before completion of operation, but patient rallied after six hours and made good recovery.

Case twenty-nine. Large double hydrocele; second injection required. Complete analgesia in ten minutes. Slight nausea during operation without vomiting when the peritoneum was disturbed and intestine pulled upon was observed in cases 6, 10, 21, 24, 39, 46, 71 and 88.

Vomiting during operation occurred in cases 34, 49, 67 and 108. Vomiting after operation occurred in cases 6, 21 and 67.

Inadequate analgesia was observed in cases 1, 3, 26, 37 and 89, operation being concluded under

ether, although not much ether was necessary in any one case.

Failure to insert needle in case 9. No. 9 had deformed spine and although both the second and third spaces were tried, it was impossible to puncture the lumbar sac.

One other patient, a young woman, at first prick of the needle asked for ether and no attempt at puncture was made. Undoubtedly a preliminary drop of cocaine at puncture point would have been sufficient to have allayed pain, and it could have been done.

Three patients have had this method used twice, and one of these three had it four times. One had it used for an appendicectomy and again to have a sinus resulting therefrom closed. Another patient was one who had the hip joint amputation and who came back to have some diseased bone curetted from the acetabulum, while the third was the fatal case already spoken of, who had it used four times.

Technical. As students of anatomy, we know that the spinal cord terminates at the lowest point opposite the second lumbar vertebra, and below this point is absolutely out of harm's way. The lumbar dural sac extends to about the third sacral vertebra, but owing to the conformation of the bones a puncture below the third lumbar space would be a practical impossibility. There is left to us then the choice between the second and third lumbar spaces as a point to insert our needle. The needle may be inserted in the mid line or laterally, but is least painful and a better puncture may be made, less likely to be followed by bleeding, if the mid line point is chosen. Then too, the analgesic fluid will be thrown freely into the spinal fluid and not be so likely to be caught and retained among the strands of the cauda where it can produce but little, if any effect. This latter contingency is no doubt the cause of most failures to get good analgesia. For convenience, too, the ordinary man will find the fourth lumbar spine is on a level with the highest points of the iliac crests, and just above this line in the mid line, of course, will be found the third interspace. The needle with trocar inserted is thrust slightly upward and straight forward into this interspace, and as it punctures the sac a distinct feeling of "giving" will be imparted to the hand of the operator. If the needle strikes bone it should be withdrawn slightly and its direction varied when it will usually enter readily. Fluid should follow the withdrawal of the trocar, and

if it does not follow the injection should never be made.

The position of the patient should, for ease of performance, be the sitting position with the back rounded to its maximum, which will best be obtained by having the patient sit on the edge of the table with elbows on the knees and the concavity of this part of the spine transformed to a convexity by the exaggerated rounding which this position will give. It can, however, be given with the patient lying on the side with back rounded, or lying on the stomach with sand bag or pillow underneath the abdomen. After the puncture is made it is the common practice to allow an amount of the spinal fluid to run out, about equal in amount to that of the fluid to be injected. Then the fluid is thrown rather slowly in and the patient then assumes the decubitus which will give the best analgesia of the part desired to be most affected. As a rule, it is wise to raise the foot of the table and to have the head elevated, so that the fluid may gravitate up the spinal canal far enough to be certain to obtain analgesia of the part upon which we are to operate. Of course, the skin over the point of proposed puncture is thoroughly sterilized by the use of green soap and hot water followed by the rubbing in of alcohol, which is washed off by ether and lastly by sterile water. Ordinary chemical antiseptics are not used as the introduction of any of these on the point of the needle might cause disturbance of the meninges. The puncture wound is sealed with collodion. The operator's hands should be as effectively sterilized as if he were to do a surgical operation, and no man who has not a proper conception of surgical cleanliness or aseptic technique should ever attempt this procedure.

The conclusions of the writer after having used the method in one hundred and nine cases, and after having seen it used in the hands of many other operators, are that there is surely a large field for spinal analgesia. Certainly in patients who present organic disease of lungs or kidneys, it appears to him to be the method of choice. In crushing injuries of the lower limbs it would also appear to possess advantages, and one case in this series showed almost no shock from an amputation of the leg near the knee, after a car wheel crush.

In closing this too lengthy paper the writer

would simply say that he does not believe any man with an open mind can investigate this subject of spinal analgesia and not be convinced of its value and that it is the method of choice in a good per cent. of cases. He also believes that the field of usefulness for this method will be greatly increased as greater knowledge and experience are gained in its use, and that it will hold its own with general anesthetics from a standpoint of safety, if carefully used.

NOTE.—Case 109 was done Tuesday morning, October 10, 1911. Interval appendicectomy. A second injection was made as first was insufficient. Patient was nauseated and vomited once when cecum was pulled into wound. Nausea ceased when this was released.

DISCUSSION.

Dr. F. E. Farmer of St. Johnsbury.—I don't know that I have very much to add, and I don't feel very much like criticizing Dr. Allen's very interesting paper. I have assisted him in the greater part of these cases and we have talked the matter over a good deal. I think he is more enthusiastic regarding the use of stovaine than I am. We have done a great many cases that have been pleasing and satisfactory, and have had some cases where there has been nausea, and cases where patients are at all nervous are very unpleasant, as during the operation they will frequently make demonstrations as if in pain, but after it is over they will tell you there was no real pain, just an uncomfortable feeling. On a number of these cases we took blood pressure before and during the operation. I remember one case, in particular, in which a man had arteriosclerosis and had a blood pressure of 215 millimeters. The pressure dropped down to 85, and we had quite a discussion as to whether it was dangerous for that man to change that blood pressure so much, and questioned as to whether it was psychic or due to stovaine, and I felt that the stovaine played more part than the nervous element in the patient. It was invariably the rule that the blood pressure dropped. Where 120 it would drop down to 80 or 60. The pulse, unless there was a large nervous element, generally kept very slow. We took the pulse of four during and after the operation, and it was invariably in this case of a nervous temperament where they had a rapid pulse before the injection and rapid for several minutes after, but with a large proportion of the cases after the injection was made the pulse slowed down and they had a good full regular pulse. The pain that they complained of most is a pain referred to as the epigastrium. The most distress comes when the peritoneum is pulled upon like pulling up one of the various intestinal loops, anything that draws on the peritoneum will give a sensation of epigastric pain. Some would think they were going to vomit, but would not. Two or three cases vomited after taken back to the ward. Some of them wanted to know if they couldn't have something to eat, and a great many times the doctor within two hours after the operation would give them quite a hearty meal, with no untoward effect.

THE WAYWARD GIRL.

BY

FREDERIC W. SEARS, M. D.,

Neurologist and Psychologist to the Penal Board
of Vermont.

The interest which has been aroused throughout the State of Vermont in the work done at the Industrial School and its bearing upon the prevention of criminality and the reform of the juvenile criminal, leads me to lay before the medical profession of the state some of the facts brought out by the examination of the fifty-five girls in the school, and to try and establish from these facts the desirability of the reforms now being advocated by the men interested in criminology in Vermont.

The small number of girls in the school renders this record of little, if any, value as a contribution to science or to criminal statistics, but it is of practical use as it has enabled us to classify all the scholars for segregation and treatment and perhaps, in a small way, has shown how unreliable is dependence upon anthropometry or the Lombrosian theory of the Italian school.

These statistics are necessarily incomplete. First, because we are able to get very little reliable data as to the heredity and the early childhood and environment of these unfortunate girls. Second, the time spent in each examination was not more than thirty minutes. Dr. Healy and others maintain that a satisfactory examination can not be made in less than a day.

In addition to this we had inadequate means of making measurements and mental tests at the first few seances, and some of the girls had left the school before we were able to make a second examination. However, these few cases make little difference in the general result.

In making the record as far as possible a certain routine was followed. The name, age, place of birth and residence, reason for commitment and grade in school were ascertained; then the heredity, dwelling especially upon the mental condition, criminal record, occupation, anomalies and disease of the parents, grandparents, uncles, aunts, brothers and sisters, together with the consanguinity of the parents and history of gestation. This record is very scant and unsatisfactory and could be much better obtained by filling out a blank at the time of commitment.

The child's history, weight, height, reach, chest measure and expansion were taken and a physical examination made including the glandular system, nervous system, heart, lungs, etc. Cranial measurements followed by a search for anomalies and stigmata of degeneration.

The girls were not usually required to remove their clothing, nor were any examinations of the genital organs made. The mental condition was tested by the methods of Binet and some of Dr. Healy's tests were used.

In suitable cases a rather superficial psychoanalysis was undertaken and the association test was employed to get down deeper into the mental workings of the child.

This medical work was supplemented by a teacher's report as to ability and progress and a rather complete report of the mental characteristics and everyday work of the pupils from the very intelligent matron.

The children come from city and country in about equal numbers and are, with two exceptions, native born and ninety per cent. of native born parents.

We found 27 girls or 49% of normal mentality; 15 or 27.4% imbeciles of varying intelligence and 13 or 23.6% mentally defective who were either mentally retarded or who deviated from the normal in some certain traits and yet who could hardly be called imbeciles. Of the normal girls about one-half were committed for truancy, one-fourth for immorality, and the remainder mostly because they had no home, and two or three for larceny. The imbeciles were almost all sent in for immorality and the other mental defectives for immorality and larceny.

We were much hampered by the commitment papers giving truancy as a cause when evidently the offence was of a more serious character.

The heredity chart is meagre. The use of alcohol, however much it may affect the environment, appears to have little effect upon the mentality of the offspring, but criminal traits seem to come down from generation to generation, whether from direct inheritance, the force of example, or a similar environment, it is hard to decide. Undoubtedly all three are factors.

One fact, however, is noticeable, in but very few of these cases are both parents alive and living together. More than four-fifths of the girls have lost one or both parents, or else the parents are living apart.

In weight and height the averages are well up to and mostly considerably above the normal averages, as the following tables show:

Age	Reform school weight, pounds	Hall's statistics average weight	Reform school height, inches	Hall's statistics average height
12½	85	78.7	56.9	56.1
13½	93	88.7	59.8	58.5
14½	109.1	98.3	61	60.4
15½	116.1	106	60.9	61.6
16½	113	112	61.4	62.2
17½	132½	115.4	62.9	62.7

A larger number than normal have enlarged tonsils and enlarged cervical glands but this, at least in part, is accounted for by a recent epidemic of diphtheria.

There are also a few adenoids. The examination of the heart and lungs was negative in all but two cases and from the orthopedic side, with the exception of a few flat feet, the girls are remarkably free from deformities and spinal curvatures.

There is no case of organic nervous disease and functional nervous troubles are much more rare than in the ordinary girls' boarding school. There are no cases of epilepsy or chorea on the girls' side.

The general health of the scholars is above the average of school children and they are well developed and well nourished.

Anthropometric measurements also show nothing especially abnormal.

Cranial indices of the three classes:

	Normal class	Imbeciles	Ment. defectives
Mesocephalic	55.5%	33½%	25%
Dolichocephalic	14.8%	33½%	12½%
Brachycephalic	30.7%	33½%	67½%

One of the normal class is hyperbrachycephalic. One of the imbeciles is hyperbrachycephalic and two ultra brachycephalic. Two of the imbeciles are trigonocephalic and one markedly plagiocephalic and one normal is plagiocephalic.

The percentage of ear anomalies is about equal in the three classes as is also that of high zygomatics. There are three enlarged thyroids, one in each class but no evidences of hypersecretion. High palates, irregular teeth and facial asymmetry are relatively more common in the ab-

normal classes and as a whole the pupils bear more stigmata of degeneration than their more fortunate sisters.

Strange to say, there is but one left-handed girl in the institution and she has a very good school record.

The mental examination tells us more. The first thing that stands out prominently is that these children are much below the average in intelligence. Even the normal girls with very few exceptions are fitted only for the lower walks of life and any ill-judged attempts to raise them higher would result disastrously both to themselves and to their associates.

The feeble minded should be placed in a separate institution, the other mental defectives should be segregated where they can be watched and studied, and, if possible, their defects be bettered by a systematic re-education.

The normal children should remain in the school and remain long enough to be prepared to take up a proper life after they go out into the world which, in nine cases out of ten, should not be before they are twenty-one years of age. It is useless to send an immoral girl for a short period to such an institution and then when she is eighteen, an age when the passions are strong and inhibition not yet developed, return to the same old environment to live over again the same life and take her next sentence to the work house. These girls should be trained until they are twenty-one and then taken care of by some responsible charity, or placed in some different environment where they can have a chance to make good. In present conditions the returned reform school girl is considered legitimate prey by every lecherous loafer on our streets. There is no evidence to show that more than one or two of these girls can be helped mentally by physical means, that is, by extracts of the internal secretions and the various operations such as craniectomies, taking out adenoids, pulling teeth, etc., although it would be well to have their eyes and ears examined and a few tonsils removed as in other schools.

Ovariectomy would be much more efficacious in correcting the abnormal tendencies of some of these girls than the many brain operations which are being exploited in some localities, and infinitely less dangerous to the life of the patient and the future of the commonwealth. But, in the present state of public opinion, the surgeon would be condemned for asexualizing such a girl,

while he would be lauded for doing a practically useless craniectomy in the vain hope of correcting a moral deficiency.

Very few evidences of congenital syphilis were found. This would tend to show that the great inroad of this dread disease into our state is of recent origin and that now is the time to take some drastic action to stop its further increase.

In contradiction to our preconceived theories the whole examination indicates that the prevention of juvenile crime belongs to the sociologist rather than the physician. The problems are sociological rather than medical. The treatment of the actual criminal is psychological rather than surgical. The bodies of these girls are as healthy as those of average girls, but it is the mind which is at fault. A normal home, however poor, with the parents living together in harmony, is the safeguard of the child, for here is taught obedience and self control, and here the character is builded, a firm foundation against future temptations.

The Neighborhood House in Burlington and kindred institutions which keep the children off the streets and away from bad associates are helpful.

The prevention of crime is a matter of utility and not of sentiment for every criminal is both directly and indirectly an enormous pecuniary burden to the state.

The real criminals are not in the reform school. These girls have not yet reached the age of consent, which is sixteen, and any man who has sexual intercourse with them is guilty of statutory rape. This statute should either be repealed or enforced. Such a dead letter law is a menace to public morals.

To repeat. First.—There is an absolute need of a school for the feeble minded and defective delinquents. There are at least five hundred of this class in the state. They are prolific and criminals and paupers will tend to increase as long as they are not segregated. The suppression of this class would be a great factor in crime prevention. To save expense this school could be placed at Vergennes under the same executive management as the present institution.

Second.—The girls of normal mentality should be committed to the industrial school until they are twenty-one as the boys are now committed.

Third.—A blank should be filled out at the time of the commitment giving all obtainable data as to the child's heredity, history and environment and manner of life. This should be sent to the school for record and future reference.

Fourth.—There should be established juvenile courts not open to the general public and whose records are not the jest of an irresponsible press. These courts to have jurisdiction over neighboring districts.

Fifth.—Every child before commitment should be classified by a competent physician to the end that it can be sent to the proper institution and receive suitable treatment from the beginning. Judge Hoyt of the Juvenile Court of New York says, "An essential that I believe should be taken up at once is the clinic for defective children. Such a clinic should be established immediately by the State to enable the Court to examine all children who seem to be physically or mentally below the normal."

Sixth.—There should be an organized effort to help the girls when they leave the school by a change of environment and systematic supervision.

Seventh.—A commission should be appointed by the Governor to inquire into, among others, the following reforms:

- a. The indeterminate sentence and parole system.
- b. The asexualization of suitable cases.
- c. The modification of the marriage laws in conformity with modern eugenics.
- d. A practical method of discriminating in the treatment of the first offender and the habitual criminal.
- e. The establishment of a department for the study of defectives in all penal institutions.

A commission acting upon the authority of the Governor could collect information on these subjects where it would be impossible for the individual. A body of men with differing viewpoints yet acting in harmony could lay before a legislative committee the result of their investigations in a much more convincing manner than could one person or several persons not acting in unison. We ask for the advice and influence of the physicians of the state to help onward these much needed reforms.

SURGICAL TREATMENT OF GALL-BLADDER DISEASE.*

BY

ALAN DAVIDSON, M. D.

"Surgical interference in gall-stone disease should be instituted, other things being equal, as soon as the evidence renders the diagnosis certain. Nearly every argument used for early operation in appendicitis applies to biliary calculi. The mortality of operations for the relief of simple gall-stone disease does not exceed one-third of one per cent., and taking all conditions for which operations confined to the gall-bladder are necessary it does not average over two per cent. The safe time to operate is while the gall-stones are in their natural habitat, before involvement of the deep ducts and the pancreas, or the development of malignant disease endangers the patient's existence and increases the mortality of operation."

These are the opening sentences of the section upon "Operation upon the Gall-Bladder," Keen's new surgery, written by the Mayo Brothers of Rochester, Minn. Perhaps no higher authority could be quoted. Drawing their experience and deductions from nearly 2,000 recorded cases they speak "As one having authority and not as the scribes." Fifteen years ago the technic in surgery of this region was crude and undeveloped. The early operators upon the gall-bladder contented themselves with finding the organ, bringing it into or out of the wound, packing about with protective gauze, opening and evacuating, and finally fixing it into the wound—frequently to the skin—allowing the bile to discharge, which it generally did, much longer than the operator or the patient desired and frequently requiring a second operation to close the fistula thus established. In addition, the gall-bladder was immovably fixed to the abdominal wall and serious and annoying symptoms were caused by this suspension. True, the mortality in such operations was not great. But the time has gone by when every operation is considered successful if the patient does not die. Morbidity, not mortality, is now the measure of success. Not only must a patient survive the operation; he must be well. To avoid mortality and relieve morbidity has been the aim of those pioneers in gall-bladder

surgery who have gone ahead and blazed a trail which humbler and less talented men may follow. The splendid advance made in the surgery of this region entailed three important prerequisites:—improved ideas of the physiology of the liver, gall-bladder and ducts; improved knowledge of the anatomy of the same, and improved technique. These revelations did not come in a blaze of light as revelation came to Saul on his memorable trip to Damascus. On the contrary, they came as the good book so well describes "Precept upon precept, precept upon precept, line upon line, line upon line, here a little and there a little."

The old theory that the gall-bladder is a reservoir for bile is untenable, for its capacity is only about one ounce, whereas the amount of bile secreted every twenty-four hours is about one ounce for every three pounds of the body weight. It is rather a contrivance to relieve the pressure in the common and hepatic ducts, like the second bulb in an atomizer. Surgeons in their work have noticed that when the gall-bladder is diseased the head of the pancreas is almost invariably diseased too. Physiologists and investigators (Flexner) have shown that bile from the common duct if injected into the ducts of the pancreas will cause an acute hemorrhagic pancreatitis. If this bile be mixed with mucus the severity of the inflammation is much diminished. Hence the belief that one function of the gall-bladder is to secrete mucus which, when mixed with the bile, protects the pancreas from its destructive action. During digestion it has been noticed that the gall-bladder contracts rhythmically three or four times every minute thus insuring the presence of mucus laden bile in the duodenum.

The deer, which subsists on clean grasses and twigs and browse, has no gall-bladder. The pig, on the other hand, which eats all sorts of offal and filth, has a very large gall-bladder. The deer ingests no bacteria; the pig swallows vast numbers of them. Experiment has shown that if the portal vein be transplanted into the vena cava in an animal it speedily dies from bacterial invasion. Hence, it is not unreasonable to infer that the gall-bladder secretes something which destroys or at least attenuates the bacteria which enter the liver in large numbers through the portal circulation. Whether it is these bacteria which are responsible for the inflammation of the gall-bladder and the formation of gall-stones, or whether the offending bacteria enter the gall-

*Read before the Franklin County Medical Society, Sept. 21, 1911.

bladder through the common and cystic ducts, probably has not been demonstrated. These observations on the physiology of the gall-bladder are of special interest in its surgery. In the anatomy of this region too the surgeon has done much to give us exact knowledge of the relations of structures, a knowledge which has thrown much light on pathological findings in apparently unrelated organs. For example, the relation of the common duct to the head of the pancreas. Sometimes it lies behind it, sometimes it grooves it, and sometimes it tunnels it. This doubtless in some cases is a direct source of pancreatic infection.

The improvements in technique have been many and ingenious; better instruments, convenient incisions, better drainage, inversion of the incision in the gall-bladder—all small things but each contributing materially to the splendid results now obtainable.

That the results are splendid is beyond dispute. Let me direct your attention to the tabulated results in a series of 350 cases of gall-bladder and bile duct disease, 290 from Ochsner's clinic in Chicago, and 60 from the author's clinic. This interesting paper was read by Dr. Stanton of Schenectady before the Surgical Section of the A. M. A. in Los Angeles last June. For convenience of consideration Dr. Stanton classifies his cases as follows:—

1. True gall-stone cases, with stones in gall-bladder, in the ducts, or both.
 2. Cases of cholecystitis, with evidence of gall-bladder or duct disease without the pressure of stones.
 3. Cases where gall-bladder was normal internally but externally bound by adhesions to adjacent organs, the symptoms being due to traction on the gall-bladder or ducts.
 4. Malignant tumors of gall-bladder or ducts.
- Of the true gall-stone cases the following varieties occur:

- (a) Cases where the gall-stones are confined to the gall-bladder. Without complicating lesions. Of the 350 cases reported by Dr. Stanton, 107 were of this variety. Of these 107 cases, 90% were completely cured, 5% satisfactorily improved. Only one case was reported as "No better."
- (b) Stones in the cystic duct. Of this group 90% were completely cured, 5% improved, and 5% unimproved.

- (c) Stones in the common duct:—70% of these were entirely cured, 25% greatly benefited, and 5% unimproved.
- (d) Gall-stones with empyema of the gall-bladder. In this class there were 100% of cures.
- (e) Gall-stones with chronic pancreatitis. Of these cases 91% were cured; in 9% (1 patient) there has been a return of the symptoms after three and a half years of good health.
- (f) Extensive adhesions about gall-bladder. 84% were cured; 16% still have pains in region of gall-bladder.
- (g) In 42 cases of Dr. Stanton's series of 350 there were complicating pelvic conditions simultaneously operated upon, and only 66% of cures resulted.

2. Cases of cholecystitis without stones in the gall-bladder. Of this group of 99 cases nearly 20% were no better or worse after operation, 23% show some improvement, 10% satisfactorily improved, and only 46% cured. That is less than half the cases. Not a very satisfactory showing. This class of cases Dr. Stanton thinks would probably have shown a larger percentage of cures if treated medically. Of this class of cases Dr. Robert T. Morris of New York takes a different view. He includes these among his cases of "Toxic cobwebs in the attic of the abdomen," and declares that some of his best surgical results have been obtained in just such cases. There has been of late years a noticeable aversion to removal of the gall-bladder except where certain well defined indications are present. These are tersely stated:—(1) Stricture of the cystic duct; (2) Infiltration or disease of bladder walls, rendering them thick, inelastic and unfit to contain bile; (3) Malignancy. Cholecystostomy is the operation of choice because it preserves an organ which seems to have important functions. It affords a port of entry into this important surgical region if a second operation should become necessary, something which is difficult of attainment after its removal. It sometimes becomes necessary to conduct the bile from the liver to the intestinal canal through another channel when stricture of the common duct prevents its passage through the natural one. If the cystic duct be patent this can be accomplished by anastomosis between the fundus of the gall-bladder and the duodenum, jejunum or colon. This chance of prolonging life and restoring

health would be sacrificed by the removal of the gall-bladder. This operation—cholecystenterostomy—has a very considerable field of usefulness. When a stone is found impacted in the common duct it becomes necessary to incise the duct, remove the stone, demonstrate the patency of the duct and close the incision. This operation—choledochotomy—is greatly facilitated by thorough exposure of the deep structures. This is accomplished by elevation of the patient's abdomen on a transversely placed sand bag reaching across the table, or a specially constructed table, and by Mayo Robson's manoeuvre of drawing the liver downward and forward and pulling its edge upwards.

3. Of cases where the gall-bladder is normal internally but adherent externally to surrounding organs the operation consists in simply breaking up the adhesions. Interposition of omentum between adjacent parts will prevent their reformation.

4. The result of removal of gall-bladder and adjacent portion of liver for malignant disease has not been such as to open up any avenue of hope for these sufferers.

cases being due to this cause I will especially deal with this form.

Infection may take place through different routes, as follows:

1. By the ascending process through the urethra.
2. Hematogenous route.
3. Infection through abrasions in mucous membrane of rectum.

Ascending Route.—Even before the days of kidney surgery it was generally believed that kidney infection was due to extension of the inflammation upwards by continuity of tissue.

In 1890, Alberan and Guyon proved by experiments that pathogenic micrococci in virulent culture injected into the bladder produced no demonstrable lesions in the bladder, urethra or kidneys.

If this was associated with retention of urine by ligating the urethra an acute cystitis and later pyelonephritis resulted.

Zemblinoff thought this due to anteperistaltic action of the ureters.

Alberan and Guyon later disproved this view by injecting vegetable charcoal into the bladder with bacterial cultures, the urethra being ligated, they found small particles of charcoal in the pelvis of the kidney in 48 hours, while the bacteria were found as early as three hours. This difference was believed by them to be due to the mobility of the bacteria. The colon bacillus is especially motile. Vesicle tenesmus undoubtedly plays a large part in the ascending infections in infants as is quite frequently observed. The notable frequency of this affection in females is marked, as shown by reports from different observers, as follows:

Broderic's	.....	6 cases,	5 were girls.
Morse's	.....	50 "	30 " "
Finkelstein's	...	8 "	7 " "
Abt's	.....	21 "	20 " "
Jefferies'	.....	25 "	21 " "
Box's	.....	18 "	17 " "
Goepperts'	....	126 "	114 " "
Thompson's	....	25 "	21 " "

This would make about 85% of the cases in females.

The predominance of cases in females has led different observers to believe that the infection results directly from contamination from the rectum.

The great majority of cases occur during the first year.

COLON BACILLUS INFECTION OF THE URINARY TRACT IN INFANTS AND YOUNG CHILDREN.

BY

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The infection of the urinary tract by the colon bacillus although common may often be an obscure affection; many cases not being recognized.

This infection may result in a simple bacilluria, cystitis, pyelitis or pyelonephritis. This classification is after Thompson but we may frequently find a combination, e. g., a cystitis and pyelitis, termed a pyelocystitis.

Box in 1908 published one of the first papers on this subject, but Escherich of Vienna was the first to call attention to its frequent occurrence in infants.

Many other organisms may produce a cystitis or pyelitis, e. g., staphylococcus albus, streptococcus, typhoid bacillus or the tubercle bacillus.

The infection with the colon bacillus being quite frequent in infants and children and my

Probably 90% occurring during the first two years of life.

In Finkelstein's cases, 92% occurred during the first year.

Brenneman speaks of this as the diaper age. These facts taken into consideration with the shortness of the female urethra we can readily see how an infant being changed might easily have bacteria introduced into the urethral orifice and then follow this passage into the bladder.

The frequent occurrence of diarrhea in these cases and their occurrence in summer would strengthen this view.

Box found colon bacilli present in the urine of children suffering from thread-worms, the ova and in some cases the worms themselves were found in the bladder.

The hematogenous route does not seem to have many supporters. Blood cultures have been found nearly always negative. The possibility of the colon bacillus wandering through the rectal and bladder walls, has been demonstrated by Wreden. This fact with the frequent occurrence of these cases following a colitis or where there is an accompanying constipation wherein the rectal epithelium may easily become injured also strengthens this opinion. Frequent urination and tenesmus may be present in only a small percentage of the cases. There may be incontinence.

Pathology.—Escherich, Finkelstein and Trumpp consider the disease simply a cystitis.

Heubner first differentiated cystitis and pyelitis. Thompson and Still think it a pyelitis. Most American writers speak of the disease as a pyelitis or a pyelocystitis.

Thienuch from a series of autopsies has in a number of his cases found the main lesion to be multiple, minute abscesses in the cortex of the kidney. Friedenwald reports similar findings in 50% of his cases. Most of the cases show a catarrhal inflammation of the bladder and pelvis of the kidney.

Babinski, Carpenter, Abt, West and others have published reports of cases involving the kidney itself, a pyelonephritis.

The nephritis cases are more frequent when not treated or improperly treated.

Symptoms.—In many cases there are no symptoms pointing directly to the urinary tract. These children may be extremely ill yet physical examination be practically negative. The clinical symptoms are fairly constant however. An in-

fant (usually female) is taken suddenly ill, with a fairly high temperature, 103° F. to 104° F. and sometimes even higher. There is apt to be vomiting, restlessness, anorexia, etc. Some few cases may be ushered in with a chill. As a distinct chill in early childhood is not common, this symptom is of considerable value when present. A large majority of these cases have some complicating gastro-intestinal disturbance which often leads to an error in diagnosis. The child is commonly sensitive to handling and there may be tenderness over one or both kidneys.

A moderately high leucocytosis is usually present.

Some few children have a vulvo-vaginitis, as did two of my cases. This condition is usually accompanied by tenesmus, burning is also complained of if the child is old enough. The child often cries out in her sleep, perhaps asks for water frequently during the night as well as in daytime, she may rapidly lose weight.

One important and fairly constant symptom in chronic cases is an extreme pallor, often described as a grayish or ashy whiteness of the skin. The general tendency of these cases is towards chronicity, the symptoms abating for days or even weeks, the temperature remaining normal and the child perhaps gaining in weight and may seem quite well, when more or less suddenly high temperature and all the acute symptoms recur.

Diagnosis.—The first and important step is the examination of the urine in all cases as this may reveal the cause of many obscure symptoms. The urine may at times appear quite clear and perhaps within forty-eight hours may be turbid. Pus may be present in sufficient quantity to cause a marked precipitate.

The urine should be centrifugalized, especially if clear as only a few pus cells may be present.

The colon bacilli are found in clumps. A few red blood corpuscles and an occasional hyalin or granular cast may be found. A trace of albumen (usually accounted for by pus) is often present. The urine is generally acid on passing but soon becomes alkaline and hence it is advisable to have a freshly voided specimen. Morse has reported cases with the urine alkaline when voided. A definite diagnosis practically depends upon the microscopical and cultural examination of the urine. A milky urine should always be examined for the colon bacillus.

As stated previously, when a child (usually female) has a high temperature, rapid pulse and

more or less prostration, perhaps with a history of periodical intestinal disturbance and physical examination is negative, remember the possibility of a pyelocystitis. It might not be amiss at this point to call your attention to the frequency that an otitis media may be the cause of an obscure fever, and if the urine is found negative the ears should be examined. If urine and ears are both negative there is probably tuberculosis somewhere.

Prognosis.—Goepperts' and Jefferies' mortality was twelve per cent., this included nephritic cases.

Ramsey reports twenty-five cases with no deaths.

The prognosis depends, to a great extent, upon the treatment instituted, recent cases readily respond and chronic cases with anemia, prostration, etc., are more protracted. The pyelonephritic cases have a higher death rate.

Treatment.—There seems to be some variance of opinion as to treatment among different physicians who have reported cases. I here quote Thompson's statement regarding treatment:

The main and only essential treatment consists in rendering the urine neutral when passed, by the administration of alkalis, as speedily as possible, and in keeping it so until all the symptoms have disappeared.

When this indication is thoroughly carried out its good results are very remarkable. The pain and uneasiness rapidly vanish and the temperature falls to normal within three days. The pus cells also disappear. The bacteria, however, may persist for a long time after the pus has gone, but they seem to do no harm. The alkaline treatment must be continued for a week or two at least, in spite of the depressing effect which it has on the child's general condition and the loss of appetite which it is apt to occasion, if it is stopped too soon the symptoms return. Thompson and Still use potassium citrate, one-half to one dram or more in twenty-four hours. Most American and German pediatricists use hexamethylenamine, one to three grains, three times daily, given continuously for some time or alternating with alkalis.

Vaccine Treatment.—I have treated but one case by this method as reported in this paper. I will quote from Dr. Hugh Cabot's report of twenty-one cases of pyelocystitis and pyelonephritis treated by autogenous vaccines.

Duration of treatment, two months to two years. Of the twenty-one cases thirteen were relieved of symptoms and in but two cases was there a permanent disappearance of the bacteria.

Many others report very satisfactory results by vaccine treatment.

CASE I. S. L. Female, 7 months, breast fed, well nourished. She was brought to me because she was feverish and fretful, did not sleep well. She had recently had an attack of enteritis; temperature 102° F.; physical examination negative as to cause of fever. The urine obtained was milky, acid in reaction and contained pus cells and colon bacilli. Treatment: Hexamethylenamine 5 gr. four times daily, water freely. I saw this case but once more but at that time all symptoms had disappeared and temperature was normal.

CASE II. M. W. Female, 3 years. Had been well until three and a half weeks before, when her mother noticed that she was feverish and irritable, perspiring on slight exertion, slept poorly and appetite fickle, bowel movements frequent and offensive for a day or two. This would improve only to recur in a few days. During this period she developed a diffuse rash thought to be measles. At my first visit she was pale, irritable, musculature flabby, giving every evidence of having been sick for some time. Temperature $100\frac{3}{4}^{\circ}$ F. Physical examination revealed slight tenderness over right kidney and a vulvo-vaginitis; bowel condition good at this time. Upon questioning the mother I learned that the girl urinated frequently, apparently with some pain; this was especially so at night. Thirst marked. Urine milky, acid reaction, containing pus cells and colon bacilli. Treatment: Hexamethylenamine 5 gr. four times daily with water given freely. This girl made a speedy recovery and is now quite well. The urine still shows a few colon bacilli, however.

CASE III. W. Male, 9 months, still on breast. This boy had had frequent attacks of enterocolitis accompanied with considerable rise in temperature. The child was pale and fretful, temperature irregular. Being unable to account for continued temperature a sample of urine was examined for the colon bacillus, which was found. In this case I gave hexamethylenamine 5 grains four times daily for ten days, then potassium citrate 5 grains four times daily for same period. Recovery complete except a few colon bacilli being found at times.

CASE IV. B. S. Female, 18 months, breast fed for 9 months. Physical condition excellent. This girl was frequently taken with attacks of entero-colitis, which were controlled with difficulty. Her temperature often reached 103° F. during these attacks and continued irregularly after bowel movements were normal, and no cause could be discovered for it, urine, acid reaction, milky in appearance, contained some pus and colon bacilli. Hexamethylenamine 20 grains daily caused improvement, but alternating with alkaline treatment was more effective.

One case especially interesting to me, but perhaps somewhat away from the title of this paper, I will also report.

Male, age 57 years. Has to his knowledge passed a milky urine with a marked precipitate for the past fifteen years. At intervals during the past eight years has had marked hematuria, sometimes preceded by a colicky pain in right kidney region, extending along course of ureter. He has been treated by several physicians. Dr. Townsend kindly catheterized the ureters in this case with the following result:—Left kidney urine normal. Right kidney urine showed many pus cells, hyaline and granular casts, red blood corpuscles and the bacillus coli communis in nearly pure culture. Diagnosis, pyelonephritis of right kidney due to colon infection. Treatment by autogenous rendered the urine free from colon bacilli and pus markedly diminished. This case now, however, eight months later, shows colon bacilli and some pus again.

This patient gives the history of a fall about two years previous to noting this condition of urine, striking over right kidney with considerable force. Did this injury cause the original infection or had patient carried this condition since childhood?

During the past ten months I have treated five other cases in children (all females) due to this cause, but the ones cited above illustrate them all.

It has been my practice to give fairly large doses of hexamethylenamine, as shown in Case No. I. Twenty grains daily at seven months. The symptoms have been relieved in all of my cases, even where a few bacilli are still present in the urine.

PROLAPSUS UTERI, VENTROFIXATION.—O'Connor, in *The London Medical Lancet*, says that permanent reliance cannot be placed on any method of suturing the fundus. He adopted the following procedure: The abdomen having been opened by a low central incision, the uterus is drawn forward with the left hand, and a small transverse cut is made at the site of the reflection of the peritoneum on the anterior surface of the uterus (exactly similar to the preliminary peritoneal incision in hysterectomy). With the handle of a knife or with the right index finger, the peritoneum with the bladder is pushed downward and forward, until a space about an inch square is left on the anterior surface of the cervix. The peritoneum on each side of the exposed area is seized with pressure forceps, and is retracted out of the way, while three strong catgut sutures are passed, about one-third of an inch apart, through the denuded surface of the cervix, deep enough to get a firm grip of the cervical muscular coat. The needles having been removed, the ends are drawn out, respectively, on each side through the recti muscles, by the aid of Childe's ligative forceps. Thus the peritoneum is excluded, and the exposed cervical connective tissue is brought into direct apposition with the recti. Before tying these three fixation sutures, the author always closes the peritoneal layer of the parietal wound by a continuous catgut suture, the first few loops of which he passes also through the uterine peritoneum just above the denuded area, in order that no raw surface may be left for the omentum or the intestines to adhere to. The three cervix-recti sutures are next tied, and the muscles are approximated through the remainder of the incision by another catgut suture. The rectus sheath is similarly closed, and the skin is united by a subcuticular silk thread.—*Charlotte Med. Journal*.

Persistent tachycardia should indicate a search for other evidences of hyperthyroidism. A goiter is not essential to the diagnosis.—*American Journal of Surgery*.

Vermont Medical Monthly.

*A Journal of Review, Reform and Progress in the
Medical Sciences.*

H. C. TINKHAM, M. D., }
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EDITORIAL.

There has been much newspaper talk about a "wave of crime" in Vermont and the occurrence of twenty homicides in the State in the last year, would seem to justify this characterization of the conditions. This state of affairs naturally suggests an inquiry into the cause and the first thing which comes to one's mind is the increase in our foreign population. Of the twenty homicides mentioned above, five can properly be laid to this cause, but in the case of the other fifteen, the parties were Americans. A fourth of the murders is probably greatly in excess of the percentage of our foreign population, but excluding these entirely from our calculation, fifteen homicides within twelve months, in a population of three hundred and fifty thousand, is altogether too many. This rate would be equivalent to a murder list of one hundred and forty-six in New York City. It seems to us that this condition calls for radical measures in dealing with the criminal. That these crimes follow so closely the practical abolishment of capital punishment, may be a mere coincidence, but it is certainly worthy

of note. The fact that in one instance the evidence in court showed that the murderer inquired the day previous to his deed, if capital punishment had been abolished in Vermont, and was answered in the affirmative, certainly indicates that this thought had some bearing in this case at least. The duty of society is to accomplish the greatest good to the largest number—to insure to the law-abiding citizen, safety in the conduct of his legitimate business and pleasure. We believe that this right can not be safe-guarded without severe and summary punishment for those who are guilty of murder. There is much sickly sentiment about capital punishment. The taking of a human life is of course, a serious procedure and should never be done without due deliberation, but in this country with our jury trials, where every man is judged innocent until proved guilty, where the burden is entirely upon the State, and the rights of defence are so carefully safe-guarded, there is little danger of an unjust conviction. We believe that the reluctance to inflict capital punishment upon the convicted murderer, oftentimes results in the loss of innocent lives in exchange for the guilty and worthless criminal saved. This applies particularly to the degenerate criminal—the being of unstable mentality, and inherited criminal instincts, the wretch for whom sentimentalists plead most passionately. The lower down we go in the scale of mentality, the greater part the lower element—fear of consequences—takes in the restraint against animal tendencies. With the approach to the animal, stronger and stronger becomes the fear of bodily hurt. The abolition of capital punishment removes entirely this, the strongest motive for restraint, and the criminal instinct, the tendency to give way to animal passions and deeds of violence, is more likely to gain the ascendancy. It is safe to say that long terms in prison, even a life sentence, have little terror for individuals of this type. Prison conditions are in a good many

cases an improvement. The warm shelter, the good food, the easy work, together with the holiday celebrations, which we see so well advertised in the papers, look actually attractive to many. Moreover, there is the biennial prospect of pardon and the plans for escape, to add zest to the monotony of confinement. How many life prisoners ever actually die in prison? Furthermore, by leniency to these criminals, on one plea or another, we are adding the further peril of the multiplication of these defective and criminally inclined. Acquitted, pardoned out, or acquitted by reason of insanity, to be later discharged from asylums as cured, these criminals are apt to procreate and leave behind them more of the same class to be dealt with by future generations. So great has this danger become, that some states, like Indiana, have adopted the radical method of the sterilization of criminals. If we do not wish crime to become popular, we must stop coddling criminals.

In substantiation of the above we copy from some statistics compiled by the Massachusetts Civic Alliance:

RESULTS OF LIFE SENTENCE.

From 1838 to 1884 all the MURDERERS in Rhode Island except two were sentenced to life imprisonment. Their life sentences were terminated as follows:

DIED in	10 years.
PARDONED in	9 years.
PARDONED in	12 years.
PARDONED in	4 years.
PARDONED in	7 months.
DIED in	4 years.
INSANE in	14 years.
PARDONED in	21 years.
DIED in	5 years.
PARDONED in	12 years.
PARDONED in	15 years.
DIED in	3 years.
PARDONED in	3 years.
PARDONED in	8 years.
PARDONED in	7 years.
PARDONED in	19 years.
PARDONED in	11 years.
PARDONED in	2 years.
PARDONED in	6 years.
PARDONED in	21 years.
DIED in	3 years.
HUNG HIMSELF in.....	3 months.
PARDONED in	7 years.
DIED in	5 years.
DIED in	1 year.

PARDONED in	11 years.
STILL SERVING SENTENCE.....	24 years.
PARDONED in	21 years.
PARDONED in	18 years.

NOTE.—One United States prisoner is omitted.
[Taken from statistics compiled by Hon. Andrew J. Wilcox, Warden, Rhode Island State Prison, on request of Judge Charles F. Stearns, Ex-Attorney-General].

THE TWELFTH UNITED STATES CENSUS, VOL. 3, PAGES 572 AND 573, records more homicides in *Rhode Island* and *Maine where murder is punished by imprisonment*, than in all the other New England States where murder is punished by death.

PROPORTIONATE TO POPULATION.

77%	more murders in Maine than in Mass.
*92%	" " " " " " Vt.
109%	" " " " " " Conn.
360%	" " " " " " N. H.
173%	more murders in Maine and R. I. than in Mass., Vt., Conn. and N. H.

PROPORTIONATE TO POPULATION.

154%	more murders in R. I. than in Mass.
*175%	" " " " " " Vt.
200%	" " " " " " Conn.
560%	" " " " " " N. H.

And in the District of Columbia where juries are empowered to return verdicts qualified by the words "without capital punishment" there are over 500% more murders than in Massachusetts.

This last U. S. Census authoritatively has demonstrated that the weakening of the death penalty in civilized states is a return to barbarism, and sustains the consistent attitude of the Massachusetts Civic Alliance which for ten years has been the only organization defending our Capital Punishment Laws in the Legislatures of Massachusetts and other states.

Issued by the Mass. Civic Alliance, Boston.
EBEN W. BURNSTEAD, Secretary.
50 Bromfield Street, Jan. 6, 1912.

Another factor which cannot be overlooked by any observing person in connection with homicides and violent deaths generally, is the constancy with which alcoholic drinks figure in the circumstances leading up to the death. Almost without exception in homicide cases, the murderer is shown to have been under the influence of liquor when committing the crime. Similar fact holds true in regard to persons meeting accidental death—with few exceptions these persons are intoxicated. While these may be only coincidences, it is nevertheless, a stain on our

*Before change in law made by last Legislature giving to juries discretionary power as to penalty.

community life that such statements are possible. One might not be surprised to learn of the prevalence of the drinking habit among foreign laborers, but to find the same habit in its worst forms constantly being indulged in by American young men, who are often sons of old prominent families, is a sad commentary on the tendency of the present generation. This seems to be particularly true in rural districts and small villages where attractions are few and where the home and church fall short in keeping the young men from the temptations which always lie in wait for the idle. In such places, it seems that the regular rendezvous of a certain class of these growing boys after the day's work is done, is a store or shed, a field, or a corner where they may be found nightly engaged in their nefarious education. Clear alcohol seems to be the most easily obtained liquor, as well as the preferred one and this diluted one-half with water, furnishes the drink which is passed around the company. The reading of obscene literature, telling of obscene stories, and boasts as to what one would do with this or that woman or girl, if opportunity should offer, constitutes the only remaining factor for firing the imaginations and inflaming the passions of the future convicts. Thus fortified, the young man, in a spirit which might well be trained along other lines, starts off to make good his boast, often goes farther than he planned and commits a murder or some heinous crime. This is the oft repeated story in our law courts, in fact an almost expected story, where youths of good or fairly good parentage are concerned. The remedy for such a condition cannot be looked for in law. It is a problem of the home, the church and the education. To one not of the clerical or spiritual order, it would seem that the burden of the responsibility rests upon the churches and that while thousands of dollars are being sent to Christianize foreign countries and used for the so-called "poor-

whites" of the south, some substantial portion of the money might well be kept in our own state to furnish healthful amusement for our young people, to the upraising of the growing generation and the supplanting of the alcohol-fired, filthy obscenity of the street corner and secluded meeting place.

The occurrence of over three hundred and fifty cases of smallpox in Vermont, with no deaths, and few severe cases and with no popular panic, serves to emphasize the change which has taken place in the character of this once dreaded disease. The general tendency of any communicable disease is to become less and less severe as successive epidemics follow each other. In other words a natural, or racial, immunity seems to be developed after a time. Instance of such an immunity we see in the comparative freedom of the colored race from yellow fever. In smallpox, we have undoubtedly in addition to this natural change in the relation between the infection and the infected, another factor in vaccination. Acquired immunity can unquestionably be transmitted to descendants to some extent as a natural immunity. The children of parents immune by reason of an attack of the disease or vaccination will usually have a certain degree of natural immunity. Unfortunately, in the case of smallpox, this lightening of the clinical symptoms seems to have no relation to infectiousness of the disease and furthermore the very mildness of the cases renders the diagnosis more difficult and the spread more probable. Were it not for a few typical cases, and the ability to trace back many of the atypical cases to them, it would be impossible to make a positive diagnosis in fully one-half of the instances. This condition of affairs accounts to a great degree for the skepticism of so many physicians which is a serious hindrance to the work of proper quarantine. It is safe to say that these men have not

seen any of the typical cases and an inspection of some of these would convince the most skeptical, of the true nature of the malady.

NEWS ITEMS.

A thirteen months' old girl was exhibited before a clinic at the Johns Hopkins Hospital recently who had four arms and four legs. Dr. Richard H. Fallis, chief of the Surgical Clinic, told the parents that an operation for the removal of the superfluous limbs would be dangerous. The legs and arms branch out on a line with the child's hips.

On December 1st, twelve nations will be represented by delegates at a conference at The Hague, on the subject of regulating the sale and use of opium and cocaine. The conference is invested with full powers.

A mother whose five year old daughter has just died in New York City from diphtheria without medical attention has been held on a charge of criminal neglect by the coroner. Dr. Walter Bense, Sanitary Superintendent, said that this was the first case of neglect of a contagious disease through Christian Science treatment that had come to his notice.

Dr. A. J. Thomas has removed from Jacksonville, Vt., to Poultney, Vt., but for the present he is in Kansas owing to a death in his family.

In California, The State Board of Pharmacy is cleaning up the opium joints. In Chinatown, San Francisco, 210 users of the drug have just been arrested in one raid. The state officers have begun a campaign against those who use opium at home.

It has just been decided by the Appellate Division of the Supreme Court in New York that the health department records are not open to public inspection. The records may be examined by an individual who can show that he is seeking for information for some legitimate and specific purpose. In rendering its decision the court said: "In consequence of the nature of its duties, it becomes the repository of the records concerning most intimate affairs of the individuals resident within the limits of the municipality and among these records are doubtless to be found many matters of no real public interest but which

might, if disclosed to whosoever sought to examine them, be used for sinister or unworthy purposes."

The Boston Board of Health has appointed Dr. Eliza J. Dadum of Boston, Tufts Medical School, 1901, a member of the examining physicians for the Boston public schools.

Twenty-six bakeries in Manhattan were given peremptory orders by the Board of Health in November to close unless their sanitary defects were immediately rectified. Commissioner Lederle states that more than two thousand inspections of the bakeries of the city have been made and special investigation both as to sanitary condition and the quality of food-stuffs used, has been carried on. Cases have been brought in special sessions for employment of unfit materials and inspectors have also warned the owners or occupants of many bakeries that drastic action would be taken unless conditions were changed. A considerable number of unsanitary places were found, but at present the conditions are greatly improved.

An epidemic of typhoid fever is reported from Trenton, N. J., where on Dec. 4 there were over a hundred cases and the number was rapidly increasing. The outbreak is attributed to pollution of the Delaware River, from which the city derives its water supply, and the services of the State Board of Health have been called into requisition.

The death in New York on Dec. 7 of Henry Snowden Ward of England, who recently came to this country to lecture in connection with the Dickens Fellowship, of which he was secretary, was due to an unusual pneumococci infection. This did not attack the lungs at all, but apparently commenced in the ear, from whence it invaded the cerebro-spinal system. The symptoms finally pointing to such an invasion, lumbar puncture was made, when the spinal fluid was found to be completely loaded with pneumococci. In the hope of affording relief, a mastoid operation was done by Drs. A. B. Duel and W. S. Bainbridge, but this proved futile and the patient rapidly succumbed.

Dr. Joseph S. Neff, Director of the Department of Public Health and Charities of Philadelphia, has been elected president of the Municipal Health Officers' Section of the American Public

Health Association which held its annual convention in Havana, Cuba. It is announced that the association will meet in one of the eastern cities of the United States next year.

Mary Mallon, who was designated as a "typhoid carrier" by the Board of Health of New York City, several years ago and commonly known as "Typhoid Mary" and who has been confined for a time on North Brother Island, is to bring suit against the city for \$50,000. When she was released from the Island, she agreed that she would not again take a place as cook and she now alleges that this, together with her notoriety as a germ carrier, makes it impossible for her to gain a livelihood.

There are at present one hundred cases of typhoid fever in the New Jersey Prison at Trenton and it is feared that the disease will become general among the inmates.

A jury in New York City has just decided that a woman's husband need not pay the estate of Dr. Charles Jewett \$300 for an operation following which the woman immediately died. Justice Marks set aside the verdict as against the weight of evidence and ordered a new trial. The lawyer who defended the case said that objection to payment was not because the woman died but because the husband had not contracted to make a payment to Dr. Jewett and did not know that an operation was to be performed. Before the woman died, the husband had signed and delivered a check for \$300 in payment for the operation, but he at once stopped payment of the check when she died.

There have been several deaths from smallpox in New England during the present month.

Report from Saint Nazaire, France, states that when the trading ship *Antoinette* reached that port from Java, Dec. 5th, her entire crew of twelve men were found in an advanced stage of sleeping sickness. Three other sailors had died of the disease during the voyage. The situation reminds one of the "Ancient Mariner" and the grewsome ballad in Stevenson's "Treasure Island," "Fifteen men on a dead man's chest."

The Medical Review of Reviews announces that it is about to absorb the *Therapeutic Medicine* and some entirely new ideas in medical

journalism are to appear in the conduct of the journal.

Dr. J. M. T. Finney of Johns Hopkins College at Baltimore has declined the presidency of Princeton University. The doctor says he feels that his work in Baltimore is not yet done.

From an editorial in the *New York Sun* of December 18th, we quote this paragraph on "The Governor and the Keeper of the City Gate." The campaign against Dr. Doty has been one of the most transparent and contemptible pieces of political maneuvering this town has seen in recent years. Even if directed against an inefficient public servant, this endeavor to put in the hands of politicians a lucrative and desirable office would have deserved defeat. If Governor Dix accepts the tittle tattle, exaggeration, gross misrepresentation which the Bulger report contains as adequate reason for replacing Dr. Doty as keeper of the New York gate a majority of his fellow citizens without regard to partisan affiliations, will believe that he has been a willing accomplice in a scheme to provide one job the more for some politician or politician's protege at the risk of public health and in defiance of public opinion.

Dr. Henry A. Schneider, University of Vermont College of Medicine, 1908, now of Pittsfield, Massachusetts, and Charlotte Mae Wheeler of White River Junction were married December 4th.

There has been between three hundred and fifty and four hundred cases of smallpox in Vermont during the fall. The cases have been mostly in Caledonia and Orleans Counties.

A meeting of the Health Officers of towns in which there have been cases of smallpox was called by the State Board of Health on December 19th.

A daughter was born recently to Dr. and Mrs. R. M. Pelton of Richford, Vermont.

Dr. W. S. Phillips of Arlington, Vermont, is now located in Burlington, Vt.

Dr. L. R. Brown, University of Vermont, 1899, has sold his practice at Winchester, N. H., to Dr. George E. Dimick, formerly of Jefferson, N. H. Dr. Brown is now in Burlington, Vermont, tak-

ing a post-graduate course at the University of Vermont.

The following from *Journal of Providence, Rhode Island*, concerns one well known around Burlington:

MEDICAL SOCIETY ELECTS.

The annual meeting and election of officers of the Kent County Medical Society was held yesterday afternoon at the parlors of the Warwick Hotel. The meeting was attended by a majority of the physicians of Kent County. The following officers were elected: President, Dr. Fenwick G. Taggart of East Greenwich.

Dr. Charles E. North of New York is addressing boards of health, milk inspectors' association, and other societies in various cities of New England. He has just stated in one of his addresses in Boston that good milk cannot be obtained at the present market price. He named 10 cents per quart as the lowest retail price for good milk. He also opposes the setting of an arbitrary standard for milk and says that the product should be labelled.

The Appellate Term of the Supreme Court of New York has decided that the knowledge of a dentist concerning his patient is not privileged like that of a physician. The justice in writing the opinion said:

"In the early days in England the province of the dentist was not recognized except as it fell within the scope of the function of the 'barber-surgeon,' whose multitudinous duties often included those not only of the barber and surgeon but of the physician and dentist as well. Within quite recent times it was customary for barbers and blacksmiths to extract teeth. Formerly the work of filling and plating teeth was frequently performed by the jeweller."

OBITUARY.

Dr. James Lyman Belknap died at the Massachusetts General Hospital, Dec. 29, from pulmonary embolism. He had been operated on a week previously for appendicitis and was doing well. He graduated from Harvard in 1902 and was 37 years old. He had been located in Wolfboro, N. H., since last April.

Dr. Henry P. Perkins of West Newton, Mass., died Nov. 26th. He was senior surgeon at the

Newton Hospital, and the Boston papers say, "he was noted both in this country and abroad for his delicate surgical operations." He was born at Lowell, Jan. 31, 1860.

Mrs. Wm. B. Mayo of Northfield died at the Mary Fletcher Hospital, Dec. 26th.

INFANT MORTALITY IN 1910.

Preliminary Statement Based on Advance Bulletin by the Census Bureau.

WASHINGTON, D. C., December 11, 1911.—Following recent special announcements of vital statistics drawn from Census Bulletin 112, which contains the preliminary results for the year 1910, an advance summary presenting statistics on the mortality of infants in that year was issued today by Director Durand, of the Bureau of the Census, Department of Commerce and Labor. It was prepared under the supervision of Dr. Cressy L. Wilbur, chief statistician for vital statistics, in the Census Bureau.

The deaths compiled in the advance bulletin and the annual registration report do not include all the deaths that occur in the United States, but only those returned from what is known as the "death registration area." This embraces certain states having effective registration laws and certain cities in nonregistration states in which deaths are collected under local ordinances. From this area the Census Bureau received transcripts of 805,412 deaths in 1910, of which number 154,373, or 19.2 per cent., were infants under 1 year of age. In 1909 the total number of deaths of infants under 1 year of age was 140,057, representing 19.1 per cent. of the total 732,538 in that year.

THE SECOND YEAR OF LIFE.

The number of deaths during the second year of life (33,080, or 4.1 per cent.) was only about one-fifth as great as the number during the first year, although it exceeded the number shown for any 5 year period between the age of 5 and that of 35. In 1909 the number of such deaths was 30,279, or 4.1 per cent. of the total. It is evident that the mortality during the first two years of infant life, and especially during the first year, is a very important factor of the general death rate, and that the ascertainment of the proportion of deaths during the first or second

year of life may be of great value in devising practical sanitary measures, even though such a comparison does not measure precisely the true infantile mortality.

It is customary among sanitarians and statisticians to measure the rate of infantile mortality by comparing the number of deaths of infants under 1 year of age during a given year with the number of births, stillbirths being excluded from both births and deaths. But such ratios are not available for the United States for the entire registration area, or even with satisfactory completeness for a single state or large city. Births are registered nowhere as fully as they should be, and, consequently, the computed rates of infantile mortality would be somewhat too high. Hence, for the registration area as a whole, and practically all the registration states and cities, there is no general comparison available except the very crude one of deaths of infants under 1 year of age or of children under 5 to the total number of deaths recorded.

PERCENTAGE OF DEATHS OF INFANTS AND CHILDREN.

Very marked differences are noted in the percentages of infant and child deaths to total deaths for various areas. The ratio of deaths of infants ranges among the registration states from only 11 per cent. for California to 24 per cent. for Pennsylvania. This does not indicate necessarily that the infantile mortality in Pennsylvania is more than twice as great as in California, since in the latter state, which has grown so largely by migration from other states, there is an unusually large proportion of adults and a correspondingly low proportion of children in the total population. Exceptionally high ratios may be due in some instances to the existence of infant homes or institutions to which children are taken from the city. For example, the high proportion shown for Lackawanna, N. Y. (79 per cent. under 5 years and 62 per cent. under 1 year of age), is due to the deaths of infants from the city of Buffalo.

In the entire death registration area 19 out of every 100 deaths at all ages in 1910 were among infants under 1 year and 27 among children under 5 years. Pennsylvania recorded the highest percentage both in deaths of infants under 1 year and of children under 5 years, namely, 24 per cent. for the former and 34 per cent. for the latter, and California the lowest, 11 per cent. and

16 per cent., respectively. In Colorado the percentages were 16 and 22; Connecticut, 20 and 27; Indiana, 16 and 24; Maine, 17 and 22; Maryland, 20 and 28; Massachusetts, 21 and 28; Michigan, 20 and 27; Minnesota, 19 and 26; Montana, 18 and 25; New Hampshire, 18 and 23; New Jersey, 21 and 29; New York, 19 and 27; North Carolina (including only municipalities having a population of 1,000 or over in 1900), 20 and 32; Ohio, 17 and 24; Pennsylvania, 24 and 34; Rhode Island, 23 and 32; Utah, 22 and 30; Vermont, 14 and 18; Washington, 16 and 22; and Wisconsin, 20 and 27.

Of all cities in registration states, as well as registration cities in nonregistration states, the lowest percentages of deaths of infants under 1 year, 4 per cent., and deaths of children under 5 years, 6 per cent., were shown for Santa Cruz, Cal. Lackawanna, N. Y., reported the highest percentage of deaths, 62, among infants under 1 year, and also the highest, 79, among children under 5 years of age.

PROPORTIONS FOR ALL REGISTRATION CITIES.

From all registration cities which are here arranged by states, the following percentages of deaths are shown among the two age periods under discussion:

In Alabama, Birmingham reported 15 per cent. of its deaths among infants under 1 year, and 25 per cent. among children under 5 years; Mobile, 12 and 18 per cent., respectively; and Montgomery, 15 and 23 per cent.

In California, the percentages for Alameda were 9 per cent. among infants under 1 year, and 12 per cent. among children under 5 years; in Bakersfield, 14 and 20 per cent., respectively; Berkeley, 10 and 16; Eureka, 9 and 13; Fresno, 19 and 29; Long Beach, 8 and 12; Los Angeles, 12 and 17; Oakland, 13 and 19; Pasadena, 8 and 11; Pomona, 14 and 15; Redlands, 11 and 14; Riverside, 8 and 12; Sacramento, 16 and 22; San Bernardino, 10 and 13; San Diego, 7 and 12; San Francisco, 11 and 15; San Jose, 15 and 19; Santa Barbara, 8 and 13; Santa Cruz, 4 and 6; Stockton, 7 and 10; and Vallejo, 12 and 17.

In Colorado, Colorado Springs reported 11 per cent. of its deaths as being among infants under 1 year, and 14 per cent. among children under 5 years; Denver, 13 and 17 per cent., respectively; Pueblo, 19 and 30; and Trinidad, 28 and 40.

In Connecticut, Ansonia reported 26 per cent. of its deaths as being among infants under 1 year,

and 44 per cent. among children under 5 years; Bridgeport, 23 and 32 per cent., respectively; Bristol town, 28 and 37; Danbury town, 17 and 22; Greenwich town, 28 and 34; Hartford, 16 and 23; Manchester town, 17 and 26; Meriden town, 21 and 28; Middletown town, 14 and 21; Naugatuck, 31 and 40; New Britain, 34 and 48; New Haven, 18 and 25; New London, 18 and 24; Norwalk town, 16 and 20; Norwich town, 14 and 22; Orange town, 17 and 19; Stamford town, 20 and 26; Torrington town, 28 and 41; Wallingford town, 24 and 34; Waterbury, 28 and 38; and Windham town, 19 and 25.

In Delaware, Wilmington reported 23 per cent. of its deaths as being among infants under 1 year, and 32 per cent. among children under 5 years.

In the District of Columbia, Washington reported 16 per cent. of its deaths as being among infants under 1 year, and 22 per cent. among children under 5 years.

In Florida, Jacksonville reported 14 per cent. of its deaths as being among infants under 1 year, and 19 per cent. among children under 5 years, and Key West, 35 and 44 per cent. respectively.

In Georgia, Atlanta reported 18 per cent. of its deaths as being among infants under 1 year and 26 per cent. among children under 5 years, and Savannah, 19 and 27 per cent., respectively.

In Illinois, Aurora reported 18 per cent. of its deaths as being among infants under 1 year, and 22 per cent. among children under 5 years; Belleville, 15 and 21 per cent., respectively; Chicago, 21 and 30; Decatur, 13 and 22; Evanston, 17 and 24; Jacksonville, 6 and 7; Quincy, 11 and 15; and Springfield, 18 and 23.

In Indiana, Anderson reported 19 per cent. of its deaths as being among infants under 1 year, and 27 per cent. among children under 5 years; East Chicago, 48 and 64 per cent., respectively; Elkhart, 13 and 17; Elwood, 28 and 40; Evansville, 18 and 25; Fort Wayne, 12 and 18; Gary, 34 and 46; Hammond, 22 and 32; Huntington, 13 and 15; Indianapolis, 15 and 21; Jeffersonville, 18 and 24; Kokomo, 20 and 30; Lafayette, 11 and 13; Laporte, 17 and 19; Logansport, 12 and 16; Marion, 19 and 27; Michigan City, 24 and 31; Mishawaka, 22 and 31; Muncie, 18 and 25; New Albany, 12 and 20; Peru, 10 and 16; Richmond, 14 and 19; South Bend, 26 and 34; Terre Haute, 16 and 25; and Vincennes, 20 and 31.

In Kansas, Kansas City reported 17 per cent. of its deaths as being among infants under 1 year, and 25 per cent. among children under 5 years; Leavenworth, 11 and 14 per cent., respectively; and Wichita, 18 and 25.

In Kentucky, Covington reported 16 per cent. of its deaths as being among infants under 1 year, and 23 per cent. among children under 5 years; Louisville, 13 and 20 per cent., respectively; Newport, 15 and 23; and Paducah, 14 and 22.

In Louisiana, New Orleans reported 15 per cent. of its deaths as being among infants under 1 year, and 21 per cent. among children under 5 years.

In Maine, Auburn reported 18 per cent. of its deaths as being among infants under 1 year, and 26 per cent. among children under 5; Augusta, 11 and 16 per cent., respectively; Bangor, 10 and 14; Biddeford, 27 and 42; Lewiston, 21 and 31; Portland, 15 and 19; and Waterville, 23 and 31.

In Maryland, Baltimore reported 20 per cent. of its deaths as being among infants under 1 year, and 27 per cent. among children under 5; Cumberland, 20 and 27 per cent., respectively; Frederick, 17 and 25; and Hagerstown, 23 and 28.

In Massachusetts, Adams town reported 37 per cent. of its deaths as being among infants under 1 year, and 48 per cent. among children under 5 years; Arlington town, 15 and 17 per cent., respectively; Attleborough town, 19 and 34; Beverly, 14 and 18; Boston, 19 and 27; Brockton, 19 and 25; Brookline town, 8 and 11; Cambridge, 19 and 26; Chelsea, 18 and 22; Chicopee, 36 and 50; Clinton town, 20 and 29; Everett, 18 and 24; Fall River, 39 and 50; Fitchburg, 25 and 35; Framington town, 14 and 19; Gardner town, 26 and 35; Gloucester, 13 and 17; Greenfield town, 13 and 18; Haverhill, 19 and 25; Holyoke, 35 and 46; Hyde Park town, 22 and 32; Lawrence, 35 and 47; Leominster town, 23 and 29; Lowell, 29 and 40; Lynn, 18 and 25; Malden, 18 and 22; Marlborough, 19 and 21; Medford, 12 and 14; Melrose, 17 and 21; Methuen town, 24 and 33; Milford town, 25 and 32; New Bedford, 38 and 49; Newburyport, 13 and 16; Newton, 16 and 22; North Adams, 17 and 24; Northampton, 12 and 14; Peabody town, 20 and 24; Pittsfield, 19 and 26; Plymouth town, 21 and 23; Quincy, 23 and 30; Revere town, 25 and 37; Salem, 21 and 28; Somerville, 17 and 23; Southbridge town, 31

and 46; Springfield, 20 and 31; Taunton, 25 and 32; Wakefield town, 19 and 23; Waltham, 12 and 17; Watertown town, 25 and 32; Webster town, 33 and 43; Westfield town, 23 and 29; Weymouth town, 14 and 19; Winthrop town, 15 and 19; Woburn, 19 and 27; and Worcester, 22 and 30.

In Michigan, Adrian reported 8 per cent. of its deaths as being among children under 1 year, and 14 per cent. among children under 5 years; Alpena, 32 and 37 per cent., respectively; Ann Arbor, 10 and 13; Battle Creek, 15 and 19; Bay City, 19 and 28; Detroit, 29 and 37; Escanaba, 28 and 37; Flint, 25 and 34; Grand Rapids, 20 and 26; Holland, 21 and 32; Ironwood, 32 and 46; Ishpeming, 26 and 30; Jackson, 14 and 18; Kalamazoo, 11 and 14; Lansing, 20 and 28; Manistee, 20 and 23; Marquette, 18 and 27; Menominee, 20 and 26; Muskegon, 19 and 24; Pontiac, 12 and 15; Port Huron, 17 and 24; Saginaw, 17 and 22; Sault Ste. Marie, 28 and 36; and Traverse City, 5 and 8.

In Minnesota, Duluth reported 22 per cent. of its deaths as being among children under 1 year, and 29 per cent. among children under 5 years; Mankato, 16 and 22 per cent., respectively; Minneapolis, 17 and 24; St. Cloud, 23 and 25; St. Paul, 19 and 28; Stillwater, 10 and 11; Virginia, 28 and 41; and Winona, 22 and 32.

In Missouri, Kansas City reported 16 per cent. of its deaths as being among children under 1 year, and 22 per cent. among children under 5 years; St. Joseph, 12 and 19 per cent., respectively; and St. Louis, 16 and 22.

In Montana, Anaconda reported 22 per cent. of its deaths as being among children under 1 year, and 31 per cent. among children under 5 years; Billings, 22 and 26 per cent., respectively; Butte, 16 and 23; Great Falls, 23 and 32; Helena, 17 and 21; and Missoula, 11 and 15.

In Nebraska, Lincoln reported 16 per cent. of its deaths as being among children under 1 year, and 23 per cent. among children under 5 years; while Omaha reported 16 and 20 per cent., respectively.

In New Hampshire, Berlin reported 49 per cent. of its deaths as being among children under 1 year, and 60 per cent. among children under 5 years; Concord, 9 and 11 per cent., respectively; Dover, 15 and 18; Keene, 13 and 19; Laconia, 23 and 28; Manchester, 32 and 41; Nashua, 30 and 37; and Portsmouth, 9 and 13.

In New Jersey, Asbury Park reported 20 per cent. of its deaths as being among children under 1 year, and 26 per cent. among children under 5 years; Atlantic City, 21 and 27 per cent; respectively; Bayonne, 29 and 43; Bloomfield, 17 and 27; Bridgeton, 14 and 18; Camden, 23 and 33; East Orange, 12 and 18; Elizabeth, 26 and 34; Garfield, 51 and 67; Hackensack, 23 and 32; Harrison, 30 and 43; Hoboken, 18 and 27; Irvington, 18 and 22; Jersey City, 22 and 30; Kearny, 12 and 20; Long Branch, 14 and 19; Millville, 21 and 28; Montclair, 26 and 36; Morristown, 15 and 24; New Brunswick, 27 and 35; Newark, 21 and 31; Orange, 19 and 28; Passaic, 40 and 50; Paterson, 20 and 28; Perth Amboy, 35 and 50; Phillipsburg, 22 and 34; Plainfield, 17 and 23; Trenton, 25 and 33; Union, 26 and 38; West Hoboken, 19 and 27; West New York, 25 and 41; and West Orange, 24 and 34.

In New York, Albany reported 13 per cent. of its deaths as being among children under 1 year, and 19 per cent. among children under 5 years; Amsterdam, 29 and 41 per cent., respectively; Auburn, 19 and 23; Batavia, 16 and 18; Binghamton, 15 and 19; Buffalo, 23 and 33; Cohoes, 25 and 39; Corning, 15 and 19; Cortland, 17 and 22; Dunkirk, 26 and 40; Elmira, 13 and 17; Fulton, 20 and 25; Geneva, 10 and 14; Glens Falls, 13 and 17; Gloversville, 19 and 23; Hornell, 11 and 16; Hudson, 16 and 18; Ithaca, 9 and 13; Jamestown, 17 and 22; Johnstown, 14 and 17; Kingston, 15 and 20; Lackawanna, 62 and 79; Little Falls, 15 and 20; Lockport, 12 and 15; Middletown, 5 and 9; Mount Vernon, 19 and 27; New Rochelle, 19 and 30; New York, 21 and 32; Newburgh, 15 and 22; Niagara Falls, 26 and 37; North Tonawanda, 36 and 53; Ogdensburg, 14 and 18; Olean, 15 and 20; Ossining, 14 and 25; Oswego, 20 and 24; Peekskill, 15 and 25; Plattsburgh, 27 and 34; Port Chester, 24 and 39; Poughkeepsie, 16 and 20; Rensselaer, 20 and 23; Rochester, 14 and 20; Rome, 16 and 21; Saratoga Springs, 14 and 20; Schenectady, 27 and 37; Syracuse, 21 and 27; Troy, 14 and 20; Utica, 22 and 29; Watertown, 18 and 25; Water-vliet, 19 and 28; White Plains, 19 and 24; and Yonkers, 25 and 35.

In North Carolina, Asheville reported 14 per cent. of its deaths as being among children under 1 year, and 21 per cent. among children under 5 years; Charlotte, 15 and 29 per cent., respectively; Durham, 20 and 35; Greensboro, 21 and

30; Raleigh, 18 and 23; Wilmington, 24 and 34; and Winston, 21 and 34.

In Ohio, Akron reported 23 per cent. of its deaths as being among children under 1 year, and 30 per cent. among children under 5 years; Alliance, 14 and 20 per cent., respectively; Ash-tabula, 23 and 33; Bellaire, 28 and 39; Cam-bridge, 21 and 26; Canton, 20 and 26; Chillicothe, 17 and 24; Cincinnati, 15 and 20; Cleveland, 25 and 35; Columbus, 14 and 20; Dayton, 19 and 25; East Liverpool, 24 and 37; Elyria, 21 and 25; Findlay, 11 and 15; Hamilton, 17 and 26; Iron-ton, 16 and 25; Lakewood, 28 and 37; Lan-caster, 15 and 19; Lima, 20 and 28; Lorain, 35 and 46; Mansfield, 16 and 21; Marietta, 10 and 16; Marion, 22 and 28; Masillon, 13 and 25; Middletown, 21 and 30; Newark, 18 and 22; Nor-wood, 13 and 16; Piqua, 16 and 18; Portsmouth, 20 and 36; Sandusky, 16 and 19; Springfield, 15 and 20; Steubenville, 22 and 32; Tiffin, 10 and 15; Toledo, 16 and 23; Warren, 16 and 22; Youngstown, 28 and 40; and Zanesville, 14 and 20.

In Oregon, Portland reported 14 per cent. of its deaths as being among children under 1 year, and 20 per cent. among children under 5 years.

In Pennsylvania, Allentown reported 23 per cent. of its deaths as being among children under 1 year, and 34 per cent. among children under 5 years; Altoona, 25 and 32 per cent., respectively; Beaver Falls, 30 and 39; Bethlehem, 20 and 32; Braddock, 35 and 52; Bradford, 15 and 19; Butler, 28 and 48; Carbondale, 18 and 24; Carlisle, 17 and 22; Carnegie, 28 and 48; Cham-bersburg, 15 and 22; Chester, 24 and 34; Coates-ville, 38 and 46; Columbia, 24 and 31; Connells-ville, 24 and 31; Dubois, 21 and 34; Dunmore, 40 and 55; Duquesne, 45 and 63; Easton, 16 and 21; Erie, 20 and 26; Greensburg, 19 and 25; Harrisburg, 18 and 24; Hazleton, 23 and 34; Homestead, 35 and 60; Johnstown, 29 and 39; Lancaster, 16 and 23; Lebanon, 22 and 31; McKees Rocks, 46 and 63; McKeesport, 28 and 44; Mahanoy City, 44 and 53; Meadville, 12 and 16; Monessen, 43 and 71; Mount Carmel, 36 and 54; Nanticoke, 38 and 56; Newcastle, 27 and 38; Norristown, 12 and 15; North Braddock, 40 and 55; Oil City, 25 and 30; Old Forge, 46 and 59; Philadelphia, 20 and 29; Phoenixville, 28 and 42; Pittsburgh, 24 and 36; Pittston, 29 and 41; Plymouth, 32 and 48; Potts-town, 22 and 30; Pottsville, 19 and 26; Reading, 23 and 32; Scranton, 24 and 35; Shamokin, 30

and 42; Sharon, 25 and 34; Shenandoah, 44 and 61; South Bethlehem, 40 and 54; South Sharon, 43 and 65; Steelton, 31 and 47; Sunbury, 22 and 34; Uniontown, 20 and 25; Warren, 15 and 26; Washington, 17 and 24; West Chester, 9 and 14; Wilkes-Barre, 24 and 32; Wilkinsburg, 15 and 21; Williamsport, 17 and 23; and York, 21 and 27.

In Rhode Island, Central Falls reported 36 per cent. of its deaths as being among children under 1 year, and 49 per cent. among children under 5 years; Cranston, 24 and 31 per cent., respectively; Cumberland town, 18 and 26; East Providence town, 24 and 31; Newport, 19 and 22; Pawtucket, 23 and 31; Providence, 21 and 30; Warwick town, 29 and 38; and Woonsocket, 35 and 50.

In South Carolina, Charleston reported 22 per cent. of its deaths as being among children under 1 year, and 33 per cent. among children under 5 years.

In Tennessee, Knoxville reported 16 per cent. of its deaths as being among children under 1 year, and 23 per cent. among children under 5 years; Memphis, 12 and 19 per cent., respectively, and Nashville, 14 and 22.

In Texas, Galveston reported 13 per cent. of its deaths as being among children under 1 year, and 18 per cent. among children under 5 years, while San Antonio reported 23 and 30 per cent., respectively.

In Utah, Ogden reported 14 per cent. of its deaths as being among children under 1 year, and 21 per cent. among children under 5 years, while Salt Lake City reported 17 and 24 per cent., respectively.

In Vermont, Barre reported 19 per cent. of its deaths as being among children under 1 year, and 23 per cent. among children under 5 years; Burlington, 26 and 31 per cent., respectively; and Rutland, 15 and 20.

In Virginia, Alexandria reported 16 per cent. of its deaths as being among children under 1 year, and 23 per cent. among children under 5 years; Danville, 19 and 32 per cent., respectively; Lynchburg, 23 and 32; Norfolk, 18 and 25; Petersburg, 25 and 32; and Richmond, 21 and 29.

In Washington, Aberdeen reported 17 per cent. of its deaths as being among children under 1 year, and 27 per cent. among children under 5 years; Bellingham, 12 and 16 per cent., respect-ively; Everett, 18 and 22; North Yakima, 12

and 20; Seattle, 14 and 19; Spokane, 21 and 28; Tacoma, 16 and 23; and Walla Walla, 14 and 17.

In West Virginia, Wheeling reported 19 per cent. of its deaths as being among children under 1 year, and 25 per cent. among children under 5 years.

In Wisconsin, Appleton reported 18 per cent. of its deaths as being among children under 1 year, and 22 per cent. among children under 5 years; Ashland, 17 and 22 per cent., respectively; Beloit, 18 and 27; Eau Claire, 8 and 14; Fond du Lac, 18 and 21; Green Bay, 30 and 38; Janesville, 14 and 19; Kenosha, 32 and 48; La Crosse, 12 and 17; Madison, 13 and 17; Manitowoc, 17 and 22; Marinette, 16 and 24; Milwaukee, 26 and 35; Oshkosh, 16 and 20; Racine, 20 and 29; Sheboygan, 17 and 26; Superior, 18 and 30; and Wausau, 25 and 34.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

EXOPHTHALMIC GOITER.

HUGHES DAYTON, New York (*Journal A. M. A.*, April 22), reports five cases of exophthalmic goiter in which the patients were treated by the use of thyroidectin prepared from the blood of thyroidectomized animals. He also had employed previously the desiccated milk of a thyroidectomized cow and of a similarly treated goat, each in one case. Summarizing the results of the treatment with thyroidectin, while the nervousness diminished in the first patient and tachycardia was less so long as the patient was recumbent, there was no actual improvement save gain in weight. In the second case with the same dosage for nine weeks lacking five days there was at first slight decrease of palpitation and nervousness but subsequently all symptoms increased. In the third case treated for three weeks there was no improvement greater than was obtained from other treatment or than could be accounted for by the partial rest and change of habits. In the other two cases, one treated fifty-seven days with 5 grains thyroidectin after eating and three days with 10 grains, and the other seven days with 5 grains and four days with 10 grains, there was no real permanent improvement in either, though in the first there was slight initial improvement but later aggravation of symptoms. All the cases were of moderate or marked severity and of long duration. The two patients treated with desiccated milk showed in one marked aggravation of symptoms and in the other there was some improvement which the diet regulations might have accounted for, especially the restriction of coffee drinking. His general impression is that any change for the better which was observed in any of these cases was due to rest, regulation of habits or to suggestion, or was a mere coincidence. The results of treatment with thyroidectin seem inferior to those secured by rest, symptomatic medical treatment or partial thyroidectomy.

SYPHILIS OF THE TURBINATE.

J. W. JERVEY, Greenville, S. C. (*Journal A. M. A.*, April 22), disputes the correctness of a statement in a recent text-book that it is difficult to mistake secondary syphilis of the nose for any other disease when a careful history is taken and a thorough examination is made. The anamnesis of the syphilitic, he says, is notoriously one of guile and the thorough clinical examination is often the ideal rather than the reality for reasons with which the practical man is conversant. As a matter of fact, syphilitic lesions of the nasal mucosa are comparatively rare and we may safely say there is no really clinical appearance of intranasal secondary syphilis. It is his belief that, excepting the primary chancre, the only cases of nasal syphilis which are usually promptly recognized on clinical examination are those that are first seen in the tertiary stages, when gummatous and necrotic processes are extensively in evidence. Hypertrophy of the turbinates in secondary syphilis shows only the symptomatology of hypertrophy due to other causes, and ulceration may occur as the result of pressure or nutritional errors in other diseases. The old-fashioned therapeutic test is, he believes, still the best.

LATE PREGNANCY.

C. C. NORRIS, Philadelphia (*Journal A. M. A.*, April 22), reports the case of a woman, aged 50, who had been twice married but had had no children, though she had been operated on after each marriage by dilatation and curetting and simple dilatation of the cervix without results. Menstruation had continued, usually with but slight discomfort. She had never had severe dysmenorrhea. The genital organs were rather normal though the os was small. Dilatation was performed and a rather thick Wiley drain inserted ten days before the expected monthly period. The Wiley drain is a sort of grooved-stem pessary. Pregnancy followed, with normal labor and delivery. The advanced age is of interest in this case, though menstruation is not uncommon after the age of 50. Norris has had one other case in which pregnancy followed the use of the Wiley drain in sterile women, but he insists on aseptic precautions in its use.

ENDO-ANEURYSMORRHAPHY.

G. S. CRABTREE, Culebra, Canal Zone (*Journal A. M. A.*, April 22), reports a case of traumatic popliteal aneurysm due to gunshot wound, operated on successfully by endo-aneurysmorrhaphy. The re-constriction of the artery was done by interrupted sutures of fine chromic gut, about three-sixteenths of an inch apart, and the sac was obliterated by layer on layer of continuous plain catgut sutures following Matas' second method of closure, leaving the sac buried in the wound without inversion of skin flaps or drainage. There was immediate restoration of circulation to the leg and the patient was at work a month after the operation, with apparently normal circulation. A point of special interest was a second sac or diverticulum opening off the main sac. It was wiped out thoroughly, and in the subsequent part of the operation was disregarded and seems to have become obliterated.

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For the treatment of furunculosis and carbuncle, sycosis, suppurative acne, eczema, felons, osteomyelitis.

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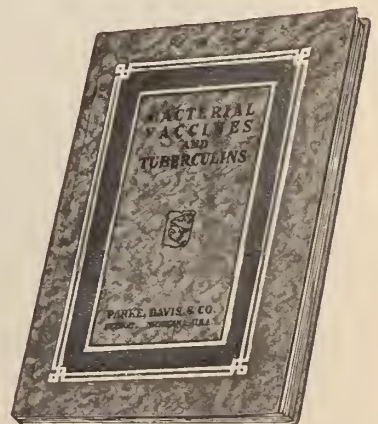
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THERAPEUTIC NOTES.

A DISTINCTIVE PIECE OF LITERATURE.—“Here is something different.” This is apt to be the first thought of the physician upon breaking the wrapper of Parke, Davis & Co.’s new brochure on bacterial vaccines and tuberculins. And the external appearance of the book is in no wise misleading. The “difference” applies to the printed page as well as to the handsome cover in artistically blended browns and gold. The brochure contains forty-eight pages in addition to the cover and thirteen full-page engravings in colors.

The work is divided into three parts or sections. Some of the subjects considered in the first section are: “What is the Difference Between Bacterial Vaccines (Bacterins), Serums and Toxins?” “How are Bacterial Vaccines Prepared?” “Therapeutic Action of Bacterial Vaccines”; “When Should Serums be Used, and When Bacterial Vaccines?” The second section treats of the origin and nature of the bacterins, the relative merits of “stock” and “autogenous” vaccines, the opsonic index, and the best method of using the bacterins, together with a description of each vaccine, including references to preparation, therapeutics and dose. The third section is devoted to a consideration of the tuberculins, with dilution and dose tables, descriptions and illustrations of the various diagnostic tests, etc.

Briefly stated, the booklet is a concise review of the essential facts relating to bacterial-vaccine therapy, containing precisely what the seeker after this kind of information wants. It is not padded with clinical reports—in fact, it contains none. We understand that Parke, Davis & Co. will be pleased to send a copy of this unique and valuable brochure to any physician requesting it. Address them at their home offices, Detroit, Mich., specifying the “new booklet on bacterial vaccines,” and mention this journal.

NEUROTIC ANOREXIA.—While loss of appetite and nausea are usually symptoms of a host of diverse pathological conditions, they sometimes constitute a disease in themselves—a kind of neurosis. In these cases the physician will find Gray’s Glycerine Tonic Comp. of almost specific value for restoring the impaired appetite. It is not only agreeable to take, but produces its benefits at once in such a natural way that before the patient realizes it, the normal amount of food is being taken. Its efficacy in these neurotic cases makes Gray’s Glycerine Tonic Comp. exceedingly useful in relieving the severe nausea that often occurs in early pregnancy.

WINTER COLDS.—There is nothing that will remove a tendency to colds (nasal catarrhs, bronchitis, laryngitis) more quickly and satisfactorily than a course of treatment with Gray’s Glycerine Tonic Comp. Its effect is not only to promote reconstructive metabolism and thus enable the whole body to better withstand disease, but in addition, it imparts a local effect to the respiratory structures that unquestionably increases the local resistance to bacterial invasion. One thing is certain, cases of the ordinary respiratory diseases not infrequently prove intractable to all treatment until Gray’s Glycerine Tonic Comp. is administered. Experience has proven this, and there are countless physicians who use this depend-

able tonic exclusively for clearing up their cases of pharyngitis, laryngitis, bronchitis and allied conditions.

THE APPETITE IN TUBERCULOSIS.—In view of the fact that hypernutrition, or so-called forced feeding constitutes one of the important indications in the treatment of many cases of tuberculosis, more than ordinary attention must always be devoted to maintaining the appetite. Unfortunately, many of these patients have an aversion to the very foods which are best adapted for repairing and resisting the ravages of the disease. It is here that Gray’s Glycerine Tonic Comp. serves one of its most important purposes, by reason of its notable capacity to awaken a deficient appetite in a perfectly natural manner. It not only possesses the desirable feature of great palatability but through its tonic properties, it never fails to impart just the right tone to the digestive organs. Thus the effects are so much more permanent and far reaching than are obtained from ordinary stomachics, that not only are larger quantities of nourishment freely taken by the patient, but a correspondingly increased amount finds its way to the remote tissues.

THE POST-TYPHOID TONIC.—It is usually at this season of the year that typhoid fever exhibits its maximum incidence, especially in the larger cities. One probable reason for this is the return of the army of families to city homes from the many more or less unsanitary summer resorts in country districts during the stage of incubation, and the subsequent development of the characteristic symptoms of the disease. As every physician realizes, the systemic poisoning is usually profound and the duration of the infection is such that the organism is almost always distinctly depreciated and devitalized after the four, five or six weeks febrile period. This condition of general systemic depression at the beginning of convalescence certainly indicates the necessity of reconstructive measures. As soon as it is safe to gradually increase the patient’s dietary, it is also wise to commence tonic and hematinic treatment. Care must be taken, however, to avoid derangement of the digestion, and for this reason, Pepto-Mangan (Gude) is especially indicated as the most efficient, readily tolerable and generally efficient reconstructive and hematinic. This organic combination of the peptonates of iron and manganese never creates aversion, destroys the appetite nor causes gastro-intestinal irritation. Through its regular use typhoid convalescence is promoted and distinctly hastened.

MODERN MARTIAL THERAPY.—Amid the veritable swarm of new medicinal agents of all varieties that have been introduced to the therapist during the last twenty years, and in spite of the great advances in general medicine during the same period, there has not as yet been proposed any remedy which can successfully compete with iron in the treatment of anemic and generally devitalized conditions. This metallic element, in one form or another, is still the sheet anchor in such cases, and when intelligently administered in proper form and dosage can be depended upon to bring about marked improvement, provided serious incurable organic disease is not the operative cause of the existing blood impoverishment. The form in which to administer iron is, however,


very important. The old, irritant, astringent martial medication has had its day, and properly so. Probably the most generally acceptable of all iron products is Pepto-Mangan (Gude), an organic combination of iron and manganese with assimilable peptones. This preparation is palatable, readily tolerable, promptly absorbable, non-irritant and still distinctly potent as a blood builder and general tonic and reconstructive.

THE C. V. MOSBY COMPANY, of St. Louis, has announced the publication of a book on Pellagra, to be ready by January 1, 1912. This book is being prepared by Doctor Stewart R. Roberts, of Atlanta, Ga., who has just returned from Italy, where he studied the disease in its natural habitat. While in Europe the doctor made extensive research regarding the etiology and treatment of Pellagra, and the data contained in the book will reflect the latest and best work that has been done in connection with this disease, making it a reliable guide to those seeking information on the subject.

A STORE OF FAT AND STRENGTH.—A store of fat and strength in the tissues affords the best insurance against the infectious processes, for, so supplied, the body is well able to resist disease. It is pretty generally accepted at the present day, that the best means of charging the tissue with the power of resistance lies in cotton seed oil, the most dependable tissue food at the profession's command. Nutromul (Brown's Cotton Seed Oil Emulsion) is growing into wide favor for this purpose, for it contains a large percentage of cotton seed oil in an easily digested and assimilable form. The positive worth of the oil in this emulsion, is added to by the incorporation of the hypophosphites of lime, soda and manganese. Nutromul is palatable and as it does not cause gastric unrest, it may be given for long periods. Sample bottle to any reputable medical man without charge if request is sent to Nottoc Laboratory, Atlanta, Ga.

THE ACCOMPLISHMENT OF IDEAL SEDATION.—In the accomplishment of ideal sedation, a drug must possess undoubted therapeutic activity and be free from dangers or distressing after-effects. Whilst chloral, for example, is therapeutically active, yet its administration is attended by certain dangers, not the least among them being the possibility of habit-formation. The drug most nearly meeting the requirements of the ideal sedative and soporific, is Pasadyne (Daniel's Concentrated Tincture of Passiflora Incarnata), which, as is well known, was formerly called Daniel's Passiflora. Under its influence, an excited brain quiets down, and refreshing sleep is produced. Pasadyne is reliable, and as it does not constipate or subject the patient to other evil effects it is far preferable to similar agents. A sample bottle will be furnished if application be made to the Laboratory of John B. Daniel, Atlanta, Ga.

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with the need of improving his bodily vigor so that he will be better able to resist them, and he frequently comes to his medical attendant in search of measures that will accomplish this. Many employ the Cordial of the Extract of Cod Liver Oil Compound (Hagee) for this purpose, owing to its well known power to add strength and resistance to the lining membranes of the respiratory organs, thus enabling them the better to combat microbic attacks. In inflammations of these organs Cord. Ext. Ol. Morrhuæ Comp. (Hagee) has power to be of the utmost service, as it has, also, in their prevention.

THE ORIGIN AND TREATMENT OF FLATFOOT.

Ewald (*Klinisch-therapeutische Wochenschrift*) says that one-third of all city school children examined by him have flatfoot, and one-third more have a more or less broken-down arch. The reasons that so few persons with flatfoot consult the physician are, in the first place, that not all flat feet are painful; and in the second place, on account of the cost of going to the doctor many turn aside to the dealers in orthopedic apparatus, and to the shoemaker. Furthermore, in many cases of flatfoot the physician makes a wrong diagnosis of rheumatism, gout, or even lues or tuberculosis. It must be kept in mind that only a slightly broken arch may give rise to very serious pain and disability.

A flat or broken arch may become painful through long standing, as in the case of apprentices and shopkeepers; from increase in body weight, as from obesity or pregnancy; from injuries, as trauma, to the foot or leg; from resumption of use after long illness.

Studies in the skeleton, at autopsy, and by means of the Roentgen rays show that the pain results from displacements in the relative position of the various foot bones, especially at the calcaneo-astragaloid and the calcaneo-cuboid joints, as a result of which there is set up an inflammation and osteophytes are produced. These conditions may exist a long time without pain, but if a predisposing cause supervenes, pain is engendered.

As regards the treatment, the physician should endeavor to prevent the development of flatfoot by warning parents against allowing their children to start bearing weight on their feet or walking before the tissues become strong enough to stand the strain. Children should go barefooted as much as possible, and when wearing shoes, these should be fashioned to permit the feet to retain the normal shape. There

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should be put into the shoe some form of adequate support for the arch of the foot.

When the physician sends the patient with either a painful or a painless flatfoot to the dealer for a support for the instep, it is not sufficient that the support be placed in the shoe he is wearing, but the shoe with the support incorporated in it should be made to order. It is best to make a plaster cast of the foot in its proper position and have a support constructed from that. If proper methods are not followed the supports will soon bend or break and lose shape, and the patient will become possessed with the idea that nothing can be done to relieve him. In addition to giving proper support to the foot, it is requisite to institute massage, active and passive movements, methodical standing and walking, gymnastic movements of the inflamed joints, hot-air or hot-water baths.—*Charlotte Med. Journal.*

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SALVARSAN IN YAWS.

H. Alston notes the improvement that occurred in five cases of yaws treated by means of injections of salvarsan, the yaws tubercles drying up from the periphery, so that whitish circles appeared to be surrounding them. The author tried an experiment. He had read that in the case of an injected syphilitic mother, and suckling, the baby was cured by suckling the mother, and he was also aware of Ehrlich's view that 606 created an antibody by rapidly destroying spirochetes. He therefore put a cantharides blister on two of the cases being cured by the 606 treatment and injected the serum from the blister into several cases of yaws, the adult dose being 16 c.c. To his astonishment the serum acted as rapidly as 606. In some cases improvement was noticed in sixteen hours after injection. He injected thirteen more cases of yaws with 606, and the same rapid improvement was noticeable—in some cases as early as sixteen hours after. The author applied fly blisters to some of these cases and used the serum for mere experiment. In every case injected with serum there was a rapid improvement. The au-

thor believes that this is the first instance known of a drug producing an antitoxic serum with curative properties, and the effect, in a boy, of injecting 2 drams and 20 minims of a serum that had not been hyper-immunized was very astonishing.—*British Medical Journal*.

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The ulcer should be washed with a solution of boracic acid or any other mild antiseptic and the edges dried. Solutions of bichloride of mercury or carbolic acid are to be avoided, as they kill the new young epithelial cells. The scarlet red ointment is then applied to the edges of the ulcer, either on perforated old linen or with a camel's hair brush. In large ulcers the surrounding skin is liable to become irritated from repeated applications, so it is well to cover

this with some boracic or zinc ointment to within 1 cm. of the edge. In small ulcers the scarlet red ointment is applied to the whole base and edges. This dressing is left on for twenty-four hours, when the area is again washed and a boracic ointment (quarter strength) dressing applied. The scarlet red is used again at the end of another day, and so on alternately. It has been found that the continuous application of the scarlet red ointment is too irritating.—*Canadian Practitioner*.—*Charlotte Med. Journal*.

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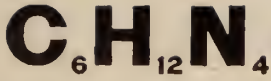
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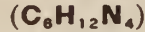
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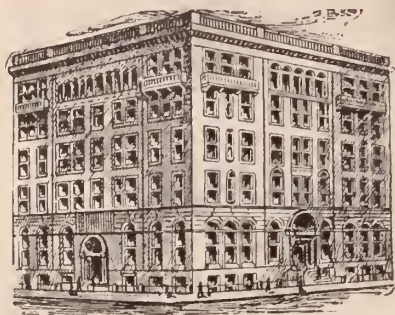
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Each bacterin is indicated for the infection caused by its corresponding bacterium; for instance, a staphylococcal bacterin is used for staphylococcal infection. Accurate diagnosis is therefore necessary.

For the general practitioner the use of stock bacterins is advisable because valuable time is thereby saved.

It is well recognized that mixed infections are usually present in infectious diseases. "Mixed" and "polyvalent" (many different strains) bacterins are therefore becoming deservedly popular. As regards their use, Polak states:

"The mixed vaccines of reliable laboratories have given better results than when a single variety was used. This has been shown repeatedly in the blood picture when an autogenous vaccine of a single strain used in large doses up to 500,000,000 has failed to increase the leucocyte-count or diminish the polynuclear percentage, the mixed vaccines of several strains have promptly produced a marked leucocytosis. Even colon bacillus infections, such as the infection of a pelvic hematocoele by the colon bacillus, have yielded more promptly to mixed vaccines of polyvalent strains than when a single, autogenous germ has been used." (*Journal American Medical Association*, November 25, 1911, p. 1733.)

The prophylactic value of bacterins is proved beyond question in typhoid fever, and preventive medicine suggests immunization against streptococcal, colon, staphylococcal, pneumococcal and tubercular infections by the use of their corresponding bacterins.

The results following the general use in the U. S. Army of typho-bacterin in protective vaccination against typhoid fever are little short of marvelous. "During the past three years 60,000 men completed the three inoculations; but twelve cases of typhoid fever developed during this time and no death occurred." (Phalen and Callison, *Medical Record*, December 9, 1911, p. 1203.)

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NOT TO BE READ BEFORE GOING OUT TO LUNCH.—*The Monthly Bulletin*, Indiana State Board of Health (Aug., 1911), details what the sanitary crank has seen in cafes: a waiter wiping his sweaty forehead with the towel he carried on his arm for wiping dishes, knives, forks and spoons, which had been used a short time before, simply wiped on a not too clean tea-towel without even dipping them into water; tumblers, after having been used at table, simply wiped with a not too clean tea-towel without even dipping them in water; knives, forks and spoons and tumblers after use at table rinsed in greasy yellowish dish water, and then wiped with a tea-towel which was an approach to rubber roofing in color; restaurant kitchen help pass hands through their hair and then handle sliced bread; two mice jump out of a bread box and the sliced bread therein sent to the table as if nothing had happened to it; a waiter picks two flies out of a glass of milk with his fingers, and then places it on a table to be drunk by a child; a cook at a nickel-bound grill in white cap and coat, insert his finger in his mouth to scratch the interior surface and upon removal immediately pick up a nice porterhouse steak and place it upon the broiler; flies proceed direct from a spittoon to a

bowl of berries on the counter, which were waiting there to be served when called for; a cook change his shoes and socks in the kitchen and then, without washing his hands, proceed with the handling of food; a bowl of sugar spilt upon the floor, then picked up with the hands and carried directly to the table; a basket of lettuce on the floor in a restaurant kitchen and a dog belonging to the cook—*Quantum sufficit!*

The proofreader on a small middle western daily was a woman of great precision and extreme propriety. One day a reporter succeeded in getting into type an item about "Willie Brown, the boy who was burned in the West End by a live wire."

On the following day the reporter found on his desk a frigid note asking "Which is the west end of a boy?"

It took only an instant to reply: "The end the son sets on, of course."—*Western Med. Review*.

In case of primary hemorrhage, cut vessels which are not bleeding need not be ligated, provided the patient can be watched. When the vessel can not be tied in the wound, ligation in continuity is permissible.

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in this class of affections, prove the wisdom, therefore, of "treating the patient as well as the disease." The exceptional efficiency of this time-tried tonic in all diseases of the air passages has led to its widespread recognition as one of the general practitioner's most dependable allies in his annual conflict with winter coughs and colds.

Its results moreover, are permanent—not transitory.

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ORIGINAL ARTICLES.

ANTERIOR POLIOMYELITIS.*

BY

M. B. HODSKINS, M. D.

Within the last few years our conception of the disease acute poliomyelitis has undergone some very radical changes. Now we look upon it as an infectious and contagious disease caused by a living organism.

Experimental Production: So small that it can pass through the finest bacterial filter. It is invisible to the microscope. This places poliomyelitis in the class of diseases caused by filterable viruses, some other diseases of this class being yellow fever, and foot and mouth disease.

The virus has been demonstrated in the brain, spinal cord, the mucous membrane of the naso-pharynx and in the acute stage in the blood and cerebrospinal fluid, also in sweepings from sick rooms.

Poliomyelitis can be reproduced in monkeys by inoculation by the following routes, namely, intracerebral, subdural, intraneural and perineural, intraperitoneal, subcutaneous, by the circulation and by implantation in the anterior chamber of the eye; it has also been reproduced by introducing an emulsion of an affected cord into the stomach by the means of a catheter, and by introducing the virus into the intestines previously paralyzed by opium, also by rubbing the nasal mucous membrane after scarification with a virulent emulsion of the virus, and by the same process without scarification, also by the implantation of infected tissue in the trachea.

This fact, that the disease can be caused by the virus entering both by the digestive and respiratory tracts must be remembered, when we come to discuss how the virus gains entrance into the human body. Inoculations of the virus into domestic animals, such as horses, dogs, sheep and goats, has uniformly given negative results.

The stage of incubation in monkeys is generally given at from six to upwards of thirty days. The long incubation period in some of the

monkeys would seem to suggest that some of the late fall and winter cases of the disease may have acquired their infection when the disease was prevalent in August and September.

The virulence of the virus is not lowered by freezing, by suspension in glycerine or by drying for seven days. The virus is not always impaired by dilution, a solution of one to one thousand working as quickly and effectually as the full strength.

It is generally accepted that one attack of the disease confers immunity to future attacks, this is true in the human and experiment has proved it true in monkeys.

Monkeys have also been actively immunized by the repeated injections of small amounts of the virus and afterwards full doses of the virus were given and had no effect on the protected animals.

Passive serum protection has been obtained by mixing with an active dose of the virus an equal part of the blood serum of a recovered monkey. Attempts to secure a neutralizing serum from horses who have had repeated injections of the virus have not proved successful.

Even if we had an effective serum at the present time, it is evident that in order to have it used with any success it would have to be injected before the paralysis comes on and in the present state of our knowledge of the disease this is scarcely possible.

At present it is generally believed that poliomyelitis is becoming more common and more widespread. This is undoubtedly true, but one must bear in mind that there is a possibility that some of the apparent increase is because the disease is now more generally recognized by physicians.

The Massachusetts State Board of Health after carefully going over the literature formulated the following statements.

1. The outbreaks of infantile paralysis have very greatly increased in several parts of the world in the last five years, in a measure not to be explained in any way by the increased interest in the disease.

2. That it is more prevalent in cold than in warm countries.

*Read at the annual meeting of the Vermont State Medical Society.

3. That from the northern part of the United States have been reported more cases than from any part of the world.

It is now accepted that the disease is distinctly transmissible, direct transmission is tolerably frequent and transmission by a healthy carrier is more than probable. The infection occasionally appears to remain in a house where the disease has previously occurred.

On the other hand the disease is only about a third as contagious as scarlet fever.

Pathology: The cord is congested and on section shows congestion and often softening in the domain of the anterior spinal artery.

In the cord the infection is located in the perivascular lymph channels of the anterior portions, especially invading the gray matter, but extending to the white matter and pia and occasionally to the posterior horns, the brain stem and basal ganglia may also be involved. In the cord the medulla, cervical and lumbar enlargements are particularly affected. Microscopically the lesion consists of collections of cells in the perivascular and pial lymph channels and tissue spaces of the anterior horns. Among these cells the polymorphonuclear leucocytes appear early and are few in number, they are soon displaced by endothelial cells and lymphocytes. Edema of interstitial tissue and degeneration and destruction of ganglion cells are present, the small vessel walls are degenerated and the capillary branches are often ruptured giving rise to minute hemorrhages, the nerve fibres from the anterior roots are degenerated early.

This description of course applies only to the acute stage. In the later stages we have the disappearance of nerve cells with the familiar replacement gliosis.

Symptoms: The symptoms of the disease easily fall under two heads, first the prodromal symptoms and second the symptoms of the fully developed disease.

Prodromal Symptoms:

- I. Irritability.
- II. Restlessness.
- III. Pain in spine or extremities.
- IV. Dulness.
- V. Sweating.

Acute Symptoms:

1. Fever 100-106. Duration of fever, two to seven days.
2. Vomiting 25 percent in New York cases.

3. Restlessness.
4. Rigidity of neck.
5. Headache (frontal).
6. Convulsions.
7. Photophobia.
8. Dysphagia.
9. Sluggish pupils.
10. General pain early in 58 percent.
11. Absence of deep reflexes.
12. Cold extremities (vasomotor changes.)

Types of cases:

1. Spinal poliomyelitis from sudden onset followed by paralysis.
2. Ascending from (Landy's paralysis) involvement of respiratory centres. Most fatal cases belong to this type.
3. Bulbar or pontine form.
4. Encephalitic or cerebral form. May exist alone or with spinal involvement.
5. The ataxic form. Much like Friedreich's ataxia. Affection of the cerebellum or cord tracts.
6. Polyneuritic form. Much pain and tenderness along the nerves.
7. Abortive form.
 1. General infection.
 2. Symptoms of meningeal irritation.
 3. Cases of much pain like influenza.
 4. Cases with marked digestive disturbances.

Diagnosis:

The diagnosis of this disease is rarely made before the onset of the paralysis nor is the possibility of the presence of the disease remembered as often as would seem advisable. The diagnosis in the early stages must be made by exclusion, for at present we have no positive data by which to go, although some recent experiments would seem to indicate that in the near future some help may be expected from an examination of the blood and the cerebrospinal fluid.

The examination of the spinal fluid may however be of service for it may reveal the presence of tuberculosis or cerebrospinal meningitis the diagnosis of which from poliomyelitis is not always so easy.

Certain important points should be kept in mind. It occurs most of all in late summer. It affects most often children in the first dentition. The onset is usually with a febrile attack, often with pain, sweating and drowsiness. The throat and intestinal tract are often involved and men-

ingual symptoms are often very suspicious. Tenderness of the spine, body or limbs should awaken suspicion at once.

If we bear these facts in mind, many times an early diagnosis can be made. There is no way that we can diagnose the abortive cases early, nor can the diagnosis of any case be absolutely sure in the absence of paralysis.

When the motor paralysis is present, the sudden onset, the absence of reflexes, the muscular flaccidity, surface coldness, absence of sensory paralysis with or without a short period of pain and followed by muscular atrophy, forms a characteristic group of symptoms and makes the diagnosis an easy one.

Prognosis:

It is extremely difficult to examine a case in the early stages of its development and then to estimate the outcome of the attack. Great improvement may be expected in all but the fatal cases. The recovery is very gradual and under proper treatment may be expected to continue for nearly a year.

The exact determination of the extent of the paralysis by examining the electric reaction is difficult in young children, and for this reason is often impractical. The surface temperature offers a ready means of determining the extent of the region involved.

Treatment:

The treatment can be conveniently divided into three stages.

1. The early stage, that of acute onset and fever.
2. The subacute stage.
3. The stage of established paralysis and convalescence.

The first stage extends from the first appearance of symptoms until the entire subsidence of fever and acute pain, the duration of this stage necessarily varies; the indications for this stage are 1. Rest. 2. Drugs. (a) antipyretics, (b) sedatives and analgesics, (c) antiseptics, (d) nerve stimulants, (e) external applications.

The second stage may be considered as extending from the end of the first to the time of disappearance of all sensitiveness and nerve tenderness. This stage varies much in duration, but usually does not extend much over three or four weeks although it is occasionally prolonged for five or six weeks.

In this stage the fever and early pain have entirely subsided, but there is frequently left sensitiveness along the nerve trunks, pain on motion of the limbs and sometimes pain in the back on attempted motion. We also sometimes find contraction of the limbs, especially of the hips and knees due to the extreme sensitiveness which does not allow the limbs to be brought into their normal positions. Where this condition is present the patient should be moved with great care on pillows or on bed frames.

It is important to prevent the overstretching of paralyzed muscles in this stage, either from pressure of bed clothes, position in bed, or from force of gravity or the unantagonized pull of the sound muscles. Deformities may be developed even in this stage and although not necessarily permanent add much to the discomfort in the later correction. These are to be guarded against and prevented unless the appropriate measures give actual pain.

Splints or a weight pull are rarely necessary in this stage, but the position can be arranged by pillows or sand bags, cradles for the bed clothes to prevent the pull of the clothes on the limbs. The application of heat, either moist or dry, will be found to relieve the pain markedly. Gentle massage is often of great service. Some good tonic is all the medical treatment that is necessary at this time.

The third stage extends from the end of the second until the time that all potential power has been regained or until the deformities require no further attention. Two special demands are important throughout this stage.

1. The prevention of deformity.
2. The regaining of nerve and muscle power.

The deformities that occur during the course of recovery are those of the limbs and those of the spine. The discussion of the appliances to prevent these belong to the orthopedic surgeon to whom these cases should be sent to be fitted with the proper appliances.

The regaining of nerve and muscle power is more in our domain.

It is unfortunately a prevalent idea that all the power that is to be regained will be regained in the first few months of convalescence and after that we should not burden ourselves with especial efforts directed towards the developing of special nerves and muscles.

This idea is very unfortunate, for clinical facts prove the contrary. It is possible to gain a return of muscle power after a long period following the onset of the disease, even when during the interval there has been no evidence of actual local return of power.

It is very essential, therefore that treatment directed to this end be carried out, not only in a most thorough manner, but also over an extended period.

For stimulation of nerves and muscles, the means to be employed are:

1. Electricity.
2. Physical therapy.

Prophylaxis:

1. Quarantine.
2. Length of time.
3. Close school.
4. Close Sunday schools.
5. Attention to nose and throat.
6. Vaccination.

DISCUSSION.

Dr. Caverly of Rutland.—In 1894 to 1900 there were only cases of this disease in the state here and there. They were the usual sporadic cases. In 1910 there were a good many cases, and the State Board of Health worked in conjunction with boards in neighboring states and pretty generally through the North so that we have a fairly accurate idea of the prevalence of this disease.

I have had hung here a map of the state which gives at a glance an idea of the distribution in the state of this disease last year. I was able to get the history very complete of 69 cases. I know that there were more, in fact I have had three more given to me since these figures were compiled, and I have no doubt there were a good many more than that. Reference has been made in the papers to the abortive cases. There were such, but impossible of recognition in the present state of our knowledge. But in the presence of an outbreak of this disease it seems to me it is fair to look with suspicion on cases of "grip," and I have no doubt there were in conjunction with these cases that were reported, and that were frankly paralytic, cases that were not recognized.

An interesting fact to me in regard to this map is the relationship which it shows to outbreaks of this disease both north and south of us. In the city of Springfield and neighborhood there were upwards of 200 cases last year. The disease began in May and culminated in July, and then waned through the fall. The disease in Vermont began in June, culminated in September. You are all aware of the direct railroad connection between Springfield, Mass., and the Connecticut Valley in Vermont. The geography of the country is favorable to direct communication between Springfield and our state and you will notice by looking at that map that the cases commenced, first at Brattleboro, then at Windsor and Montpelier, and finally in the northern part of the state in Orleans County there were a large number. Just over the border from Newport at a little sum-

mer resort there is a summer colony of about 2,000 people, 500 of whom are permanent residents. They had an outbreak coincident with this outbreak in Vermont, at this summer resort. A good deal of effort was made to find out about it. I investigated this with Dr. Adams to discover some connection between our cases in Vermont and those north and south of us, and it was absolutely impossible, as far as we could gather, to trace any positive direct connection. The earliest case in Brattleboro group of cases was at Brookline, which is some miles from Brattleboro, in a child that had not been away from home for more than a month, and the same was true in the Orleans County group. We don't know enough about the vehicle in which this virus is carried to say very much about how communicable or transmissible it is. Of course I don't know that somebody hadn't been in the town of Brookline from Springfield. I did know of one case in Brattleboro which had been in Springfield within two weeks before the attack, and it was a fatal case; and the same was true of a case in Orleans County that had been to the fair at Sherbrooke, where they were having cases, within two weeks, and that was a fatal case, but both were late in the outbreak, both occurring in September. It has been a matter of common observation in Massachusetts, Pennsylvania and Minnesota, where it has been most prevalent, that the disease does follow the avenues of travel, and that is certainly the case as far as our outbreak in this state went last year. Of the 69 cases, 51 were in the Connecticut Valley and 18 on this side of the mountains, and the bulk of those on the west side of the mountains was in or about Burlington and Rutland. There were during the outbreak last year some very isolated cases. In the town of Bennington there was one, in the town of Hubbardton there was one, and another in Addison and another in Franklin County. Those were isolated as far as railroad or other communication was concerned, and no communication could be discovered between those cases and any towns where they were having the disease—any sufficient communication to explain it. They hadn't been to any of these towns within two weeks. There were two instances in this outbreak of last year of apparent connection with a paralytic disease in the lower animals. One of these was in Essex that Dr. Ferrin reported, in which there were two small boys whose father bought them some pigs which came from a flock of pigs in which there was some paralytic disease at the time. The two pigs developed paralysis of the hind legs, and presently these boys were taken with this disease. It may be an incident of cause and effect. These facts were developed altogether too late to make any pathological examination of the pigs. The two boys are still paralyzed.

There was another instance in the town of Pawlet in which the farmer, who was an intelligent and observing man, had 15 calves in a pasture and whose attention was called to one of the calves that was sick. The next day it was not able to get up and they found it was paralyzed behind. This farmer was strong on pleuro-pneumonia. In drawing away the carcass of the dead calf some frothy mucus exuded from its nose. The other calves were smelling around this one and the nose of one of these came in contact with this mucus. The farmer told his man to mark this calf for identification, and in a few days this calf developed disease and paralysis and died, and five calves of that herd died within two or three weeks, all with the same paralytic symptoms. The farmer made an "unprofessional ex-

amination" of the second one to die, but examined only the lungs, and he described those to me as well almost as a veterinary, but there seemed to be nothing pathologic in his examination. The sequel of this was that in less than two weeks a young man, living only a few rods from where these calves were in pasture, developed poliomyelitis and is still paralyzed. These are two cases that were interesting.

I might say in regard to the prevalence of the disease this year, it was pretty fully prophesied that this would be an off year. They are not having nearly as many cases in Massachusetts, where they ran over 800 last year. This is apparently an off year. There are 20 cases at the present time in the state, and there have been three deaths. One of the cases is in the town of Hartford and the other 19 are on the west side of the mountains, 15 in Rutland County and 11 in one town. Two were taken sick in Manchester, one died there, and the other is now at home in Orwell. Two cases have died in Rutland within the last fortnight—respiratory paralysis, and the one that died in Manchester died in the same way.

Dr. Hodskins in his paper has mentioned the difficulty of diagnosis, and the theories prevalent in regard to the treatment of poliomyelitis. The first important thing is to secure reports. I find that there are a good many doctors in the state at the present time, and, I am sorry to say, some health officers, who don't know that poliomyelitis is reportable, and I would like to emphasize the necessity of having this disease in mind during the warm weather and of making reports of cases to the health officer and reports of your suspicions. You are aware that the statutes require you to report not only known cases, but also suspicious cases. There is no other way in which the health officials can keep tab on the disease. I think we will be able to furnish ultimately some valuable original information and reports on the epidemiology and perhaps the pathology of this disease.

Dr. F. W. Sears of Burlington.—I am not going to take up your time discussing this paper. I simply want to congratulate the Society and Dr. Hodskins that it is the clearest exposition of poliomyelitis I have ever heard. I can second his treatment right through, but in regard to his treatment of electricity he said place the negative pole on the muscle and the positive pole elsewhere. When you have the reaction I think it is better to place the positive pole on the muscle and your negative pole elsewhere.

Question.—How early did any of the deaths occur after the permanent symptoms?

Dr. Caverly.—In two cases there was a young man died in Rutland Sunday afternoon, and one in Manchester the same afternoon, one eighteen and the other nineteen, and they had been sick about thirty-six hours. They were around Friday. The one in Rutland first had a doctor Friday evening and died at three o'clock Sunday afternoon.

Dr. C. F. Ball of Rutland.—I have been very much interested in the paper and I want to take just a few moments in rehearsing a little of the detail in regard to the cases in Rutland and what I have found relative to the two cases in Manchester. We have had three cases of poliomyelitis reported in Rutland during this past summer, the first I have been unable to connect up in any way with any source of infection. The second case was that of a boy of nine years who lived in one of the poor parts of our city and I don't know anything now as to where he got it. He contracted the disease about the 25th of Sep-

tember and ran a course of three or four days and died, and I can't say whether it was the 28th or 29th of September. Our second case of acute poliomyelitis was ill about two days and then died. There is a positive connection between these two cases, where the domestic in the house of the second fatal case had lived upstairs in the house of the first fatal case. This woman had been downstairs in the house of the first case, where the boy of nine years of age died. This case will help to present the carrying, the infection through the boy of nineteen years who died nine days after, and is open for question. I couldn't get any definite connection between the man and woman—the third party—except that her folks lived in the house, upstairs, where this boy lived who died, and he was living downstairs.

The case in Manchester was called to my attention by my neighbor asking whether it would not be advisable to go down. This case died in the morning. In looking up the history I find that the party at Orwell was taken sick about the 16th of September and worked at the post-office in Manchester. He had worked there all summer and was feeling ill first about the 16th, but continued his work until the 19th, when he had to give it up, and the 20th he returned home to Orwell. According to the aunt with whom he lived in Manchester, her nephew took this place in the post-office, and the people in the office were accustomed to use pencils and books in common. If you will look your dates over you will find that with Meacham dying October 9, it gives just two or three days' incubation. Whether there is anything in the use of lead pencils and books in common, it is an open question.

Relative to monkeys, it seems as if transmission is possible, that by scraping up the dust of the road and passing it through a small cylinder and injecting it into the spinal cord will produce acute poliomyelitis. Of four or five monkeys treated, monkey number four was treated with dust and allowed to get well, and monkey number five was treated with dust and had anterior poliomyelitis with the characteristic development, and the serum from this cord being injected into monkey number four it had another attack, so that one attack does not produce immunity.

Dr. Bellerose having to go out, asked me to call attention in the treatment to this little return nerve that comes from the next nerve (indicating on chart), that goes back to the meninges with the possibility of producing reaction by counter irritants on the skin, producing hyperemia of the skin and about the spinal cord.

Dr. C. H. Haskell of Bridgeport, Conn.—I want to say a word in regard to the diagnosis and treatment of infantile paralysis. I believe not enough stress has been laid on the fluid. The diagnosis can be made early by the examination of the cerebro fluid—the spinal puncture is a very simple procedure—and examined in the same way as you would make an examination of the blood. The acid test is a very simple one, and the reaction of the thalene solution is a very simple one, and all within the reach of any practitioner. In regard to treatment I think not enough stress has been laid on urotropin. In reference to the electrical treatment for young children the cerosorgum current is frequently used, and if you have a plate that has the galvanizer you can get the cerosorgum attached.

Dr. H. D. Holton of Brattleboro.—I want to emphasize one or two things which Dr. Caverly spoke of, and that is in regard to reporting cases. There is

no reason why you should not do it. Be sure and report all your cases. There are a good many good physicians in the state who have not reported. Some say that they didn't know that it was a reportable disease. I am very sorry for that. It was published in the bulletin that it was a reportable disease, and evidently you didn't read your bulletin, for which I am sorry, because we spend a great deal of time on them.

Dr. G. F. B. Willard of Vergennes.—I am one of those who probably haven't reported a case, and I don't know whether it is through my negligence or something else, but I was called to see a case probably a month ago. The child didn't seem to be very sick, not much pain, and about three weeks after that—after the period of quarantine was over—they telephoned me that the child was not getting along very well and wished I would go and see it. I went and found the child walking around, and I examined it especially with the idea that it might have poliomyelitis, but I wasn't keen enough to recognize it and didn't recognize it as a possible case until three weeks later. I should like to ask the State Board of Health what was my duty in that case?

Dr. H. D. Holton of Brattleboro.—The sinner can repent at a very late day.

Dr. M. B. Hodskins of Palmer, Mass.—I would like to bring your attention to the paralysis in animals. So many people have reported paralysis similar to anterior poliomyelitis in domestic animals, and not one case has ever been established as being due to this information. If any one here ever sees an animal paralyzed I hope you will take steps to get the spinal cord and brain and not let those cases slip by.

I certainly do approve of the use of urotropia early in the disease, and as for lumbar puncture the diagnosis can be made before the paralysis comes on, but you can't use the puncture on very sick babies, and inasmuch as the first symptoms are digestive disorders I don't think that will ever become a routine measure because you can't puncture very sick babies.

Dr. C. S. Caverly of Rutland.—During the outbreak that I spoke of in Rutland County seventeen years ago there were a good many paralyzed animals and two hens that I was able to secure were sent to Dr. Dana, and he turned them over to Dr. Durham, and he reported later that there was an anterior poliomyelitis in those cases. He described it as a characteristic of the disease known at that time. Dr. Townsend made a post-mortem examination on a horse and he felt sure that he discovered a case of anterior poliomyelitis.

On motion of Dr. M. R. Crain of Rutland, seconded by Dr. C. H. Beecher of Burlington, a vote of thanks was tendered by the Society to Dr. Hodskins and he was voted an honorary member of the Vermont State Medical Society.

CARE OF THE NEW BORN.

When urination is delayed immediately following the birth, says a writer in the *Nurses' Journal of the Pacific Coast*, try a warm sitz bath for the baby and give plenty of water, not too cold, to drink.

"INJURIES OF THE ABDOMEN,"*

BY

E. J. MELVILLE, M. D.,
St. Albans.

Unless he is injured internally, he will recover, has been the doctor's shield long enough. Why should he not recover, even if injured internally?

Because we have waited until symptoms of peritonitis arose before we assisted nature to unload the poisons poured out from gut or stomach and found we were too late.

We have been treating our patients on what is known as "the expectant plan" and usually got what we expected.

Operations at this time are usually followed by death, and are looked upon by the laity and by some physicians as a "dernier resort."

I have chosen injuries of the abdomen, for my subject not because I can speak authoritatively upon it, but because I wish to derive information from the controversy which will follow, to compare my experience with that of others and if possible to get at the cause of the appalling mortality that follows this class of injuries. The abdomen is well named.

It gets its derivation from words that mean to conceal well, and it has tried in the past at least to live up to its nomenclature. While I do not wish to belittle the advantages of written or pictorial description of conditions within the abdominal cavity, I do think that we should remember that organs in the living look far different from those in the picture or those in the cadaver.

When an internal injury takes place, the policeman of the belly, commonly called the omentum, has a way of plugging up the hole, and dragging other organs around the damaged spot, walling it off from the general peritoneal cavity.

Therefore if we are too sure just what we will find beneath a certain section of the abdomen, we may be disappointed.

The varieties of injuries of this type are many and varied. The abdomen may be injured from above, from below, from in front, from behind and from the sides. That is from the right side, the left side and from the inside.

*Read at the annual meeting of the Vermont State Medical Society.

We must consider stab, gunshot, crushing and impaling wounds. We must remember that some of our worst injuries show no external mark. In injuries elsewhere we should always make a careful physical examination of the abdomen, as this part of the body being poorly supplied with sensory nerves, many extensive injuries are followed by little or no pain, until symptoms of peritonitis develop.

Occasionally we get a rupture of a solid or a hollow organ, by "contra coup," the patient falling from a height and striking on his feet. The symptoms we have to be on the lookout for are hemorrhage and perforation.

The first follows injury of a solid organ or the tearing of mesenteric attachments, while the second is especially dangerous as it is not recognized until peritonitis develops. The symptoms of internal hemorrhage are seldom mistaken.

Air-hunger, profuse sweating, sub-normal temperature with a rapid weak pulse are the classical symptoms, although according to Bottomley we frequently get a slow pulse with an abdomen full of blood. Make your diagnosis early, in the first hour or two and then stick to it. If we wait until we are certain we have a surgical case we generally have a case for the undertaker.

If we think there is no perforation and peritonitis develops, we have made a mistake as there is no such disease as idiopathic peritonitis. We have a leak somewhere.

As has been said elsewhere, pain is not a constant symptom. In cases of rupture of the intestine we get pain not at the seat of the injury, but at the pylorus.

This organ has, figuratively speaking, shut the gate, to keep the stomach contents from the seat of injury. Again the different movable internal organs crowd around the damaged spot in their endeavor to wall off the poisonous material from the general peritoneal cavity and consequently drag on their mesenteries, causing pain, not at the seat of injury, but at the attachment of the mesenteries to spine or parietes. Tenderness on deep pressure is fairly constant and may be elicited early. A board-like feeling of the underlying muscles is one of the best indications that they are endeavoring to protect some broken part within. Nausea and vomiting are usually present but have no diagnostic value. We should decide at once whether a given case is a medical or surgical one.

The patient and his friends will pardon us, if at the outset we admit we can not be certain whether we have a perforation or not, but if we wait until the eleventh hour and when the patient is in a moribund condition send for the surgeon, we deserve to be censured. I heard a world famous abdominal surgeon say a few weeks ago, during a surgical clinic: "I used to flatter myself that I was a good diagnostician in belly conditions, but since I have been cutting down on my diagnosis I am not so confident." Therefore in cases where there is any chance of a perforation let us frankly say that an exploratory incision is indicated. Let us explain to the patient and his friends, that an exploration does no harm, has no mortality and then if we find any broken or bleeding organ it may be repaired.

The surgery of injuries of this kind has a parallel in the surgery of organic diseases of the stomach. If we wait until we are sure the disease is cancer, we have waited too long. If operation is refused and in the end the patient dies of peritonitis, we are not to blame.

From time immemorial up to the time of the aseptic era the abdomen has had to look after itself. Consequently around the caecum and gall-bladder many large extravasations are walled off at once, the hole plugged by the omentum and under bad and indifferent treatment and oftentimes under no treatment at all have come out all right, either by incision and drainage or by spontaneous evacuation into some hollow viscus or through the abdominal parietes. However as nature is, at best, but a clumsy surgeon, this is anything but the ideal treatment.

If we can be reasonably certain that we have no perforation and no active hemorrhage, a few days' rest in bed, an ice-bag to the abdomen, and starvation will result in a cure.

If any exploratory operation is decided upon, better get your operating room ready, while your assistants are being summoned. As it is impossible to tell beforehand the extent of the intra-abdominal injury, we should be ready for some radical procedures.

Thus rupture of the ureter may require a nephrectomy, a thrombus or rupture of a mesenteric vessel may require a resection of an intestine with end to end or lateral anastomosis while tearing of the spleen may need a splenectomy. Therefore be ready for the unexpected and unless we feel competent to do any of these things we should call upon someone whom we

believe to be so. However in the large percentage of the cases the tying of a bleeding vessel or the repair of a torn intestine will be the only operative procedures necessary.

Do not try to move your patient to a hospital unless one is near at hand. Remember that towels, sheets and instruments prepared in a clean washboiler are just as sterile as if prepared in the best sterilizer. We must admit while not wishing to belittle the great advantages of a hospital that these advantages are more than offset by the injury done to the patient with a hemorrhage or a perforation during transportation. While waiting for your assistants do not do your patient any harm. Give no enemas or you may be surprised later to find them in the peritoneal cavity.

While your patient is being put to sleep all the preparation necessary may be done. Surround the abdomen with sterile sheets, and dry shave the field and contiguous parts, and clean it well with gasolin poured on pledgets of gauze held in sterile forceps. This is continued for five minutes, and is followed by one or two coats of tincture of iodine. This is not an original preparation. It is the only preparation in use at the present time in the Ochsner and the Mayo clinics. When picking out your assistants get a good etherizer. Do not leave this important part of the work to a man who is not a skilled anesthetist.

To realize the importance of good etherizing it is only necessary to go from a clinic where the internes give the ether to one where this important work is done by assistants who are paid well and are kept on year after year.

In the first tongue pulling, blue faces, roaring respirations and bowels crowding up into the wound seems to be the order of the day, while in the other clinic the patient climbs onto the table and goes quietly to sleep in from three to ten minutes and is able to swear at the operator, when the last stitches are being taken. Make a good roomy incision. It is no use doing an exploratory operation, unless you explore. Examine the organs you think are all right first. You will then not have to disturb the repaired one later. Do not be afraid of the peritoneal cavity. It can take care of an infection better than any other part of the body. It has become so accustomed to taking care of itself, that it can take care of a little poor technique. Examine all the organs systematically, the uninjured ones

first for reasons before mentioned. Examine for tears from the stomach down, you will then not have to handle the same gut twice, as is the case when a small loop of gut is pulled out of a small hole in the abdomen and pushed back in again. Strip the bowel through your fingers in your examination, but remember that much handling means much congestion and much after pain. Of course every case is a law unto itself and no rules of procedure can be laid down. However we should remember that to stop leaking whether from blood vessel or intestine is the principal thing. Nature will do the rest. The favorite method at present seems to be purse string sutures, invagination of the tear and lembertizing, and bringing down the omentum and stitching it to the line of suture to prevent leakage.

The suture material for this purpose used at many of the clinics is iron-dyed Irish linen in closed cases and iodized or tannicized catgut in drainage cases. It is a safe plan to irrigate the whole peritoneal cavity with plenty of a normal salt solution. It attenuates the bacteria and lessens the chances of septic peritonitis. Leaving a quart in does no harm. Get your patient off the table into a warm bed, in the Fowler's position, as soon as possible. I believe in draining those cases for a few days, but every case will have to be judged on its own merits.

The after treatment need be no different from any abdominal case. Give no cathartics, wash the stomach when nauseated, pass the rectal tube for flatus and avoid opiates when possible.

If we are not called on the case until signs of peritonitis have developed, that is from 5 to 20 hours after the injury, physical and physiological rest of the prima via is indicated. This is best accomplished by starvation, lavage, rectal alimentation and opiates sufficient to stop peristaltic action. In other words, as the older physicians used to say, "putting the bowels in splints." This was the routine treatment for all inflammations of the bowels, including appendicitis 40 and even 20 years ago. The patient should be placed in the Fowler's position, the stomach washed at regular intervals, Murphy's method of proctoclysis with normal salt solution or beef juice given and where necessary rectal alimentation. An icebag to the abdomen is popular with some surgeons.

The whole gist of this treatment is to get the pus and other extraneous material to gravitate down low into the abdomen, to stop peristalsis,

and to allow a limiting membrane to form around the abscess cavity, then to open the abscess by a simple incision in from 4 to 8 days and drain. This is called the Ochsner treatment, and is used by him in all his pus cases whether appendiceal or otherwise.

Although it is not customary to report the cases that have died, still it may be pardonable to mention in passing that in the past 20 years I have had about 10 severe injuries of the abdomen, that for one reason or another were treated on "the expectant plan." One little girl swallowed an open safety pin that resisted all medical attempts at removal. She did very well, took food and drink freely for a period of three months, when suddenly one morning she vomited a large quantity of blood and expired in her mother's arms.

One case of injured abdomen from the wheel of a heavily loaded wagon, one injured in a runaway accident, one case of a painter who fell from a scaffold and whose only subjective symptoms were confined to the spine; one case of intussusception from jumping from the beam of a barn onto the hard floor; another case of probable rupture of the liver from a kick from a horse; another that I saw with the late Dr. Rublee of Morrisville was probably a rupture of some mesenteric vessel caused by a young man throwing a heavy harness onto a large horse. These types are no doubt familiar to you all and were treated symptomatically and the result may be described in these familiar words:

"After Life's fitful fever they sleep well."

To conclude this paper I beg to report 2 cases at length. I report these cases as they illustrate very well some of the points which I have endeavored to set forth and for the reason that my number of operations for this type of injury has been very limited indeed.

CASE 1. As a result of sudden wealth, combined with poor whiskey, Carrol S———, aged 24, attempted suicide by shooting himself with a .38 cal. revolver on March 4, 1905. The first shot struck the 6th rib, on left side in mid-axillary, and after skeeing around on the rib, found an exit near the spine. The second bullet entered the body at a point midway between the left iliac spine and the ensiform cartilage. Saw patient half hour after shooting. Able to walk about, no pain, no shock and no vomiting. Dressed external wounds and advised operation. Removed patient

to hospital. Opened abdomen. Found bullet had clipped left pole of stomach at beginning of greater curvature, and had also made 4 openings in small intestine. Peritoneal cavity filled with fecal matter and stomach contents. Little hemorrhage. Used purse string suture invagination and lembertized over this, doing all with No. 2 catgut iodized. No search made for bullet. Washed out peritoneal cavity with plenty of saline, mopped out dry and left in small gauze drain in lower angle of wound for 3 days. Always use catgut sutures in drainage cases. Patient in bed 3 hours after shooting. Recovery uneventful. Discharged on nineteenth day. Bullet still remains dormant. This case teaches:

First: The unreliability of absence of symptoms.

Second: The ease with which the peritoneum takes care of infective material.

Third: The value of an early operation.

Fourth: The folly of making prolonged searches for the bullet.

CASE 2. Charles S———, April 21, 1911, was struck over cecum with the end of a baseball bat and suffered no more than temporary inconvenience, being able to finish the game. No external bruise or mark of injury. Was called April 23, about 40 hours after injury. Found tenseness of muscles over right iliac fossa, tenderness on deep pressure and vomiting. Temperature, pulse and respirations normal. Bowels constipated and no pain. Diagnosed perforation of appendix or cecum. Placed patient in Fowler's position, gave rectal feeding and placed ice-bag over cecum. Codein for restlessness hypodermically. Next day had some pain and mass could be made out by percussion and palpation and on day following by inspection. Temperature 100 to 101 F. Respiration 22. Pulse 100 to 120. Operated 8th day following injury. Evacuated pint of pus and 2 fecal concretions. Put in rubber drain and kept patient in Fowler's position. Recovered slowly. In hospital 3 weeks and the discharge of pus continued about 4 weeks after his return to his home. As there was no history of previous trouble with appendix it was not disturbed and besides it formed part of the wall of the pus sac. Undetermined whether the concretions came from cecum or not, as parts were more or less matted together and disturbing them might be bad surgery. There was no fecal fistula following as proven by the administering of methylene blue internally.

No pain or indigestion since recovery. This case illustrates very well:

First: The mildness of the preliminary injury and the absence of symptoms until localized peritonitis developed.

Second: That it is good judgment merely to evacuate the pus and extraneous material and not to remove an appendix which has heretofore given no trouble.

Third: That it is well to be patient and wait until the limiting membrane is firm, as to operate before strong agglutination of protective structures has taken place is to invite general peritonitis.

Fourth: Imitate nature by just making an opening for the pus to escape and keep it open with a drain.

Fifth: Not to be too certain that no internal injury has been done when no external marks are present.

DISCUSSION.

Dr. E. J. Melville of St. Albans.—I have just this to say, that the controversy which will follow may be of information to us, and to compare my experience with that of others and if possible get at the cause of the mortality that follows this class of cases. We must remember that the abdomen can be injured from the front or the sides, and that some of the worst wounds show no external mark (paper read.) Bottomly of Boston says that we may have a slow pulse with an abdomen full of blood. If we make a diagnosis that there is no perforation or hemorrhage, then in five or six days we see the patient is passing away, and we blame the surgeon. I don't believe that it is fair for us to try and unload the responsibility on some of our surgeons and in that way try to blind the patient and the patient's friends. The pylorus is a gut and has closed by contraction in its endeavor to keep the contents of the stomach away from the seat of the injury. Nausea is usually present, but I don't believe it is of any particular value. We should decide at once whether we have a medical or surgical case. I heard a world-famous abdominal surgeon say, "I used to be a great diagnostician in belly conditions, but since I have been cutting down on my chances I am not so confident." Therefore, I believe that it is just as well for us to admit that we are not confident. Let us tell the patient that we cannot be sure whether there is a perforation or not. If we have no hemorrhage or perforation we have done no harm, but if we do find those conditions we have done a great deal of good. If operation is refused when we advise, or exploratory incision is refused, then the burden is taken from our shoulders and they can't blame us if the patient dies of peritonitis.

When you are picking out your assistants be sure you get a good etherizer. There are very few good etherizers in the state. We should not leave this important work to some old family physician or some young fellow just out of college. If there is not a skilled etherizer in your part of the country I would prefer to trust it to someone who is not a

doctor at all than to someone who is interested in the operation and neglects his work to see how the operation is being done. In a clinic where the etherizers are trained for the purpose and etherize day after day and make a specialty of this work, the patient simply steps on to the table and goes to sleep and stays asleep while the surgeon is working, and wakes up and swears at him while he is being put in elastics.

If we are making an exploratory incision make a good big incision. This one-inch incision won't do; if you want, make it ten inches. It will heal just as easily as the one-inch incision, and I believe it is foolish for a man to make an exploration of the abdomen unless he explores. We should explore every organ in the abdomen in case of an injury. We should pay particular attention to the ones we think are not hurt first, so that we can avoid passing around those organs after we make our incisions, and examine every one systematically and thoroughly. If you have left one opening it is just as dangerous as if you have done nothing at all. I remember Dr. Hutchinson's treatment was putting the bowels in splints in case of inflammation of the bowels. I find that is the very treatment that is followed out by such men as Archer at the present day. He puts the patient in the Fowler position and gives him Murphy's proctolitis and opiates enough to keep him quiet. A great many of our surgeons believe in the ice-bag to the abdomen.

Dr. Lyman Allen of Burlington.—The kernel of the discussion is in the diagnosis. No man can make a positive diagnosis of the extent of intra-abdominal injury following trauma. The mortality of such cases unoperated upon is 100%. The mortality of exploratory operations is low. Yet, with all that, we cannot advise operation upon every patient that has received an injury to the belly wall. There must be some ground for operation, and right here the personal element of the first man who sees the injured patient comes into play. There is no doubt that every patient that has been struck in the abdomen with force enough to make it a knock-out blow ought to be operated upon at once. When it comes to the case cited, where a boy was struck in the abdomen and finished the game, it would be a brave man that would advise immediate operation. Undoubtedly there are not enough early operations. I think the thing to take away with us is the idea that our abdominal cases that have had sufficient abdominal injury to cause unconsciousness or severe shock, should have an exploratory operation. Certainly those other cases of apparently less severe abdominal injuries that give any symptoms should be operated upon. Some of these cases give the symptoms of pain and vomiting and rigidity. Some of them give no symptoms at all. There is often no symptom whatever that could positively be got at in making a diagnosis of intra-abdominal injury.

I know by experience that we sometimes find a slow pulse when the belly is full of blood. In looking over the intestine, remember that two ruptures may occur in the same gut. Having found one your work is not done. The gut may rupture from without inward, in which case the injury to the mucosa is more extensive than that to the peritoneal coat; or (especially if the gut be distended), the rupture may be from within outward and the peritoneal coat will show the larger defect. In every case try to have your sutures remedy the entire defect, both of the muscular coat and of the peritoneal covering.

Dr. E. J. Melville of St. Albans.—I have told about all I know about it, but I might say that the paper I just read to you was not prepared from a book. I reported in the neighborhood of twelve cases with a mortality of ten, which is not so bad. I think the diagnosis is the most important part of the thing, and that is impossible. The only way we can get at a diagnosis is by an exploratory incision. While perhaps we may not have classed as good etherizers here as we have in our country, I believe the only danger in an exploratory incision is from the etherizing, and I believe that if we get a good man or woman to give the ether there will be no danger in the exploratory cases.

DEAFNESS; ITS CAUSE AND NEWEST TREATMENT.

BY

H. E. COOK, M. D.,

Formerly Chief of Clinic, St. Bartholomew's Ear Department; Attending Surgeon New Amsterdam Eye and Ear Hospital; Assistant Surgeon Ear Department, Cornell University Dispensary.

In presenting this subject it is my earnest purpose to impress upon the general profession and the general public the enormous importance of the correct treatment and also the correct preventive method of treatment for catarrhal deafness.

While credit must be given for the least advance, the general profession will bear me out that aurists as a rule are dismal failures as regards the treatment of chronic deafness. The ear specialist of to-day offers practically nothing to the person suffering from catarrhal deafness notwithstanding the fact that nineteen out of every twenty cases of ear trouble is chronic catarrhal deafness.

The fact that so little has ever been accomplished by the specialist gives the charlatan a splendid opportunity.

Hearing, which is next to sight in importance has gained absolutely nothing as regards beneficial treatment. Cases are being treated exactly the same as was advocated thirty-five years ago and that brings us back to the time of Professor Politzer who introduced the Politzer bag for the treatment of middle ear deafness. It was and still is in a measure as far as relates to the present methods employed by aurists, the only real and successful means of treating the ear. Even this, though very meagre in its results and slight in its scope, has accomplished much.

To mention the hundreds of useless instruments that have been thrown upon the market and introduced to the public simply for a monetary return would be a waste of valuable time.

The person who reads this article will be one who is sufficiently interested and knows the absolute uselessness of the present methods of treatment and the ineffective instruments that have been imposed upon the public. The laity are disheartened with the various unsuccessful methods used to give them relief. The ear specialists themselves are actually in despair. Any honest specialist if you demand a frank and decisive statement will say that he despairs of ever producing any material results in these cases. It is a great misfortune that conditions are allowed to exist which encourage the suffering public in their eagerness to get relief to be so easily imposed upon by the charlatan and irresponsible medical man.

To make my arguments a little clearer I will enter into a little more detail on:

What is deafness?

What is the cause of deafness?

What can we do with a patient who has acquired deafness?

We find these *conditions* in young and old. *Most cases start with infancy as a rule.*

The young infant may be born with abnormal conditions which I shall state later. This would predestine the child to catarrhal deafness. The infant may be born with all the organs perfectly normal, but through a series of nasal involvement develop a condition called adenoids, which is practically hypertrophy of lymphoid tissue at the back of the nasal cavity, also enlargement of the mucous membrane lining of the nose. This condition can result even after the most careful attention given by the parents of the child. A diagnosis can be readily made even by the merest tyro on medical subjects. The child would breathe with his mouth open, snore at night, toss and become worried during sleep. Dullness of intellect as well as dullness of hearing and running ears develop. These conditions may or may not accompany or precede scarlet fever, measles and diphtheria. The hard palate (roof of the mouth) will show a very high arch. There will be a broadening at the base of the nose, producing a condition known later in life as "frog face." In the older child the teacher will notice the child appears listless and inattentive and takes him to be dull of in-

telleet. His speech will be interfered with giving a nasal twang.

The mechanical effect produced by the adenoids will be to obstruct the orifice of the eustachian tubes preventing a proper drainage of the fluid of the mucous membrane lining of the middle ear and of the eustachian tubes and at the same time preventing an equality of air pressure in the middle ear which is absolutely essential so the ear drum may remain highly sensitive and responsive to the most minute vibrations, and this is necessary for most acute hearing.

If a condition of adenoids does not exist but an overgrowth (hypertrophy of the turbinate bones) has existed at any time during youth or childhood or a spur of the septum a similar condition of affairs may result, possibly not immediately but gradually and will simulate a condition that will be produced by adenoids itself.

Granting that this condition of adenoids, hypertrophied turbinates and spurs of the septum and with the subsequent nasal catarrh which follows have existed with the child for a year or a number of years or with an adult without their removal by operative measures the patient will exhibit the following symptoms as regards catarrhal deafness: head noises, such as tinnitus, parecusis, "hearing better in a noise," diplacusis, conversational deafness which the layman associates with deafness and with which the general physician is fully acquainted. In some instances splendid hearing on the telephone but partial loss of conversational hearing. An examination of the ear in these cases will show partial or complete retraction of the ear drum, partial or complete absence of the drum due to suppurative processes, a thickened or thinned drum membrane, contracted or collapsed condition of the eustachian tube, partial fixation of the stapes, etc. Any of these pathological conditions may be present and still the patient may show what is known as excellent bone conduction, signifying a perfect or nearly perfect perceptive apparatus, (an auditory never undamaged.)

What does the aurist do? What can he do? If adenoids are present it is absolutely essential to remove that condition by operative methods. In my opinion there is no operation in the whole domain of medicine that is attended by happier results than this simple operation for the removal of lymphoid tissue or adenoids. If there is a condition of overgrowth of the turbinate

bodies in the nose their partial removal is followed by gratifying results, also the same results follow in cases of hypertrophied tonsils.

With all the *causes directly or indirectly responsible for deafness* removed as far as possible, treatment then resolves itself into the proper method of producing the long neglected but natural vibrations of the middle and internal ear.

The ear feeds on sound the same as the muscle does on exercise or the body on food. Take away exercise from the muscle and it atrophies. For example place a fractured arm in a splint for six months or better still place an arm in a splint for six months that has had no injury and after removal of the bandage and splint it is found physically impossible to use that arm in any way and it requires months of constant massage to bring it back anywhere near its former condition.

The same condition exists in the ear relatively; take away sound from the ear by mechanical means or otherwise and an atrophy of the integral parts of the middle and internal ear results. The chain of ossicles becomes stiffened, the ear drum becomes thickened and inactive and the vibrations which should be sent directly to the perilymph of the internal ear do not reach their destination in their proper intensity. When the perilymph is made to vibrate normally it has the appearance, for example, of throwing a pebble upon a pond of water, but if the vibration that is sent in is diminished in quantity the series of concentric vibrations are limited in their scope and the diminishing of these vibrations are similar, for example, to pressing your finger on the sound box of a phonograph though ever so lightly. This would cause the pin which plays upon the record to come into too close contact with the record, thereby altering the sound and slowing the transmission of the sound. In the ear we have a similar effect. The pressing of the ear drum ever so lightly upon the ossicles causes a stiffening of the joints of the ossicles and its mechanism producing a pressure upon the oval window which leads to the internal ear, thereby rendering it necessary to have a greater amount of sound to set the drum, the ossicles and the perilymph in action. This will be noted from the simple fact that when a person is deaf from catarrhal deafness you must speak louder to make them hear or make them hear well. Also you will note that persons suf-

fering from catarrhal deafness hear better in a noise, for instance on a train. This is caused simply from the fact that the osicles and the perilymph are set ready for action by the vibration as they should be normally, then the sound is transmitted without interference and the person hears perfectly, whereas persons of normal hearing do not hear at all or very slightly. The fluid that is in the internal ear called perilymph becomes inactive in turn, thereby not performing its proper function.

The primary cause of a contracted ear drum then is a contraction or closure of the eustachian tube. The closure of this tube shuts off the air that is in the middle ear from the nose. The mucous membrane lining the middle ear has the distinctive property of absorbing oxygen from the air. In the instance of closure of the tube the oxygen is absorbed leaving only part of the original air in the middle ear, thereby producing a partial vacuum. If this condition is allowed to remain for many months the ear drum is pushed in by the external atmospheric pressure, which is greater than the pressure in the middle ear.

Then the most important thing is to equalize the pressure on either side of the ear drum, to supply the proper amount of oxygen to the mucous membrane lining the middle ear, to send in air and oxygen in a heated form, that is at least the body temperature on account of the extreme sensitiveness of the organ of hearing, to produce a visible and mechanical movement by means of air vibration of the ear drum and the chain of osicles, and the visible and positive vibration of the perilymph in the internal ear.

This visible and positive vibration of the perilymph must imitate the natural vibration which takes place in the internal ear following sounds of all varieties. In other words we must produce vibrations of the ear which will influence the internal ear the same as all tones, all natural voice tones, all musical tones and all external vibrations which correspond with ordinary everyday sounds; in other words producing vibrations practically from thirty-six to five hundred or even one thousand per second.

To accomplish this result I have devised and perfected a series of instruments which now work automatically, positively and effectually producing these results and *through the eustachian catheter*. I will gladly demonstrate the immense value of this instrument at any time.

With this arrangement air or oxygen or both can be sent through the eustachian catheter in a heated form at the body temperature or even higher, being vibrated at the same time.

At the same time we are able to produce a positive pressure increasing the intensity of the waves and a positive suction or suction and pressure automatically rarefying the air in part and producing different sound waves. The pressure or suction can be sent in at any speed or pressure, producing certain required results.

The results obtained are true sound waves of varied intensity. High and low tones corresponding to the surrounding natural sounds are sent directly into the middle ear producing a complete and harmless vibration of the walls of the ear and chain of osicles, also the vibration of the round and oval windows and finally vibration of the fluid in the internal ear.

The results following the treatment are definite and positive. A frequent statement of my patients receiving this treatment is that "The vibration seems to have reached the spot." Head noises are influenced almost immediately. It produces clearness and general sense of improvement that inspires the patient.

Following this treatment there is usually a dullness of all hearing for several hours which is followed by decided improvement, that is in the mild cases. In the more severe cases the dullness may remain for twelve or twenty-four hours, but after a few treatments this dullness entirely disappears and is followed by a general improvement.

It would give me great pleasure to demonstrate to any of the medical profession the working of these instruments and to demonstrate their availability for the treatment of catarrhal deafness. It is not a patented article and is available to the medical profession.

501 Fifth Ave., New York City.

"You'll have to send for another doctor," said the one who had been called, after a glance at the patient.

"Am I so ill as that?" gasped the sufferer.

"I don't know just how ill you are," replied the man of medicine, "but I know you're the lawyer who cross-examined me when I appeared as an expert witness. My conscience won't let me kill you, and I'll be hanged if I want to cure you. Good day."—*Western Med. Review*.

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EDITORIAL.

The widespread prevalence of smallpox in the state again calls attention to the advisability of general vaccination among school children. Our comparative freedom from this disease during the last ten years has unquestionably bred carelessness in this respect, and it probably would not be an exaggeration to say that fully eighty per cent. of the children of ten years and under in this state are not vaccinated. It requires an occasional outbreak of this disease to remind people of the advisability of such vaccination and it would seem that such a hint would be sufficient warning to parents. Undoubtedly, however, there are still some ignorant people as there always will be, who do not believe in vaccination for smallpox. Without compulsory vaccination, such individuals can not be forced to receive this treatment and consequently must take their chances. The unfortunate part of it is that every such case is liable to be a menace to others.

The outcome of a recent prosecution instituted by the State Board of Health for failure to quarantine some diphtheria cases, emphasizes again the fact that the public expects compliance with the spirit and the letter of the laws intended to protect society against the spread of contagious diseases. It is to be feared that there are many cases of carelessness not only among householders but among physicians who should know better in regard to this matter of reporting communicable diseases. It is also probable that some physicians are still unfamiliar with the law which makes it their duty to put under provisional quarantine any case which they know or suspect to be sick of a communicable disease. This obligation rests not only upon the physician but upon the head of the family. The law does not contemplate that the head of the family should be able to diagnose a case of communicable disease but it does imply the ability to suspect such. The obligation of reporting then, rests equally on the head of the house or the physician, but when a physician has been summoned upon him rests the further duty of quarantining this case. The penalty of failure to comply with this section rests equally on the head of the family or upon the physician if he is called. While the section does not implicitly state this, it implies that the calling of such a physician discharges the obligation of the householder, putting the responsibility then upon the physician who is presumed to be able to suspect with greater acumen. Another thing which we fear is not distinctly understood by physicians in general is that this obligation of reporting cases together with the penalty for failure to do so applies to measles, German measles, chickenpox and whooping cough, as strongly as it does to diphtheria, scarlatina and smallpox. There seems to be little progress in the suppression of these so-

called children's diseases. Part of the reason for this is undoubtedly the fact that their prodromal symptoms and early course are difficult to diagnose from simple coryza and "winter colds" but unquestionably some of the fact lies in the failure of the householder to call the physician or report cases in his own family, the nature of which he knows, and often to the failure of the physician to immediately quarantine and report such cases after he is called. It seems that the medical inspection of schools if it can be universal might remedy this condition greatly. We believe that any child showing symptoms of acute rhinitis, laryngitis or coryza should be excluded from school until it is certain that this is not the prodrome of one of these communicable diseases. The old idea that children had best have the children's diseases early and get over with them still prevails among the laity and is fostered by the carelessness or indifference if not actual ignorance of some physicians. The fact that these diseases are actually responsible for many more deaths than scarlatina or diphtheria combined seems hard to believe but it is nevertheless true. Individual members of society may be careless in reference to these matters in their own family but the verdict of the jury in the above mentioned case shows that they are not tolerant of such failure on the part of a physician. His peculiar position in society renders him, whether he wishes or not, in a measure the guardian of the public health and the public expects him to discharge this obligation conscientiously and intelligently. We publish below the section which covers this matter.

Sec. 5447. Report of communicable disease to health officer. The head of a family in such unorganized town or gore in whose home there occurs a case of infectious or contagious disease dangerous to the public health shall immediately give notice to said health officer. A physician

who knows or suspects that a person in such unorganized town or gore whom he had been called to attend is sick or has died of a communicable disease dangerous to the public health, shall at once quarantine and report to said health officer the name, degree of virulence and cause or source of the disease, place where such cause exists and such other facts relating thereto as may be necessary for the health officer to make examination and act in the premises. The head of a family or a physician who fails to give reasonable notice to said health officer of the existence of such a disease shall be fined not more than fifty dollars nor less than ten dollars with costs of prosecution.

CAUSES OF DEATH BY AGE PERIODS.

Vital Statistics drawn from the Latest Census Bureau Mortality Statistics.

Washington, D. C., January, 1912.—Bulletin 109 on Mortality Statistics for 1910, the latest on the subject, has been issued by Census Director Durand. It was prepared under the supervision of Dr. Cressy L. Wilbur, chief statistician for vital statistics. The figures relate to the Census Bureau's death registration area which on July 1, 1910, had an estimated population of 53,843,896, or 58.3 per cent of the total for continental United States. Preliminary press summaries relative to the death rates for the registration states and cities, and concerning infant mortality, were given out some time ago.

The total number of deaths in 1910 from all causes at all ages, including unknown ages, was 805,412. Of these, 154,373 were infants under 1 year of age, 33,080 were 1 year old, 14,727 were 2 years old, 8,808 were 3 years old, 6,331 were 4 years old, 217,319 were under 5 years, 17,943 were 5 to 9 years old, 235,262 were under 10 years old, 31,508 were 10 to 19 years old, 62,957 were 20 to 29 years old, 68,957 were 30 to 39 years old, 72,935 were 40 to 49 years old, 81,540 were 50 to 59 years old, 96,651 were 60 to 69 years old, 96,000 were 70 to 79 years old, 51,401 were 80 to 89 years old, and 7,974 were 90 years and over.

THE IMPORTANT CAUSES OF DEATH.

Among the deaths numbering 805,412, from all causes at all ages in 1910, tuberculosis (all forms) was the most important cause, being responsible for 10.7 per cent of the total; organic diseases of the heart followed with 9.5 per cent; diarrhea and enteritis, 7.8 per cent; pneumonia (lobar and undefined) 6.7 per cent; acute nephritis, Bright's disease, 6.6 per cent; accident (not including injuries at birth) 5.6 per cent; cancer and other malignant tumors (all forms) 5.1 per cent; cerebral hemorrhage, apoplexy, 4.9 per cent; bronchopneumonia, 3.1 per cent; premature birth, 2.5 per cent; congenital debility, 1.9 per cent; old age, 1.7 per cent; typhoid fever, 1.6 per cent; bronchitis (acute and chronic) 1.6 per cent; diphtheria and croup, 1.4 per cent; diseases of the arteries, atheroma, aneurysm, etc., 1.4 per cent; suicide, 1.1 per cent; and 1.0 per cent each for influenza, diabetes, paralysis without specified cause, other diseases of the stomach (cancer excepted), the puerperal state, and malformations.

CAUSES BY AGE PERIODS.

For infants under 1 and 1 and 2 years of age, diarrhea and enteritis was the most important cause of death, the percentage being 29.0, 28.9, and 12.9, respectively. Diphtheria and croup caused the largest proportion of deaths of children 3 and 4 years of age, the percentage being 16.4 and 18.2 respectively. For the entire group of children under 5 years of age, the leading cause was diarrhea and enteritis, 26.3 and for children from 5 to 9, it was diphtheria and croup 16.4. Diarrhea and enteritis caused 24.5 per cent of all deaths among children under 10 years of age.

TUBERCULOSIS GREATEST FROM 10 TO 50 YEARS OF AGE.

Tuberculosis caused by far the largest proportion of deaths at each 10 year age period from 10 to 50 years of age. At 10 to 19 years, it formed 24.5 per cent of the total deaths; at 20 to 29 years, 35.0; at 30 to 39 years, 28.5; and at 40 to 49 years, 18.3. At 50 to 59, 60 to 69, 70 to 79, 80 to 89, 90 and over, the percentages were 10.2, 5.1, 2.4, 0.9 and 0.4, respectively. It formed 1.6 per cent of all deaths among infants under 1 year of age, and steadily increased to

5.3 at 1 year, 6.1 at 2 years, 6.9 at 3 years, 7.2 at 4 years, but forming only 2.8 for under 5 years, although going as high as 7.9 per cent in the age period from 5 to 9 years, and 3.2 for under 10 years.

HEART DISEASES RULE FROM 50 YEARS UPWARD.

Organic diseases of the heart constituted the most important cause of death at each age period between 50 and 90 years of age and also at the period 90 years and over. Since "old age" to which the largest proportion (27.6 per cent) of deaths at this period is assigned, is to a large extent equivalent to the statement that the cause of death is unknown. The percentage of deaths from this cause at the age periods, 50 to 59, 60 to 69, 70 to 79, 80 to 89, 90 and over, was 13.4, 18.2, 19.8, 17.0, and 11.2 respectively. It caused 0.6 per cent of all deaths among children under 1 year of age, 0.4 at 1 year, 9.7 at 2 years, 1.0 at 3 years, 1.6 at 4 years, 0.6 of all under 5 years, 4.0 of all from 5 to 9 years and 0.9 of all under 10 years of age.

BRIGHT'S DISEASE AND CANCER.

Acute nephritis, Bright's disease, caused from 3.4 to 6.3 per cent of the deaths at the 10 year age periods from 10 to 39 years of age, but it increased to 9.5 per cent at 40 to 49 years, advancing again to 11.7 per cent at 50 to 59 years, still increasing to 12.1 per cent at 60 to 69 years, then falling to 11.1 per cent at 70 to 79 years, decreasing again to 8.5 per cent at 80 to 89 years, and finally becoming 5.4 per cent at 90 years and over. It caused 0.8 per cent of the deaths at 1 year, 1.3 at 2, 2.0 at 3, 2.2 at 4, 0.7 of all deaths of children under 5 years of age, 2.6 of all deaths at the 5 to 9 years age period, and 0.8 per cent of the deaths of all children under 10 years of age.

Cancer is not charged with any percentages in the age periods up to 19 years of age, but it formed 1.1 per cent at 20 to 29 years, 3.8 per cent at 30 to 39 years, 9.0 per cent at 40 to 49 years, 12.1 per cent at 50 to 59 years, 11.1 per cent at 60 to 69 years, 7.8 per cent at 70 to 79 years, 4.5 per cent at 80 to 89 years, and 2.2 per cent at 90 years and over.

TYPHOID AND APOPLEXY.

Typhoid fever caused 8.0 per cent of the deaths at the age period 10 to 19 years but decreased to 6.0 per cent at 20 to 29 years, to 3.2

per cent at 30 to 39 years, to 1.8 per cent at 40 to 49 years, to 1.1 per cent at 50 to 59 years, there being none for the remaining age periods. It formed 0.4 per cent of all deaths at 1 year of age, 0.9 at 2, 1.6 at 3, 2.6 at 4, and 3.8 per cent at the age period 5 to 9 years of age.

Cerebral hemorrhage, or apoplexy, began its course with 0.7 per cent of all the deaths at the 20 to 29 years age period, then constantly increasing to 1.7 at 30 to 39 years, 4.0 at 40 to 49 years, 7.5 at 50 to 59 years, 10.7 at 60 to 69 years, 12.1 at 70 to 79 years, but falling to 10.8 at 80 to 89 years, and 7.5 at 90 years and over.

OLD AGE AND ACCIDENTS.

Old age first showed its fatal effects with 0.7 per cent of all deaths at the 60 to 69 years period, 4.0 at 70 to 79, 13.3 at 80 to 89, and 27.6 at 90 years and over.

Accident (not including injuries at birth) claimed 0.9 per cent of all deaths among infants under 1 year, 3.4 at 1 year, 7.3 at 2 years, 9.0 at 3 years, 10.3 at 4 years, 2.3 of all in the under 5 years age period, 12.0 of all in the 5 to 9 years, 3.1 of all deaths of children under 10 years, 13.1 at 10 to 19 years, 12.9 at 20 to 29 years, 10.5 at 30 to 39 years, 8.2 at 40 to 49 years, 5.3 at 50 to 59 years, 3.4 at 60 to 69 years, 2.9 at 70 to 79 years, 3.5 at 80 to 89 years, and 5.1 at 90 years and over.

SUICIDE, HOMICIDE, ETC.

Suicide starts with 1.1 per cent of all deaths at the 10 to 19 years age period, increasing to 2.8 at 20 to 29 years, then decreasing to 2.6 at 30 to 39 years, 2.3 at 40 to 49 years, 1.8 at 50 to 59 years, stopping with 1.0 per cent of all deaths at the age period of 60 to 69 years.

Homicide begins with 1.7 per cent of all deaths at the age period of 20 to 29 years, 1.2 at 30 to 39 years, and 0.6 at 40 to 49 years.

Pneumonia (lobar and undefined) claims 5.5 per cent of all deaths of infants under 1 year of age, 10.1 at 1 year, 10.0 at 2 year, 8.1 at 3 years, 7.5 at 4 years, 6.6 of all deaths in the age period of under 5 years, 6.3 at 5 to 9 years, 6.6 of all under 10 years, 5.7 at 10 to 19 years, 5.6 at 20 to 29 years, 7.1 at 30 to 39 years, 7.8 at 40 to 49 years, 7.6 at 50 to 59 years, 7.1 at 60 to 69 years, 6.5 at 70 to 79 years, 5.7 at 80 to 89 years, and 5.1 at 90 years and over.

Appendicitis begins with 1.0 per cent of all deaths of children at 4 years of age, 3.2 of all at 5 to 9 years, 4.7 at 10 to 19 years, 2.0 at 20 to 29 years, 1.4 at 30 to 39 years, and ends with 1.0 at 40 to 49 years.

NEWS ITEMS.

Report from Washington, D. C., states that on Jan. 8th, President Taft sent to the senate the nomination of Dr. Rupert Blue, of South Carolina, to succeed the late Dr. Walter Wyman as surgeon-general of the United States Public Health and Marine-Hospital Service. It is also announced that hereafter the term of service in this position will be limited to four years.

The Board of Health of the city of New York has adopted a resolution amending the sanitary code to forbid the use of common towels. The new section of the code states that "No person, firm or corporation having the management and control of any public lavatory, wash-room, or public comfort station, shall maintain in or about such lavatory, washroom, or public comfort station, any towel or towels for use in common."

Dr. Edward A. Herr, the old Dartmouth football captain and graduate of the Vermont Medical College, class of 1909, was married Nov. 11th, 1911, the announcement of the wedding having just been made. He was captain of the Dartmouth team the year of Princeton's defeat. He now lives in Waterbury, Conn.

A daughter was born on January 21st, to Dr. and Mrs. E. G. Sprague of Barre.

Dr. Ralph Perry, recently of West Virginia, has opened an office in Wells River, Vt.

The retirement of Dr. George B. Shattuck as editor of the *Boston Medical and Surgical Journal* is announced in the current number of that journal. He has been the editor since 1881 and during this time there has been greater advancement in surgery and medicine than in all its history before that date.

A physician of New York notes in the *Medical Record* that he was astonished to find but four cases of typhoid fever in six great hospitals of Europe, that he visited recently. On

resuming his duties in one of the smallest New York hospitals, on his return, he found three cases in the wards and saw two others in consultation. He notes the military provision with which Germany supervises completely the milk and drinking water supplies. The New York milk supply is not supervised at all.

In Olean, N. Y., more than half of the children are kept out of the public schools by parents who object to vaccination. The city has had at one time forty-six cases of smallpox with no deaths.

Dr. William H. Park of the research laboratory of the Board of Health of New York says that meningitis serum was first made in 1893 by the Board of Health and that it was not consequently made first by Dr. Flexner and that the Rockefeller Institute should not have the credit for its discovery.

During the year 1911 more than \$14,500,000 was spent in the war on tuberculosis in this country. The State of New York leads in the amount expended by the states. \$1,055,000 was received from private sources and \$2,495,000 was expended from public funds. Pennsylvania and Massachusetts are the second and third states in the amount expended.

In a bulletin just issued by the New York Board of Health the common towel is to be abolished at once in all public lavatories and wash rooms at any place. The use of a towel by more than one person is a violation of the code.

Dr. Marion L. Bugbee, Concord, is the secretary of the State of New Hampshire of the American Medical Association Committee for Public Health among women. The doctor has just announced to the public that February 9th is to be observed as health day.

Dr. P. T. Haskell of Concord, N. H., has accepted a position as assistant physician to the New Hampshire State Hospital and Dr. W. B. McDonald, formerly in the hospital has taken Dr. Haskell's office and is now doing general work.

Dr. Joseph J. Higgins of New York City recently testified in court that a man's life after the removal of the spleen is about five

years. He quoted Dr. Joseph A. Blake and Dr. George E. Brewer to this effect. A machinist who fell and injured his spleen so that it was necessary to remove it received an award of \$7,639 in a suit for \$50,000. This verdict was sustained by the appellate division of the Supreme Court.

President Hibben of Princeton University in closing a recent address regarding Princeton and her traditions gave out what he called his confession of faith regarding the Princeton ideal. It was: No pedantry in scholarship. No affectation in manners. No hypocrisy in morals. No dissimulation in friendship, and no cant in religion.

Dr. W. Lazell of Barre recently suffered a loss of about \$5,000 to his house and office by fire.

A. Shuman, president of the city hospital (Boston) board of trustees declares in a letter to the mayor that the city receives from the State Board of Charities at least \$10 per week for each patient instead of \$5, which the state now allows. Mr. Shuman declares it costs \$12.89 gross per week at the city hospital for the patients treated during 1911.

The Harvard Medical School is about to erect a dormitory and a building for social purposes. These will be near the new medical buildings.

A son was born to Dr. and Mrs. Flagg of Essex Centre, Jan. 16.

Dr. E. R. Campbell of Bellows Falls has been a patient at the Heaton Hospital at Montpelier for several weeks. He is now recovering from a severe attack of neurasthenia.

The main building of the Maternity Hospital of the New England Reform Society, Jamaica Plains, was destroyed by fire January 16th. The building was new and the loss was \$25,000.

Dr. John L. Morse of Boston in a recent medical lecture declares that "More society women nurse their babies now than was the case ten years ago. More society women have babies to nurse." In this lecture he denied that there was any real equivalent for mother's milk in the feeding of infants. The disadvantage of cow's milk lies in the difficulty of getting it clean enough and of the right grade.

Dr. Henry A. Christian, dean of Harvard Medical School, has resigned and intends to give his whole attention to the new Brigham Hospital. His resignation takes effect Sept. 1.

Dr. Norton Royce Hotchkiss of New Haven, Conn., died in that city Jan. 30th. He was surgeon-general of the State under Gov. R. S. Woodruff. He was born at Fort Mill, N. C., in 1870, and was a graduate of the University of Maryland.

Mrs. Hiram Hitchcock who has just died at the Mary Hitchcock Hospital in Hanover, N. H., left an endowment for four free beds to that institution.

Dr. J. E. Vallee is closing his practice in Lebanon preparatory to going to New York and Europe for post-graduate study.

Professor Farnham, of Yale, classes the idle rich with the imbecile. Some of their inane and vacuous "diversions" seem to justify his severe classification.

In the war against tuberculosis \$14,500,000 was spent during the year 1911 throughout the country, according to a statement issued at New York, January 1st, by the National Association for the Study and Prevention of Tuberculosis.

State regulation of physicians' fees forms a part of the great Lloyd-George scheme for health maintenance of Britain's lower classes. In view of the successful protest of England's united medical profession against the minimum fee, as first proposed, and the possibility of such an extreme measure in this country, it behooves every American practitioner to be informed on the subject. The ablest summary of the Lloyd-George measure known to us will be found in *The Survey* for December 2, 1911, Dr. Randolph J. Brodsky writing in detail under the title "The Struggle for the British Health Bill."

Alabama is the latest state to provide free diphtheria antitoxin for its indigent sick, depots for its supply in each country having been arranged.

Philadelphia's gigantic potable water filtration system, the most extensive design in the world's history, now fully supplies its 129½ square miles of territory. Many physicians among other investigators from all sections are making

studies of the novel details of this original plant.

The Psychiatric Clinic given by Henry Phipps, of Pittsburgh, Pa., to Johns Hopkins Hospital, Baltimore, Md., at a cost of about \$1,000,000, is nearing completion. It is to be under the direction of Dr. Adolf Meyer. It will afford opportunity for patients suffering from mental diseases, to be treated without the necessity of being committed to insane hospitals, and will afford excellent instruction to students in mental disorders. A department is to be established for the treatment of nervous diseases on the theory of psycho-analysis. (See article by Dr. Reed on page 21 in January *World*.)

The latest occupation neurosis is "aviator's disease," its symptoms being due to rapid alternation of barometric pressure plus nerve strain plus atmospheric alterations. Dyspnea, hypertension, frontal headaches, intense desire to urinate and cardiac irregularity are foremost among the symptoms.

So-called "Brill's disease" is an acute infectious disease of unknown origin with symptoms resembling those of a mild case of typhoid fever. Well known in Russia, cases are being reported at present from New York city.

The cost of vaccinating our troops against typhoid fever is just 12½ cents per man.

Dr. Simon Flexner, of the Rockefeller Institute for Research, has been appointed by the Emperor of Germany an honorary member of the Royal Institute for Experimental Therapeutics at Frankfort-on-the-Main.

New York State's Supreme Court holds constitutional an act for medical examination and treatment of prostitutes.

The medical profession of Cleveland, Ohio, rejoices because the medical school there of Western Reserve University has just completed its million-dollar endowment.

Diploma mills will not down, it seems, if a telegram dated December 12th, from Kingston, Jamaica, is in evidence. There the island government is continuing its prosecution of all persons practicing medicine under diplomas issued by the "Thompsonian Medical College," of Allentown, Pa. The matter is now before

the courts. Dr. Cawley, medical officer of Lehigh County, Pa., who was called there at the instance of the prosecution, testified that the "Thompsonian Medical College" does not legally exist. The defense had asserted that the college was a recognized center for the training of medical men. At a previous hearing the American consul, Nicholas R. Snyder, submitted evidence similar to that given by Dr. Cawley.—*Med. World.*

The Omaha (Douglas Co.), Neb., Medical Society, on record against contract practise, now proposes ostracism for those who persist in that wrongful method.

One more hero lost his life in the cause of humanity when, at New York city, on December 7th, Arthur H. Koelker, a doctor of philosophy of the University of Berlin and a chemist of note, was instantly killed in the laboratory of Roosevelt Hospital by the fumes of deadly chemicals, with which he was experimenting. Dr. Koelker was an exceptionally bright man, about 25 years old. His home was in Toledo, Ohio, and he had been graduated as a doctor of medicine and doctor of chemistry about a year and a half ago from the University of Berlin. On his return to this country he was made assistant professor of chemistry of Johns Hopkins University, but went to New York last June to do independent research work.

Fee-splitting has just been condemned by the Livingstone Co., Mo., Medical Society.

In a meeting of the American Economic Association and the Association for Labor Legislation at Washington, D. C., December 30th, Secretary of the Interior Fisher declared that the high death rate in the mining industry in the United States demanded immediate attention. Other speakers urged labor legislation and improvement of mining conditions.

The American Association for the Advancement of Science closed a successful week's annual session at Washington, D. C., December 30th. More than 2,300 members registered during the week, including visitors from Germany, China, Porto Rico, Hawaii, Cuba and Panama, with 32 from Canada.

A great delegation of German doctors will come to America next summer to visit New York, Philadelphia, Atlantic City, Baltimore, Washington, Chicago, Boston, Montreal and Albany, and then attend the International Hygiene Congress at Washington in September.

The Lone Star State Medical, Dental and Pharmaceutical Association held its twenty-fifth annual session in Dallas, October 24-26. The organization is composed of colored men and women of Texas engaged in the professions of medicine, dentistry and pharmacy.

Scientists to the number of about 100 from different parts of the country met at Baltimore, Md., December 27-29, 1911, in the combined annual meetings of the American Physiologic Society, the American Society of Biochemists, and the American Society of Pharmacology and Experimental Therapeutics.

The annual meetings of the American Society of Naturalists, the American Society of Zoologists and the American Association of Anatomists were held at Princeton University, December 26-29, 1911. There were present about 250 of the leading scientists of the eastern and central United States.

The city of London closed the year 1911 with a total of 134,218 paupers. Of these 77,853 were in the work houses and 32,018 on the outdoor relief lists.

The Court of Appeals of New York State just rendered a decision in which the judges declared that pedestrians need not stop, look both ways and listen for automobiles at street crossings. That for auto and wayfarer alike the same road rights prevail. The main point of the decision is that the injured person in order to recover damages need not prove that he looked and listened before attempting to cross the street.

The judge said the pending case furnished a good opportunity to restate familiar rules in this day of fast moving and powerful street vehicles for pedestrians and drivers to observe. He said that as the right of passage is common to all, both footmen and drivers were bound to exercise reasonable care for their own safety and the safety of others in the street.

THE AMERICAN HOSPITAL ASSOCIATION.

*Next Meeting Detroit, Mich., Sept. 24th, 25th,
26th and 27th, 1912.*

ITS WORK AND ITS AIMS.

The American Hospital Association is composed of hospital trustees, managers, contributors and officers of associations founded to promote the interests of organized medical charities. It aims to promote economy and efficiency in hospital management, to educate the public regarding hospital needs, to disseminate information regarding every phase of hospital work, to assist those who are carrying hospital burdens, and in every possible way to improve the care of the sick.

During the dozen or more years of its existence, it has given much study to hospital construction, called attention to defects and mistakes, pointed out causes of difficulties and methods of improvement, thereby rendering a distinct service to hospitals recently constructed, and to the hospitals of the future.

It has devoted time and earnest thought to improving methods of bookkeeping and accounting for hospitals, and has recommended a system of uniform accounting and reporting applicable alike to larger and smaller hospitals, thus aiding materially in bringing about more systematic and business methods in its own particular field.

Keeping in view the interests and needs of hospitals of varied sizes and conditions, of the nurses, and of the public, it has given a serious and prolonged study to the training of nurses, and has recommended a course of training which has been adopted by large numbers of hospitals in the United States and Canada, thus doing much to standardize the work of that important department, and render it more efficient.

Questions regarding hospital finance, and prevention of waste, medical organization, management of infectious diseases, the outpatient department, social service, municipal needs and policies relating to the care of the sick, hospital dietaries, the best method of purchasing, the training of superintendents and heads of departments, hospital accidents, and a great variety of similar practical subjects, important to all hospitals, have been discussed, so that the experience of one hospital might be made

known and used for the benefit of all.

The American Hospital Association welcomes to its membership and councils, the representatives and supporters of the smallest hospitals, as well as those of larger institutions. It needs their support and assistance, and invites the active co-operation of every hospital in the United States and Canada.

Believing that the establishment of a central bureau of hospital information in which would be filed plans and information regarding construction and every phase of hospital information, would be a distinct help and benefit to hospitals in general, the American Hospital Association has committed itself to that object and is now working diligently to that end. The addition of several hundred new members to the already large and growing list is necessary before the important object can be realized.

Every member of the Association can help bring the goal of the hospital worker's ambition one step nearer, by securing annually one or more members for the Association.

You are earnestly invited to assist in this undertaking to co-operate in promoting the usefulness and general welfare of the organization and to participate in the benefits to be derived by becoming a member of the American Hospital Association. Those who can not take an active part in the work the Association is doing, can greatly assist by retaining their membership by payment of the annual fee, giving the Association the benefit of their name and influence.

Copies of this leaflet and application forms for membership may be had by addressing the Secretary, Dr. J. N. E. Brown, Toronto, Canada.

OFFICERS 1910-1911.

President

W. L. Babcock, M. D.

The Grace Hospital, Detroit, Mich.

Vice-Presidents

F. A. Washburn, M. D.

Massachusetts General Hospital, Boston, Mass.

Miss May L. Keith,

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Frederick Brush, M. D.

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Treasurer

Asa Bacon, Esq.

The Presbyterian Hospital, Chicago, Ill.

Secretary

J. N. E. Brown, M. B., 522 Church St., Toronto.

The American Red Cross desires again to invite attention to the exhibition in connection with the Ninth International Red Cross Conference, which will be held in Washington, D. C., from May 7 to 17, 1912.

The exhibition will be divided into two sections, which will be styled Marie Feodorovna and General. The former is a prize competition, with prizes aggregating 18,000 rubles, or approximately \$9,000, divided into nine prizes, one of 6,000 rubles, approximately \$3,000; two of 3,000 rubles each, and six of 1,000 rubles each.

The subjects of this competition are as follows:

1. A scheme for the removal of wounded from the battlefield with the minimum number of stretcher bearers.
2. Portable (surgeons') washstands, for use in the field.
3. The best method of packing dressings for use at first aid and dressing stations.
4. Wheeled stretchers.
5. Transport of stretchers on mule back.
6. Easily folding portable stretchers.
7. Transport of the wounded between warships and hospital ships, and the coast.
8. The best method of heating railway cars by a system independent of steam from the locomotive.
9. The best model of portable Roentgen apparatus, permitting utilization of x-rays on the battlefield and at first aid stations.

The maximum prize will be awarded to the best exhibit, irrespective of the subject, and so on.

The General Exhibit is again divided into two parts; the first will be an exhibition by the various Red Cross Associations of the world. The second will be devoted to exhibits by individuals or business houses of any articles having to do with the amelioration of the sufferings of sick and wounded in war, which are not covered by the Marie Feodorovna Prize Competition for the year. While the American Red Cross will be glad to have any articles pertaining to medical and surgical practice in the field, it is especially anxious to secure a full exhibit relating to preventive measures in campaign. Such articles will be classified as follows:

1. Apparatus for furnishing good water in the field.
2. Field apparatus for the disposal of wastes.

3. Shelter such as portable huts, tents and the like, for hospital purposes.

4. Transport apparatus (to prevent the suffering of sick and wounded) exclusive of such apparatus as specified for the Marie Feodorovna Prize Competition.

As with the Marie Feodorovna Prize Competition, for this country only articles having the approval of the Central Committee of the American Red Cross will be accepted.

Diplomas will be awarded for exhibits in this section of the exhibition as approved and recommended by the jury.

Further information may be obtained from the chairman, Exhibition Committee, American Red Cross, Washington, D. C.

It is perhaps to apparatus having to do with prevention of disease in armies that the energies of Americans have been specially directed since the Spanish-American War. Therefore, the last mentioned section of the exhibition should make an appeal to them.

OBITUARY.

Levi H. Nichols, for thirty-two years a practitioner of Stamford, died at his home, December 30th, 1911, from cerebral hemorrhage, aged 68 years.

Henry Kerr Hartzell, M. D., University of Vermont, Burlington, 1863, who after 1870 went into banking business and hematite ore mining: an authority on metallurgy and especially iron ores; president of the Lehigh Mills Corporation, died at his home in Allentown, Pa., December 20th, from pneumonia, aged 72 years.

CLINICAL SOCIETY OF NEW YORK POLY- CLINIC MEDICAL SCHOOL AND HOSPITAL.

Meeting of January 8th, 1902.

STRANGULATED HERNIA OPERATED UPON UNDER
COCAINE.

Case presented by Dr. Robert Brennan.

Patient was a man of 41 years of age and is single. His hernia was noticed at birth, and for sixteen years he wore a truss. At 16 he discontinued its use, but after four years became engaged in laborious work, and had to put it on

again. One week ago the hernia came down, and in spite of his efforts, he could not replace it. Three days after it came down, he began to vomit, and this continued for two days, until he entered the hospital. He had a marked mitral lesion, which suggested the desirability of cocaine anesthesia. On cutting down, the sac enclosing the hernia was liberated, letting out bloody fluid and a knuckle of black gut. Under hot applications to the gut, the color became restored in about an hour, and the wound was sewed up. His pulse promptly dropped from 140 to 100 after the operation, and has remained normal since.

Dr. Morrow said he had been interested in cases of strangulated hernia, from the fact that discoloration of the gut is often due to traction upon the vessels, and that time might be saved by promptly replacing the gut in the abdominal cavity. He had demonstrated that normal gut, when constricted at the femoral ring, for a short period of time, would promptly lose its color, and become black, and would regain it when shoved back into the abdomen.

THYRO-GLOSSAL CYST.

Case presented by Dr. J. A. Bodine.

Dr. Bodine showed a specimen of thyro-glossal cyst, which he had removed from a case in its entirety. The case was somewhat uncommon. He had noticed from former careful observations with Dr. Myles, that these cysts had a way of returning after operation, or at least leaving a suppurating condition in the neck. To obtain success, the cyst must be dissected from the base of the tongue to the thyroid gland, including the ducts. The cyst wall was thin, and nothing should be left if success was to be obtained and a cure promised.

Dr. Morrow said that he had never operated upon a thyro-glossal cyst, but had a case of branchial cyst, which came under the class of congenital malformations. This case was very difficult because the wall of the fistula, which opened into the pharynx, was adherent to the deep vessels, and it was very hard to separate them, but this was finally accomplished.

AMPUTATION OF FINGER TIP WITH REPLACEMENT AND RECOVERY OF FINGER.

Case presented by Dr. J. A. Bodine.

Dr. Bodine showed a case of a little fellow, who while working at a cloth cutting device, in

a clothing shop, caught his finger tip in the machinery, cutting off the finger, about half an inch from the tip. The boy was badly frightened, and had run to the hospital, leaving the finger tip on the floor in the shop. A friend was sent after it, and returned two hours later, bringing the tip which was rather dried up but softened after soaking in normal salt solution. The tip was put in place and bound up. The finger showed complete healing, and a round line of scar tissue, where the junction had taken place.

RESECTION OF THE POSTERIOR ROOT OF THE TRI-FACIAL NERVE.

Case presented by Dr. J. A. Bodine.

Dr. Bodine showed a case of tri-facial neuralgia of long standing in a woman 60 years of age. She had tried injections of alcohol from time to time, but these finally failed to relieve her, and she was willing to have anything done. With the patient in a sitting position Dr. Bodine had opened the skull, in front of the ear, just in front of the zygoma, the opening being 5 c. m. in diameter, the bone removed and the brain lifted up. The tri-facial ganglion was not removed, but he went in behind it, and put a hook around the root, and resected it. Twenty-four hours after the operation, she was entirely free from pain, and is cured for the balance of her life. There was no particular difficulty about the operation, although it was the first he had done of the kind: and so far as he knew was the first time it had been performed in this city. It was not removing the ganglion, but the pulling out of the sensory root from the pons varolii which rendered the area very dangerous. It is not difficult however for anyone trained in surgery. He believed that he had separated the sensory from the motor roots, as mastication had not been interfered with. Such cases as had been treated by this method, had been successful. At the beginning of the operation, he had torn the middle meningeal artery, but there was no trouble checking the hemorrhage. Dr. Bodine thought that the fear of hemorrhage made cowards of many surgeons. The patient did not suffer from shock, and the pulse did not go above 90. The operation requires skill and judgment, as it is distinctly a one man operation from start to finish.

Dr. Keller had given this case of Dr. Bodine's four alcohol injections, with slight benefit. Alcohol injections usually give relief in these cases,

and in his experience of fifty cases, he had had excellent results. Where relief was not obtained he thought that the lesion was further back than the injection reached. Even when a resection was contemplated, Dr. Keller thought it benefited the patient to precede the resection by alcohol injection.

Dr. Connor welcomed any method of resection which spared the motor roots, as a ganglion resection usually resulted in a loss of the eye.

CASE OF SALPINGITIS INFECTION FOLLOWING CONCEPTION.

Case presented by Dr. Morgan.

Dr. Morgan showed a case of a woman 31 years of age, married, with one child 11 years of age, and a history of several miscarriages. Her husband stated that she was exposed to gonorrhoea but she gave no history of inconvenience. Four weeks before admission to hospital, she called her family physician, who found her in pain and bleeding. She said she had missed one period, and was afraid she was going to miscarry. Bi-manual examination showed a mass posterior to the uterus, and a diagnosis was made of a probable ruptured ectopic pregnancy. When seen a little later, there was a tremendous mass. On consultation she had been removed to the hospital, and a laparotomy performed, and a pregnant uterus found. There was nothing to indicate a submucous, or an intra-mural fibroid. Further examination brought to light a tubo-ovarian cyst on the right side and a chronic pyo-salpingitis of the left tube with the fimbriated extremity closed. The tube and ovary on the right side were removed, and the left tube also. Dr. Morgan was amazed that the woman was pregnant. She began to menstruate after a rest of two weeks in bed. The interesting feature was that the woman became pregnant after an infection which apparently closed both tubes.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

LIPOMATOSIS OF THE FEET.

W. R. MACAUSLAND and B. E. WOOD (*Journal A. M. A.*, March 25), report with illustrations, a case of lipomatosis of the feet and legs which seemed to have originated before birth and rapidly progressed till it became a serious embarrassment. Several

operations were performed, including amputation of the toes at six months of age and later conservative operations for the removal of the fatty growths. These, however, did not suffice and amputation of the left leg was performed at the age of 12. The patient now walks well with crutches and the right foot has ceased to grow. The authors do not find any similar case reported in the literature.

ANGIOSARCOMA.

J. BONDY, New York (*Journal A. M. A.*, March 25), reports a case of angiosarcoma of the liver microscopically diagnosed after operation in an infant who survived only three and a half months after birth. The chief features in the case, which is reported on account of its rarity and the difficulty of making an accurate diagnosis, are: first, the early period of life at which the tumor started (possibly before birth); second, the rapid increase in abdominal girth; and the paucity of the symptoms until just before death. The abdomen was noted to be slightly protuberant three weeks after birth, and it became markedly so later, until just before death it measured 29 inches at the umbilicus.

OBSTETRICS AND ANIMAL EXPERIMENTATION.

J. WHITRIDGE WILLIAMS (*Journal A. M. A.*, April 22), says that while at first sight the relation between animal experiments and obstetrics is less apparent than in some other branches of medicine, it can be demonstrated beyond question. He gives an elaborate review of the development of our knowledge of the origin and means of prevention of puerperal fever which formerly carried off about one in thirty of all married women, even within the last fifty years, but which now is a comparatively negligible cause of obstetric mortality. The application of aseptic technic to obstetrics is also shown to have been the result of the acquisitions obtained by vivisection, the mortality from puerperal infection in well-regulated hospitals being at present, it is safe to say, less than 0.25 per cent., as contrasted with the average mortality of 3 or 4 per cent. throughout the world before the introduction of antiseptic methods. Various operative procedures in obstetrics and their safety in recent times are well illustrated by the history of Cesarean section, and exactly the same story can be told concerning the results following the operations of symphysectomy and pubiotomy. We also owe to vivisection the recognition of the bacterial nature of the diseases of the new-born child which formerly caused a terrible mortality. At present every child-bearing woman who has the benefit of the action of ergot during confinement has the benefit of at least one of the advantages which has been gained from animal experimentation. Another important acquisition is that of the knowledge of the internal secretion of the ovaries and the consequences of its suppression. Still another has been gained by the investigations of experimenters with animals on the origin and nature of the toxemias of pregnancy. While the subject of eclampsia has not yet been thoroughly cleared up, it is only by animal experimentation that we can ever accomplish it. Our knowledge of the production of fetal deformities is due to the same source. Williams concludes by saying that every time a physician cleanses his

hands preparatory to attending a woman in labor he pays a tribute to the value of animal experiments, and he confidently expects that the problems that are yet to be solved in regard to the function of labor and its disorders will be cleared up by the same means.

THE MIDWIFE PROBLEM.

The results of a letter of inquiry containing fifty questions addressed to teachers of obstetrics in various medical schools giving a four-year course are reported and discussed by J. WILTRIDGE WILLIAMS, Baltimore (*Journal A. M. A.*, January 6). He finds the condition of affairs unsatisfactory. Forty-three replies in all were received to the 120 letters sent out, the answers representing one-half of the acceptable and one-fifth of the non-acceptable medical schools. From these answers received, Williams concludes that, generally speaking, the medical schools are inadequately equipped for teaching obstetrics, one only having an ideal clinic, and that one not Johns Hopkins. Many of the professors are poorly prepared for their duties and do not properly appreciate their obligations as teachers. Some admit they are not competent to perform the major obstetric operations, and consequently can be expected to do little more than train men-midwives. Many of them admit their students are not prepared to practice obstetrics on their graduation, nor do they learn to do so later. One-half the answers say that ordinary practitioners lose proportionately as many women from puerperal infection as do midwives, and over three-quarters say that more deaths occur from faulty operations than from infection in the hands of midwives. Reform is needed, and the following measures are, in his opinion, most important: A. Reduction in the number of medical schools, with adequate facilities for those surviving and higher preliminary education on the part of students. B. Insistence in university medical schools that the head of the department be a real professor whose prime object is the care of hospital patients, the proper training of assistants and students and advancement of knowledge rather than a prosperous medical practice. C. Recognition by medical faculties and hospitals that obstetrics is one of the fundamental branches of medicine, and that the obstetrician should be a scientific man with a broad grasp of his subject. D. Education of the general practitioner to realize that he is competent to conduct only normal cases of labor and that major obstetrics is major surgery, to be undertaken only by specially trained men in the control of abundant hospital facilities. E. The requirement by state examining boards that every applicant for license to practice shall show that he has had personal experience with at least ten obstetric cases under appropriate clinical conditions. F. Education of the laity that poorly trained doctors are dangerous and that most of the ills of women result from poor obstetrics, and that poor women in fairly well-conducted free hospitals usually receive better care than well-to-do women in their own homes; that the remedy lies in their hands, and that competent obstetricians will be forthcoming as soon as they are demanded. G. Extension of obstetric charities—free hospitals and outpatient services for the poor and proper semi-charity hospital accommodations for those in moderate circumstances. He would also advise a greater development of visiting obstetric nurses and helpers trained

to work under them and the gradual abolition of midwives in large cities and their replacement by obstetric charities. If midwives are to be educated it should be done properly and not in a makeshift way, and even then disappointment will probably follow.

TYPHOID FEVER.

C. BOLDUAN and W. C. NOBLE, New York (*Journal A. M. A.*, January 6), give an account of a rather extensive epidemic in the Bronx borough and three wards of the Borough of Manhattan. There were over 300 cases, more than the average number occurring within these restricted limits. An investigation traced the origin to a certain dairy in Camden, N. Y. The conditions of the dairy were exceptionally clean, but there had been an undue prevalence in that village of typhoid also traceable to this dairy, the owner of which had had typhoid in 1863 or 1864; and since that time there had been a number of cases in his family. The tests showed him to be a carrier, though he had not himself suffered in late years from any such disease. The authors call attention particularly to the fact that milk may be infected by a chronic carrier, even though he is exceptionally careful. The dairy was kept much better than the average, but the occurrence of repeated infection from this source showed the danger. The dairyman himself died of "heart disease" last September, and it will be interesting, they say, to study the further incidence of typhoid fever in the village, which will be the subject of a future paper.

ANTITYPHOID VACCINATION.

SURGEON J. M. PHALEN, U. S. A., New York (*Journal A. M. A.*, January 6), describes the experience so far with antityphoid inoculation and the methods in use in the United States Army. The vaccine employed is made by Dr. F. F. Russell in the laboratory of the Surgeon-General's office in Washington. The organism used is from an old culture that has ceased to be pathogenic and is sent out in sealed ampules containing 1 to 25 cc. after having been thoroughly tested for bacteria and by inoculation into guinea-pigs. The immunizing dose is given in three injections at intervals of ten days; the first of 0.5 cc., the second and third of 1 cc. each. The injection is given with an ordinary hypodermic syringe into the deltoid muscle near its insertion. The site may be sterilized in any way, but with the large numbers treated at once in the military service, it is customary to paint the skin with tincture of iodine before the operation and touch the needle wound with it afterward. The reaction is usually not severe, and is comparable with the lighter cases of vaccinia following smallpox vaccination. It should not be given to persons with any illness or to the aged and debilitated, and a case has been reported of latent tuberculosis incited by it. Russell estimates the percentage of very severe reactions at 0.1 per cent., and attributes them to the introduction of the vaccine into a large vein. At first a voluntary measure, typhoid immunization has been made compulsory in the United States Army for all officers and men not over 45 years of age who have not had an authenticated case of typhoid fever. About 60,000 men have completed the three inoculations. At the barracks where Dr. Phalen has been recently stationed, each recruit is vac-

inated against smallpox and given the first antityphoid inoculation on enlistment. At the time of the second inoculation many men are suffering from vaccinia, and the reactions are frequently more severe, though quite transient. With this rather unavoidable exception, the inoculations are not given to any one in any way out of health. Phalen gives a history of the use of antityphoid inoculation in armies, and says that nowhere do we get so convincing evidence as in our own Army experience. In the 60,000 men who have been inoculated, there have been but twelve cases of typhoid and no deaths, and the typhoid-rate is only one-sixth as great in the inoculated as in the uninoculated. One man in the Guantanamo Naval Station died five days after his first inoculation from a case of walking typhoid, but this is the only case of the death of an inoculated man from typhoid in the government service. Among the nearly 13,000 soldiers near San Antonio there was only one mild case of typhoid, while forty-nine cases with nineteen deaths occurred in San Antonio in the city population. As regards paratyphoids, these are presumably not affected by antityphoid inoculations, though clinically they are similar, and, if the proportion of paratyphoid cases is high, the results may be a little disappointing. Possibly a mixed typhoid and paratyphoid vaccine might be indicated. The duration of immunity is not yet settled, but Firth estimates it from British data at thirty months. Leishman thinks the reinoculation should be given after two years. In the United States Army, with its three-year enlistment period, the rule is for inoculation to be given at each enlistment. Further experience is needed as to this point. The treatment of actual typhoid by inoculation is still in the experimental stage, but the opinions deduced from experience are altogether favorable. It shortens the period of fever and total duration of the disease and markedly reduces complications and relapses. The mortality, as deduced from the reported cases available, is found by Phalen to be 4.9 per cent., and all agree that it does no harm, even where it does no good. The dosage is increasing and the results appear to be better. In the treatment, however, the vaccine has yet to definitely prove its full value.

KNEE-JOINT AMPUTATION.

C. E. PHILIPS, Ancon, Canal Zone (*Journal A. M. A.*, January 6), reviews the various methods advised and practiced for amputation of the knee-joint and points out their disadvantages. He describes a method of his own and illustrates it with cuts. It consists in brief in disarticulating tissues of the knee, leaving the patella attached to the anterior flap, sawing off its posterior surface and its sides with a bevel and fitting it into a notch between the condyles. The stump he says is very satisfactory. The patella forms its center and laterally the two condyles share their portion of the weight in such a manner that it is normally distributed as in the flexed knee, while the large-bearing surface formed by the tough skin taken from the anterior aspect of the knee can bear the full weight of the body without abrasion or discomfort. Other advantages are the broader end surface and enlargement furnished by the condyles which will retain an artificial leg from slipping, and another is the short flap which is sufficient to cover the stump made by forcibly drawing down and fixing the patella, bringing with it the skin, fascia and muscles which,

if allowed to retract, would fail to cover a still shorter stump. This method has the approval of one of the representatives of one of the largest artificial limb manufacturers, who declared it the best end-bearing stump he had ever seen.

NON-SPECIFIC WASSERMANN REACTION.

LEO NEWMARK, San Francisco (*Journal A. M. A.*, January 6), says, while observations tending to diminish the diagnostic value of the Wassermann test should be regarded with circumspection, perplexing cases will sometimes occur. In such the interpreter will have to choose between some error in the complicated test or the existence of occult syphilis, as it would seem rash to question the specific nature of the reaction. He reports two such cases, one of a woman, aged 53, who complained of headache and dizziness for several days and then had a temporary attack of aphasia. There was slight tenderness of the skull to pressure above the ear, but no papillitis could be observed. The Wassermann reaction was positive and she was put on specific treatment, but the attacks of dizziness and aphasia recurred and the tender spot on the head became more sensitive. By this time she showed the physician a tumor on the breast, which seemed probably cancerous and suggested cancer in the brain. In a few weeks, however, hemiplegia developed and choked disc appeared. The patient failed rapidly and died. The breast tumor was removed and the brain examined. Microscopic examination showed a carcinoma of the breast and a gliosarcoma in the brain occupying the surface to the full width of the second left convolution, invading the third, and on section showed penetration into the first temporal convolution. The hemiplegia was due to pressure on the internal capsule. There was no trace of brain syphilis. The second case was one with symptoms of compression of the spinal cord in a woman aged 45. Her husband admitted a chancre wart many years previous, which he had treated himself. The Wassermann was positive in spite of treatment with mercury and salvarsan. A laminectomy was performed and a tumor removed, and the symptoms largely disappeared. Examination of the blood at this time by four separate observers with the Wassermann test was negative. In still another case he is doubtful, but he has had no means of verifying his suspicions. It is extremely necessary, he says, that whatever uncertainties there are in the Wassermann method should be eliminated.

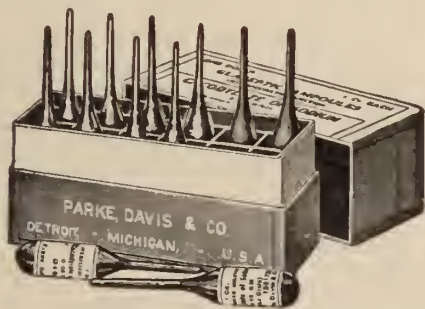
INTUSSUSCEPTION.

C. S. LAWRENCE, Winston-Salem, N. C. (*Journal A. M. A.*, January 6), publishes the history of a patient, a male, aged 22, who was subject to attacks of abdominal pain. His appendix had been removed at the age of 18, but without relief, and the attacks later increased in frequency. They were accompanied by nausea and vomiting, and in the attack reported there seemed to be obstruction, and the vomit is reported as being bad smelling. Operation was performed and an iliac intussusception with twisting on the mesenteric axis was found, the whole mass removed and the ends of the intestine connected with a Murphy button. The length of the section of intestine removed is not given. The recovery was fairly uneventful.

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1. Adrenalin Chloride Solution, R 1 (1:10,000).
1 Cc. ampoules.</p> <p>2. Adrenalin Chloride Solution, R 2 (1:1000).
1 Cc. ampoules.</p> <p>3. Caffeine and Sodium Benzoate, 0.5 Gm. (7½ grains): Equivalent to 0.25 Gm. (3¾ grains) Caffeine and an equal quantity of Sodium Benzoate. 2 Cc. ampoules.</p> <p>4. Camphor in Oil, 0.2 Gm. (3 grains). 2 Cc. ampoules.</p> | <p>No.
9. Iron Arsenite and Strychnine: Iron Arsenite with Ammonium Citrate, 0.065 Gm. (1 grain); Strychnine Nitrate, 0.001 Gm. (1-65 grain). 1 Cc. ampoules.</p> <p>10. Mercuric Iodide, Red, 1% (Aqueous): Mercuric Iodide, Red, 1% (1-6 grain); Soluble Salt of Para-amido-ethyl-benzoate (as a local anesthetic), 1% (1-6 grain); Potassium Iodide, 1% (1-6 grain); Distilled Water, q. s. 1 Cc. ampoules.</p> <p>12. Morphine and Atropine, R "A": Morphine Sulphate, 0.016 Gm. (¼ grain); Atropine Sulphate, 0.0006 Gm. (1-100 grain). 1 Cc. ampoules.</p> <p>13. Morphine and Atropine, R "B": Morphine Sulphate, 0.008 Gm. (½ grain); Atropine Sulphate, 0.0003 Gm. (1-200 grain). 1 Cc. ampoules.</p> <p>14. Morphine and Hyoscine: Morphine Hydrobromide, 0.01 Gm. (1-6 grain); Hyoscine Hydrobromide, true, 0.0004 Gm. (1-150 grain). 1 Cc. ampoules.</p> <p>15. Pilocarpine Nitrate, 0.02 Gm. (⅓ grain). 1 Cc. ampoules.</p> <p>16. Pituitrin. 1 Cc. ampoules.</p> <p>17. Quinine and Urea Hydrochloride, 1%. 5 Cc. ampoules.</p> <p>18. Quinine Dihydrochloride, 0.25 Gm. (3¾ grains). 1 Cc. ampoules.</p> <p>20. Sodium Cacodylate, ¾ Grain. 1 Cc. ampoules.</p> <p>21. Sodium Cacodylate, 2 Grains. 1 Cc. ampoules.</p> <p>22. Sodium Cacodylate, 3 Grains. 1 Cc. ampoules.</p> <p>23. Sodium Cacodylate, 7 Grains. 1½ Cc. ampoules.</p> <p>24. Strophanthone, Dilute: Strophanthone, 8 minims, diluted to 1 Cc. by normal saline solution. 1 Cc. ampoules.</p> |
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5. Codrenin, R "C": Adrenalin Chloride, 0.0001 Gm. (1:10,000); Cocaine Hydrochloride, 0.0025 Gm. (¼ of 1%). 1 Cc. ampoules.
Ergot Aseptic (equivalent to 30 grains Ergot). 1 Cc. ampoules.
6. Eudrenin, R "B": Adrenalin Chloride, 0.0001 Gm. (1:10,000); Beta Eucaine Hydrochloride, 0.0025 Gm. (¼ of 1%). 1 Cc. ampoules.
7. Iron Citrate (Green), 0.13 Gm. (2 grains): Iron and Ammonium Citrate (Green), 0.13 Gm. (2 grains); Quinine and Urea Hydrochloride (as a local anesthetic), 0.005 Gm. (½ of 1%). 1 Cc. ampoules.
8. Iron Arsenite, 0.065 Gm. (1 grain): Iron Arsenite with Ammonium Citrate. 1 Cc. ampoules.

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THERAPEUTIC NOTES.

A CHEAPER, YET SUPERIOR, SILVER SALT.—Among the disadvantages attaching to some of the newer silver salts, has been their cost. In SYRGOL, an oxyalbuminate of silver, the profession has a highly effective germicidal agent, especially adapted for use in gonorrhoea, and yet one whose cost is small. SYRGOL is destructive to gonococci in solutions as weak as one-fourth or one-half of one per cent. It is un-irritating and may be prescribed with every assurance that its action will be favorable. Before its introduction to the American profession, SYRGOL was subjected to the most searching tests in continental hospitals and clinics. Under its use, urethral discharge promptly moderates, the urine clears up, and complications need scarcely be reckoned with. Taking into consideration its undoubted merit as a gonococcicide and its small cost—since it is active in weak solutions—it may be said of SYRGOL that it has no superior for use in gonorrhoeal disease. It is to be hoped that the American profession will try it out thoroughly.

SYRGOL is prepared in the laboratory of the A. G. vorm. B. Siegfried, of Zofingen, Switzerland, and is being introduced into America by Mr. Julius Schmid, Astoria, New York, who will be glad to supply American physicians with a liberal quantity sufficient to test its merit. SYRGOL is carried in stock by all wholesale druggists.

RIDING HIGH IN THE PROFESSION'S FAVOR.—A calming agent that is riding high in the profession's favor is PASADYNE, or as it was formerly known, Daniel's Concentrated Tincture of Passiflora Incarnata.

For a third of a century Daniel's Passiflora enjoyed the most extensive employment as a calmative, and it was only to defend themselves from piratical firms, making spurious Passiflora preparations, that the distinctive name of PASADYNE was adopted.

PASADYNE is just exactly what Daniel's Passiflora Incarnata was for many years—the most effective and safest calming and soporific agent available. Particularly in the case of hysterical women is PASADYNE valuable, for it is free from disagreeable effects and no fear attaches that the formation of a habit will follow its use. It is unusually potent, and physicians employing it for the first time need have no hesitancy; they will be gratified with the results it will produce. A sample bottle will be furnished if application be made to the Laboratory of John B. Daniel, Atlanta, Ga.

THE ARREST OF CHRONIC BRONCHIAL AFFECTIONS.—The arrest of bronchial inflammations which have taken on a chronic character, and which are gradually stealing from the tissues their normal resistance, is a matter of large importance, particularly so when it is remembered that it is but a short drift from chronic bronchial disorders to tuberculosis.

The longer such states exist, the better is the soil prepared for a tuberculous infection. It is easier and a far better practice to overcome the bronchial condition, and thus prevent a graver process, than it would be to manage the latter once it seized upon the weakened tissues.

Owing to its large value as a tissue nutrient and promoter of bodily resistance, NUTROMUL (Brown's Cotton Seed Oil Emulsion), is being widely employed for the purpose of overcoming chronic bronchial conditions, and with most gratifying results. Under its use the harassing cough stops, the bronchial mucosa approaches normal, and the patient takes on weight and strength. Cotton-seed oil is proving its value as a nutrient and general reconstructive. The oil in NUTROMUL has been enhanced in therapeutic properties by the addition of the hypophosphites of lime, soda, and manganese. A sample bottle may be had by addressing a postal card to Nottoc Laboratory, Atlanta, Ga.

PREVALENT DISEASES.—Each change of season brings with it its diseases seemingly peculiar to the time.

Summer with its Intestinal Disorders, Sunburn, Insect Bites, Ivy Poisoning, etc.

Fall presents for the attention of the physician its Typhoid Cases, and Winter and early Spring its regular quota of Pneumonic, Bronchial, Throat and other chest conditions.

At this season, when Pneumonia and Bronchitis demand the call of the physician, literature presenting the experience of fellow practitioners, in the successful handling of these cases, would seem most apropos.

The *Bloodless Phlebotomist* for January reflects the experience of many physicians upon this timely subject.

Dr. Charles Buck of Cincinnati presents his experience in handling cases of Pneumonia, also relates some facts in the treatment of Lumbago, which might also be considered as an affliction prominently manifesting itself at this season.

"Broncho-Pneumonia" with supportive as well as local treatment in all its details, is the subject of the paper of F. A. Kautz, also of Cincinnati.

Dr. E. Clinton Murray, of Houston, Texas, relates his experience and treatment in a case of Pneumonia in an eighteen months old baby, and Dr. J. C. Klipping, of Independence, Kansas, presents a "Different Technique in Pneumonia," which is decidedly original. In abstract his method is to apply the local dressing in a manner which gives the intercostal muscles a chance to functionate without restriction from bandages. This symposium is closed with a paper from Dr. W. A. Radue, of Union Hill, N. J., upon "Acute Pleurisy and a Successful Abortive Treatment."

Besides the papers referred to, upon the subject of Chest and Throat diseases, much additional information is given. The one in particular we would have you note is the "Rational Influence of Hot Applications" by that well-known Therapist, Dr. Finley Ellingwood, of Chicago, Ill.

A postal card addressed to the *Bloodless Phlebotomist*, No. 57 Laight Street, New York, will bring you a copy of the January issue.


HOPE FOR THE TUBERCULOUS PATIENT.—When demonstrable lesions of tuberculosis show the steady progress being made by the infection, the physician owes it to his patient as well as to himself, to put at the unfortunate one's command whatever advantages may be open to him. Right living, sleeping in the open and the choice of a proper dietary, coupled with such drug therapy as may be indicated, offer

the most hope to the tubercular patient who is not in position to seek another climate and lung specialists. The indications for drugs are met by Cord. Ext. Ol. Morrhuæ Comp. (Hagee), for in it are properties well calculated to soothe the irritated mucosa, make the cough more bearable and maintain strength and resistance of the hard pressed tissues. Cord. Ext. Ol. Morrhuæ Comp. (Hagee) possesses the added advantage of not disturbing nutritional processes, as do so many agents of its class, rendering them a hindrance instead of an aid.

NOMA.—*Marcel Breuer (Arch. de Méd. des Enf., September, 1910)* has made a study of the specimen from a case of noma observed by him, in an attempt to find a specific cause of the disease. This is a disease that generally occurs in children who have been weakened by some infectious disease such as measles, scarlatina or whooping-cough. Strange to say, it is more frequent after measles than after the other diseases. This was the condition in the author's case. Here the gangrene involved both lips, the palate, and the nose, and ended in death. Autopsy showed many foci of gray hepatization in the lungs. Many attempts have been made to isolate a specific bacillus as the causative factor in this frightful disease, but without success. The streptococcus and staphylococcus are always present, but are not the true cause of this mixed infection.

Schimmelbusch, in 1889, found a large number of short rods, with round extremities, often in chains, and in twos, and sometimes prolonged, which stained with the Gram stain. They were easily cultivated on gelatin and developed colonies. Inoculation into animals caused abscesses, but never necrosis. In the author's case similar rods were found in the gangrenous tissue, but never in the blood of the patient, and tubes inoculated from this blood remained absolutely sterile. The author does not believe that this is the specific agent of the disease.—*American Journal of Obstetrics.*

After the ligation or occlusion of large veins, the important means essential to the re-establishment of the collateral circulation is the preservation in its best possible vigor of the arterial circulation.—*Ohio State Med. Journal.*



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THE PREVENTION OF INSANITY: HYGIENE OF THE MIND.—A. J. Rosanoff, King's Park, N. Y., describes the modern viewpoint with reference to the etiology of insanity and its prevention. The essential causes are heredity, alcoholism, syphilis, and injuries to the head. The incidental or contributing causes are all sorts of strain upon the physical and mental systems. The author gives the probabilities for the production of insanity or its avoidance in various degrees of heredity in the parents and grandparents. Both parents being normal and from normal ancestors, all children should be normal and not capable of transmitting any hereditary taint. Alcoholism is the cause of insanity in about 30 per cent. of all male admissions to insane hospitals. Syphilis causes insanity in from 10 to 35 per cent. of admissions. Head injuries cause neurasthenoid states or traumatic dementia. As to prevention, heredity may be controlled by education and by sterilization of defectives and criminals. Alcoholism may be controlled by regulation of the traffic in this commodity. The Gothenberg system seems the best as yet found. It allows societies to obtain liquor licenses with the view of discouraging the use of stimulants and organizes clubs and provides good saloons for the lower classes. Local option and no-license assist in lessening crime but not insanity. The prevention of syphilis is allied with the prevention of prostitution. Measures for this have been found far from satisfactory. Compulsory reporting of syphilis with segregation when necessary would help to prevent the spread of the disease. By the use of salvarsan the infectious period will be reduced from three or more years to as many months or weeks. Syphilitics should be advised not to marry without at least three years of thorough treatment. The wife when pregnant should be treated. Education of the neuropathic individual along preventive lines will be of value.—*Medical Record*.

Before the closing session of the annual conference of the sanitary officers of New York in that city October 27th, Dr. Simon Flexner, director of Rockefeller Institute for Medical Research, declared that, as the result of many experiments with serum, he was able to say that an epidemic of spinal meningitis could now be entirely controlled. He declared:

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It has taken a large sum of money and a long time to perfect this cure. This is the first time I have announced it, as only very recently have I demonstrated to my own satisfaction that the serum I have prepared will do what I claim for it. Influenzal meningitis in the child, which has caused so many deaths and which spreads so rapidly, will, with the application of this new form of treatment that we have discovered, be not one-tenth as dangerous as it was before the discovery of this new serum and method of treating such a disease.

The serum, he explained, they had never been able to get into the blood of a patient infected with meningitis. All experiments were tried to get the serum into the blood so that it could overcome the bacilli of the disease. At last the injection of the serum into the cerebro-spinal membrane was tried and the experiment proved wonderfully successful.—*The Medical World*.

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The superiority of the preparation over extemporaneously prepared cough-allaying agents and its numerous imitations and the manner in which it is made available specifically to the medical practitioner has earned for it the admiration of the best element of the profession.

By reason of its marked analgesic, antispasmodic, expectorant and inflammation-allaying properties, Glyco-Heroin (Smith) is of exceptional value in the treatment of

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CATALOGUES

The Medical Department of the University of Vermont will appreciate it very much if any of the Alumni can furnish catalogues of the Medical Department of the following dates to complete the files, 1857-66-7-8-9-71 and 73. These may be sent to the Dean.

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"How will you have your eggs?" asked the girl behind the lunch counter.

"With as brief an interval of time," answered the absent-minded professor, "as possible intervening between the deposition of the oval spheroid in the nidificated receptacle by the female representative of the common or barnyard variety of domestic fowl and the subsequent appearance of the same in the marts of commerce where congregate the—"

"All right," interrupted the girl, "I think I understand. Scramble three!"—*The Medical Brief.*

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is especially valuable when there is torpidity of the bowels or intestinal sluggishness arising from organic derangement of the liver and kidneys. It is the best agent for the relief of that form of costiveness that is ushered in by an attack of colic and indigestion, and not only clears away the effete and irritating matter in the alimentary tract but eliminates the semi-inspissated bile that too frequently induces the so-called "bilious" condition; at the same time an abundant secretion of normal bile is assured, thereby demonstrating its value as a liver stimulant and true cholagogue.

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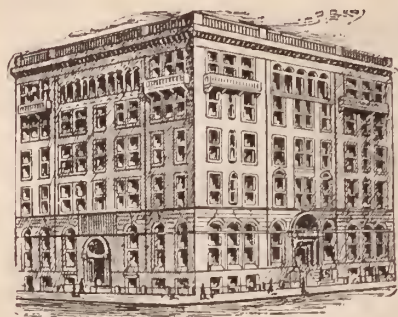
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Vol. XVIII, No. 3.

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Probably the best method of putting on is for the nurse to grasp the inside of the glove (gauntlet turned back) with both hands, holding palm surface of glove down and fingers inward, while the surgeon, with hands under water, introduces his hand.

Never try to remove gloves by pulling at the fingers. Grasp the top of the gauntlet and pull the glove inside out. Submerging the gloved hand in water or pouring water into the gauntlet will cause the glove to slip off easily."—*Exchange*.

CREMATION IN PRUSSIA.—It is probable this mode of disposing of the dead, which has pre-

viously been bitterly opposed by the Clerical party as being an un-Christian practice, will soon be legalized in Prussia, the Diet having recently passed the second reading of the government's bill in its behalf. This attitude of the government regarding cremation shows a complete change, the suggestion of it having heretofore been repeatedly opposed by those in power.—*The Medical Times*.

Dr. Joseph S. Neff, Philadelphia's progressive director of public health and charities, in his weekly bulletin, made a strong plea for the introduction in the public schools of special courses in hygiene, to instruct children in the facts of life and their sex responsibilities. "Penitentiaries, insane asylums, institutions for the blind and homes for the feeble-minded would not contain 25 per cent. of their population had the present adult generation been properly instructed in their youth in social hygiene."—*Medical World*.

The treatment of varicose veins is not completed until the surgeon has discovered the constitutional causative factor and advised its elimination.

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Vermont Medical Monthly.

VOL. XVIII.

MARCH 15, 1912.

NUMBER 3.

ORIGINAL ARTICLES.

A TREATMENT FOR ALCOHOLICS AND DRUG HABITUES.

BY

WATSON L. WASSON, M. D.,

Senior Physician and Pathologist Vermont State Hospital for Insane, Professor Mental Diseases University Vermont Medical College.

In November, 1909, there appeared in the *Journal of the American Medical Association* an article written by Dr. Lambert of New York. In this article he describes a treatment for drug habitues and alcoholics, a method which had been devised by a Mr. Charles E. Towne and which had been used by Mr. Towne, both in this country and in China, with agreeable results. Through the efforts of Dr. Lambert, Mr. Towne consented to submit to the medical profession the details of his treatment.

Naturally, there are those of little faith, honestly so, those who, before being convinced, have to see results and who, even then, are not quite ready to believe their senses. A life long habit of scepticism is not easily overturned by truth, even the most obvious. Accordingly, Dr. Lambert's first exposition was followed in a short time by several adverse criticisms, which appeared in various medical journals.

I have now reached a period in life where I am immediately suspicious when I hear a criticism that is at all rancorous. Either such a critic is a crank or he is jealous of some pet product of his own devising. In the one case, the criticism offers no substitute, has nothing to give in return except a page or two of condemnatory words; in the other case, after a more or less vigorous prefatory denunciation, there comes forth the only efficacious, true treatment. When a departure in medical science is sufficiently successful in its results to win attention, such as above described, I begin to think that "there is something in it," and to be desirous of witnessing for myself, some of its beneficial effects, especially if the departure is along a line in which I may safely experiment.

After using this treatment upon a number of cases, I can say with confidence that it "does the

work." It does accomplish all that is claimed for it. It cannot remake a man or a woman, but it can and does remove the craving, which holds these victims to their habits. As a rule, the most confirmed drug-taker can be divorced from all desire for drugs, within a week's time, although I have found, rarely, a case that, owing to the patient's weakened condition, requires the treatment to be administered in installments, so to speak. Since I have been most anxious to be impartial and unprejudiced, I have given a fair trial to one of the other "more scientific methods," but in my hands at least, this treatment has not been so efficacious as has that of Dr. Lambert.

A not unintelligent member of the medical profession, after seeing the effects of this treatment upon a number of morphine and alcoholic cases, remarked that the results were to him as nearly miraculous as anything could be in medicine. Wonderful indeed is the transformation that takes place within three or four days. A shaking, tottering, sniffling object, whose only thought is for opiates, becomes a being content and peaceful and *with no desire for drugs*. This change takes place with a minimum of discomfort to the patient.

The special mixture, which Dr. Lambert calls the "specific," is as follows:

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Fl. Ext. Zanthoxylin 1 pt.

The cathartics used—and these form an important part of the treatment—are the compound cathartic pill U. S. P., the vegetable cathartic pill, to each pill of which is added 1/25 minim croton oil. We also use blue mass five grain pills. All these should be fresh and administered in capsules.

The technique of the treatment is as follows. After the amount of opiate, which the patient consumes daily and on which he can get along comfortably, has been ascertained by several days' observation, he is given four compound cathartic pills and, as soon as his bowels move, he is placed in bed and the specific is commenced at four drops. This is given every hour throughout the treatment and the dose is increased by two drops every six hours. If, however, symp-

toms of belladonna poisoning supervene, such as widely dilated pupils, incisive talk or visual hallucinations, it is necessary to suspend treatment for the time being and to wait until these symptoms subside. At the beginning of the treatment, two-thirds the total daily dose of opiate is given in three divided doses at half hour intervals. Ten hours after the first dose of the specific, four compound cathartics and five grains of blue mass are administered and the same dose is repeated six hours later. If the bowels do not move in the course of three hours, a dose of salts or an ox gall enema is given. After the bowels have moved, one-half the original dose of opiate is given and ten hours later, four compound cathartics and five grains of blue mass are administered and, again, six hours later, the same dose is repeated. Following this, if the stools begin to assume a liquid, frothy, slimy appearance, one to two ounces of castor oil along with four to six grains of codeine are administered. If a characteristic greenish, liquid, slimy stool appears, all treatment may be suspended. If the characteristic stool does not appear, ten hours and sixteen hours later, four compound cathartics and five grains of blue mass are given, to be followed in three hours by the castor oil and codeine. In other words, the treatment is continued until the greenish, liquid slimy stool appears. The specific should not be carried higher than fourteen to sixteen drops. In nearly all cases it is necessary also to administer strychnine, grains $1/30$ or $1/60$, every six hours to combat any possible weakness of the heart.

In alcoholics the same method is pursued, except that the treatment, as a rule, need not be continued for so long a time as in the drug cases, nor is it necessary, generally, to give so large doses of the cathartics.

It should not be understood that this treatment works any fundamental change in an individual's physical being or in his character. It simply restores him once more to himself, sets him on his normal plane, so to speak. The future is of his own making. If he is mentally so constituted that he has no ambition or desire to live in a higher plane of life, so surely will he return later, in all probability, to his former vicious habits. Manifestly, in cases of true dipsomania, there would be no benefit from such a course of treatment. Such individuals are subjects of periodic insanity, which takes the form

of an inordinate craving for alcoholics. In the light of our present knowledge, isolation from any possibility of obtaining alcoholics is the only solution of the problem of the true dipsomaniac.

In the vast majority of drug and alcoholic cases, however, there is a desire to overcome the habit. In many such cases, as our results show, this particular treatment has been of much benefit.

Since December, 1909, shortly after reading Dr. Lambert's article, I have employed his method of treatment and have, in all, the results of twenty-five cases from which to draw conclusions as to its effects. Many of these cases are still in the hospital and thus inferences as to what permanent benefit may or may not accrue to them would be premature. There are, however, a number of cases who have been discharged. In the majority of these cases, from time to time, we have received word as to their conduct. In the main they have done well and have not shown any disposition to relapse.

This treatment cannot be successfully administered at home. The patients need the restraint and custodial care such as may be found in some institution. Furthermore a number of months' sojourn in such an institution is also a necessary aftermath. Without this, no permanent benefit may be expected in the ordinary subject.

THE DISEASE OF CRIMINALITY.*

BY

G. G. MARSHALL, M. D.

That there is a specific disease that can properly be called by the title of this paper, may be disputed from a strictly medical or scientific point of view, but that the criminal exists, and that as a class, he has many distinct physical as well as moral and intellectual characteristics, will hardly be denied.

A criminal may be said to be a person whose physical deformity, mental capacity or moral depravity is such that they are unable or unwilling, to conform to the rules or laws of society! However, not all law-breakers can be classed as criminals.

Lombroso affirms that the criminal class are characterized by distinct physical peculiarities, such as having too large or too small a head,

*Read at the annual meeting of the Rutland Co. Medical and Surgical Society.

eyes too near or abnormally far apart, ears with peculiar defects, asymmetry of the face and head, the latter containing a brain defective in structure and function.

Mr. M. Boyse says, extensive research has demonstrated that a large proportion of criminals possess peculiar physical, as well as moral and mental characteristics.

Supt. Frank Moore of the New Jersey Reformatory says, "It has been discovered that the mental age of almost one-half the prisoners of the New Jersey Reformatory was below 12 years, while in one case it was less than five years. In other words, 46% of those received at this reformatory had minds which in knowledge and ability were only equal to the mind of a child from five to 12 years old.

Z. R. Brockway of Elmira Reformatory after a careful observation of over fifty thousand criminals, says, "They are a grade of inferiors in physical, mental and moral development; indolent, unable to compete with normal laborers, and perhaps as unable as they are unwilling to contend with vice and temptation."

Ferri, an Italian student of Penology says, "Crime is a product of a particular organic or physical condition."

Mr. McKim says, "Defective conduct has its root in defective brain structure," he continues, "upon bad heredity, disease and degeneracy are in a great measure dependent. These are the roots from which spring abnormal tendencies."

The Anthropometric Committee of the British Association reports that the Industrial School children are 7 inches shorter and 24 pounds lighter than the boys of the same age in the general schools.

Dr. Giddings says, before many years we shall discover that at least 90% of all human actions are involuntary responses to external stimuli.

Mandsley writes in "Responsibility in Mental Diseases": "There is nothing supernatural in the impulse to do right or wrong, both come from inheritance or education, and science can no more rest content by explaining one as the grace of heaven and the other, to the malice of the devil, no more than it can explain insanity as being the possession of the devil."

These testimonies are sufficient to show that there is a close relation between physical defects and a criminal disposition. In short, crime may be said to be the normal function of an abnormal

mind. But why should we interest ourselves about the criminal?

One very good and practical reason is the great cost put upon society to protect itself from the criminal.

Although the criminal class constitute less than 2% of the total population, the tax paid annually in the U. S. as given by Dr. Eugene Smith, a distinguished lawyer and penologist, amounts to the enormous sum of over 200 million dollars, and twice this sum in consequent damages. Nor does this sum include private detectives and police.

This sum amounts to over \$6.00 annually for every citizen in the U. S. To arrest and convict some single criminals it cost the government \$100,000 and more in some instances.

Boston alone in 1898 paid \$3,037,365 on its convicts and throughout the state of Massachusetts in the same year over 6½ million dollars; 21% of the state tax, was spent in protecting society from its criminals.

Warren F. Spaulding, secretary of Massachusetts Prison Association says, the first cost of the prisons and yards in the U. S. exceeds 500 million dollars and that more than 1/10 of all the taxes raised in this country are spent on the criminal.

He further states that it costs annually 100 million dollars to rearrest the recidivists.

Let us return to a closer study of these undesirable citizens who are costing us so much, and see where they come from, how they are produced and learn if this vast sum expended on them is yielding the results it should.

Criminals are divided by some penologists into five classes:

- 1st. Instinctive or born criminal.
- 2d. Habitual criminal.
- 3d. Single offender.
- 4th. Presumptive criminal.
- 5th. Criminal madman.

The fourth class, as the name implies are not actual criminals. The fifth class, when they have been properly recognized, are no longer regarded or treated as criminals, but are placed in asylums *permanently*, or until *cured* of their malady.

There are two main causes in the production of the criminal; the first pertains to the personality or individuality of the criminal; and the second to his circumstances commonly called environments.

Of all the causes tending to produce the criminal character, one of the greatest and certainly to the medical profession, the most important, is heredity.

Parents who are criminals themselves rearing their progeny in the environments of all that is bad, can only produce children of criminal instincts.

We know intellectual characteristics are strongly inherited, and we need expect no exception in the criminal.

Drahmus says, "A great cause of crime is the promulgation of children from defective and criminal parents, fostered in criminal surroundings."

As an illustration of an extreme case of evil heredity the Jukes family may be sighted.

Dugdale studied this family, which originated in a wild section of New York state in about 1720. He says from this family alone there was a loss of 1¼ million dollars in the following 75 years, by maintaining them in prisons, asylums and pauper institutions. The continued loss and degradation that this bad strain will produce can not be estimated.

Much has been said and written of alcohol as a cause of crime. It is probable that where there is not a bad heredity or weakened mental and moral equilibrium, alcohol has little influence in producing crime. But when there is a weakened nervous system, not only are stimulants more freely indulged in, but its use is often directly traceable to crime.

Children of alcoholic parents are often endowed with an unstable nervous system, being easily led into excesses of all kinds.

Dr. Harris, secretary New York Prison Association, asserts that 85% of all convicts in the state of New York have in some large degree been prepared or enticed to do criminal acts because of the physical and distracting effects produced by alcohol.

Dr. Williams in the December McClure Magazine of 1908 quotes Lord Chief Justice of England as saying: "That if sifted, 9/10 of the crime of England and Wales could be traced to drink."

The Massachusetts Bureau of Labor reports that the condition which induced the crime in Massachusetts in 84% of the cases was drink.

Reports from various prisons and charitable institutions estimate ⅔ of the crime and pauper-

ism and ½ of the dependent children in this country owe their condition to the use of alcohol.

Hale's Police and Prisoners Cyclopedic of 1893 says, "Drunkenness and prostitutism are not only crimes in themselves, but are a prolific source of ¾ of the burden of crime borne by society."

Parson says, "Is not the father of criminals, who are such by reason of his debauch, as much a menace to society by reason of his potential criminality as any of his depraved progeny?"

Among environments are defective education and training for useful occupations.

The child reared in poverty and vicious home influences, with scant or no school training, has but one way open to him.

With the mature or born criminal, environment only offers an opportunity for he has no other inclination, but on the presumptive and occasional criminal it plays an important part.

Physical defects in school children often lead to truancy. As one writer has said: "Toothache was one of the most frequent causes of truancy and from truancy to vagrancy is but a step."

The retarding influence of eye strain and of diseased tonsils and adenoids, on children, rendering them unable to equip for useful occupations, are too familiar to need rehearsing here.

Dr. Gould of Philadelphia says: "The 'nervous' 'backward,' 'stupid' and unhealthy pupil is usually so from eye strain. The state has no right to demand that every child should attend school without also stipulating that its eyes shall be made capable of study."

I think it well demonstrated that the criminal is not a normal person and whatever the mode of treatment or punishment meted out to him, there is little gained in administering to him so much punishment for so much measured wrong, like Shylock's pound of flesh for the bond.

Many of our criminal laws exist because they are on our statute books and not because they are meeting the needs of society as the science of penology teaches us to-day.

Presumptive juvenile criminals (really not criminals) constitute an insignificant proportion to all other children, yet Dr. Drahmus says in "The Criminal" "from this source do we get 75½ of all our criminals."

Eugene Smith in "Cost of Crime," says, "If this source of crime could be eliminated it would

mean a pecuniary annual saving of 450 million dollars."

The work of educating and reforming this juvenile element, proportionately small, is easy, in comparison to the cost of protecting society against them as future criminals.

When children are not or cannot be properly cared for by parents or guardians, it is the right and duty of the state to step in and protect itself from inevitable criminals.

Schools should receive greater medical oversight to assist in classifying the children according to their physical as well as mental abilities, providing skilled treatment when it is needed.

Many private and charitable societies are doing noble work in finding homes for deserted children, but a greater and more universal system carried out by the state is needed. The crime problem is largely the child problem. What will keep a boy decent and law abiding, will reduce adult criminals.

Under the prophylactic treatment we may briefly refer to the juvenile courts which have attracted no little interest in recent years, notably the one in Denver presided over by Judge Ben B. Lindsley. Of the results of Judge Lindsley's juvenile court, he says: "So far as he can judge after four years' experience, success was attained in 95% of the cases brought before him. Here every effort is made to put the child on his honor. Parents or guardians of the delinquents are summarily dealt with when possible."

The debasing influence of branding children under 16 years as criminals cannot be overestimated. Rather than imprison them, require that restitution be made to the injured party, and if the child cannot do it, then require restitution of the parents or guardians.

The official report for the year 1890 states that 56% of all our criminals in prisons are of foreign birth. Many of them, Allison states, "are actually assisted in escaping from their homeland, where they are known to be criminals."

More efficient emigration laws surely should be enacted. If 85% of all crimes can be traced to alcohol, directly or indirectly, as has been said, surely there can be no *excuse* for the *medical profession* to be *silent* on this *unpopular subject*.

Neither should we forget the growing evil of the indulgence in other narcotics and demand immediate steps to stop, so far as possible this unmitigated evil.

The influence of our environments on the criminal will not be quickly changed and the individual must be equipped and trained to successfully withstand the hardships of his surroundings.

Before taking up the subject of treating the confirmed criminal it may be well to review in a few words our present methods and some of their defects.

True we have made much progress since 1769 when, Blackstone tells us that, "among the variety of actions which men are daily liable to commit, no less than one hundred and sixty have been declared by act of Parliament to be felonies," (punishable by death). The death penalty was carried out by hanging, burning or the axe and, during a few years of Henry VIII's reign, boiling to death was made lawful for poisoning. Burning was the punishment for heresy and for petty treason. Those who refused to plead were, until 1772, pressed, i. e., heavy weights were placed on their prostrate bodies till they gave in or died. Mutilations were sometimes inflicted with great cruelty. The accused's ears were nailed to the pillory so that the movements of the body tore them off. William Prynne lost his ears by sentence of the Star Chamber for seditious publications. As late as the 19th century a prominent English writer on criminal law expressed himself as follows: "I think it highly desirable that criminals should be hated, that punishment inflicted upon them should be so contrived as to give expression to that hatred."

Our present theory is based on the ground that for a given crime prescribed by the statutes, certain equivalent punishment shall be inflicted, the law however must wait until the deed is done, the thief by instinct and training has stolen, the irresponsible has committed an irreparable offence, then when the deed is done, the law moves with stately dignity to find the criminal, *who should long ago have been apprehended, and trained to a more useful life, or if found incorrigible, placed in the safe guardianship of the state.*

Another fundamental error in our present code of laws is that having found the criminal he is tried wholly on his offence and sentenced accordingly, to prison if it be a prison offence, for a given term. This might be all right if a given punishment cured a given criminal instinct, and the judge knew this was the only

criminal instinct of which the criminal stood in need of a cure, but of these two provisions the judge or jury have little knowledge and no jurisdiction.*

The question of guilt should be secondary to the question of criminality of character; not wholly what has he done, but as well, what will he do? For this assertion some would ask if we would be prophets as well. Indeed some one must determine this question before society can be safe, and who should be better fitted in determining this point than the medical man properly trained?

But what of our prisons as they are to-day and what purpose do they serve?

(1) They should serve the purpose of protecting society, by having a wholesome restraining influence on the wavering weak.

(2) By permanently restraining the incorrigible.

(3) By reforming those capable of being reformed.

Quoting Warren F. Spaulding in the "Cost of Crime," he says, "If the penitentiary prisoner were to remain in prison for life, the community would have little reason to inquire as to his treatment, but most of them are to return to the community within a few years; about 32,000 are committed annually to our state and national prisons, and nearly the same number are annually released. About 100 a day come pouring back from the prisons, bad men, made worse by prison confinement, for no intelligent effort has been made at reforming them, and of course none are reformed. The community has been protected from the individual only while he has remained in prison.

Of the prison, Drahmus says, "The prison from every point of view is the chief ostensible promoter of every ill it essays to cure. It succeeds in turning out more dried results in the shape of confirmed criminals, hardened to the contemplation of theoretic vice in all its forms and degrees ready to put their knowledge into practice, than any other agency within the range of experience, or devised by the folly of man."

The fate of the wrongly imprisoned person is practically sealed when the prison door closes behind him. The youth sentenced because of the pent-up exuberance, working in a misdirected way, comes out fully equipped and trained for a

*The judge can take into account the previous record of the criminal in pronouncing his judgment.

criminal career. It has been *demonstrated beyond a contradiction* that the usual penal incarceration confirms and renders more chronic the criminal character. Ninety percent of convicts discharged from prisons return to criminal lives. Ellis says, "The prison is a sewer throwing out into society a continuous flood of purulence, the germs of physiological and moral contagion."

Warren F. Spaulding, secretary Massachusetts Prison Association, says: "The promiscuous association of persons awaiting trial has no rival as a crime producer."

Clement the XV in 1707 had placed over the prison of Rome the following motto: "Clement the XV, Supreme Pontiff, reared this prison for the reformation and education of criminal youths to the end that those who when idle had been injurious to the state might, when better instructed and trained, become useful to it."

In the U. S. to Z. R. Rockway, belongs the credit of demonstrating that reformation is possible and practical. He has stated that 83% are cured of their moral depravity, and go out of Elmira Reformatory trained for some one of the trades, cured of their criminal tendency.

This may be a larger percentage than would be generally admitted, but others having charge of reform institutions in Massachusetts and Illinois give a similar percentage of cures.

In these institutions the prisoners are carefully graded and classified, assisted by competent medical attendance and individual training and treatment is given. No one goes out without knowing where he is going to work, and supervision over him is continued for a year before he is released from probation.

But not all criminals are reformable. Dr. McKim writes, "Towards softening the flint-like obduracy of the moral imbecile all remedies remain unavailing, we may in some measure restrain, but never reform him. The moral sense like every other mental capacity requires a fitting base of brain structure, and that if it never existed or has been destroyed by disease or injury, a moral sense is impossible." All agree that reformation is seldom experienced excepting in the young. The ages of those admitted at the Elmira Reformatory are between 16 and 30 years.

Dr. Drahmus says, "50% of criminals in prisons are recidivists. These are the professional criminals from which society suffers the

most. Many estimate that recidivists commit $\frac{2}{3}$ of all the crimes. Not infrequently has a criminal been convicted as many as 50 times. One-half of all prisoners in Massachusetts in 1887 had been committed before, and 36% of this $\frac{1}{2}$ had been convicted from five to fifty times each.

Moreover these are the educators and inspirators of the youthful class. These recidivists are possible only by our defective laws, many of them should never have been sent to prison. They should be kept at work under a probation officer, outside of prison walls and its evil influences, but such as should be sent to prison for the safety of society *should stay in prison so long as they would be dangerous when released.*

They must be cured of their moral depravity and taught how to earn an honest living before being released.

The indeterminate sentence should be substituted in place of the time sentence, for who can tell when they will be cured? To determine who are unsafe or when one that has been adjudged unsafe, is cured, will call for a high grade of skill and honor, and here again, who shall be better fitted than our profession?

Our present system of treating the penniless drunkard by a fine of \$5.00 and costs or an alternate sentence of sixty days in the work house, associating with crafty criminals could hardly be made worse.

Drunkards should be recognized as diseased persons and given a prolonged sentence of out door service where they could be built up and protected from temptation and required to work for pay to support the children and mother at home, and at the same time receive such medical attention as their conditions require.

What applies to drunkards will apply in general to the prostitute.

The more the subject of criminology is studied the more one sees the need of greater attention being given to the laws of heredity.

The child has a right to be born free from hereditary doom, and it behooves our fraternity to awaken the conscience of the people to this fact.

The weakling and vicious alike should be given humane treatment and prevented from doing harm to themselves or to others, but equally important is it *that they are not allowed to reproduce their kind, or to repeat their offences.*

The marriage license should not be granted to

those whose physical or hereditary endowments must doom their children before they are born.

The sterilization of the degenerates and vicious criminals, as is done at present in some states, would be a humane act for future generations.

Our conclusions then are these:

About 70% of criminals are so by instinct, commonly called born criminals, many of these possessing physical as well as moral defects.

That many children become criminals, from lack of proper education, training and home influences. That 56% of convicts in prisons are of foreign birth.

That the born or confirmed criminal is not reformable, but many juvenile criminals are. That alcohol and narcotics are close allies of crime.

That the term sentence is unscientific and does not protect society. That the question of guilt is often of less importance than the question of criminal character.

That reproduction of children by degenerates and the incorrigible should be prohibited.

THE CELL, ITS RELATION TO PHARMACODYNAMICS.*

BY

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ITS HISTORY.

It is to the botanists of this world that we must give credit for the discovery of that minute structure of living matter, upon which all life, either animal or vegetable, depends, the cell.

During the latter part of the seventeenth century, Malpighi and Grew, while examining the structure of vegetable life, discovered that it was composed of small spaces and that these were filled with a fluid. They gave the name of "cella" to these spaces, it being the Latin word for cavity or space.

In 1830, Purkinje, Valentin and Henle demonstrated that animal tissue was composed of units similar to those found in plant life.

In 1860, Shultze came forward with his "protoplasmic theory" and demonstrated that the cell

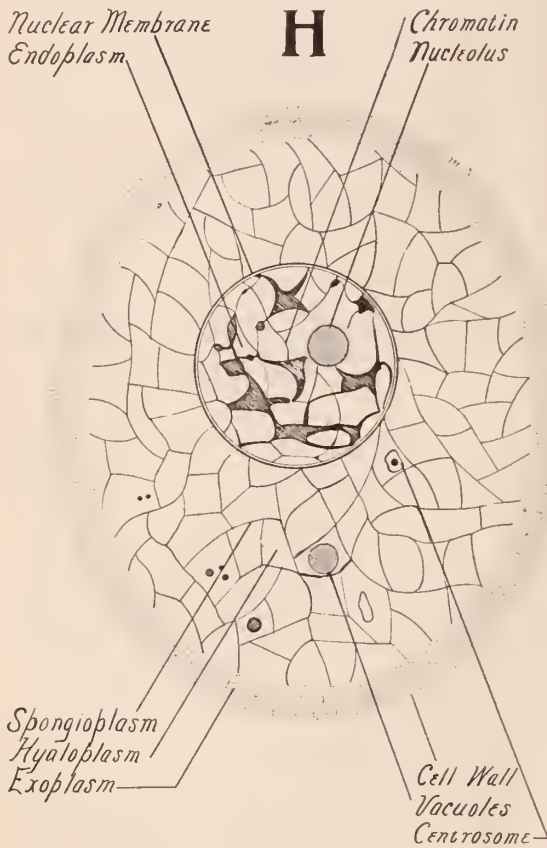
*Read before the Burlington and Chittenden County Clinical Society, Feb. 29, 1912.

was not a cavity or space, and that it was not filled with a liquid as was claimed by Purkinje, but filled with protoplasm, endowed with the attributes of life. Therefore the term "cell" of the early botanists is a misnomer, but is retained in our vocabulary and will remain.

The great importance of this discovery cannot be conceived, no unit can be compared with it, for upon it depends all animal and vegetable life without which there would be no existence.

BASIS OF MEDICAL SCIENCE.

Since superstition and empiricism have given way to rationalism, we find art displaced by



A HISTOLOGIC CELL.

science and the cell the foundation of each of the medical sciences of to-day.

Thus we find anatomy based upon the histology of the cell, physiology upon the functional activity of the cell, biologic chemistry upon the chemical reactions taking place within the cell, surgery dependent upon cell division, practice upon the natural power of the cell to

overcome disease, obstetrics upon the union of two cells, pathology upon the abnormal changes in the cell produced by disease, and lastly, pharmacology, based upon the changes in the functional activity of the cell produced by drugs.

It is entirely fitting that we pause, before taking up those changes that take place in the cell as a result of drugs, to discuss, *very briefly*, the histology, the chemistry and the physiology of a typical animal cell.

ITS HISTOLOGY.

The cell is a spherical mass of soft, viscid protoplasm, containing a nucleus, a nucleolus and a centrosome, surrounding each is a specialized form of protoplasm that is used for a boundary wall. This wall is not a true membrane, but only a specialized structure, each varying the one from the other histologically and chemically.

The nucleus is made up of nucleoplasm chromatin knots and cords, linen threads and the nucleolus.

The cell body, made up of spongioplasm, hyaloplasm, vacuoles and a centrosome.

ITS CHEMISTRY.

The nucleus is composed of nucleoproteins, water, phosphorus and a specialized form of organic iron known as "masked iron," the iron being so united that, during the process of ionization, no free Fe ions are disassociated and which requires further disassociation before free Fe ions are liberated.

The nuclear limiting wall is constructed of nucleoproteins, while the body of the cell contains proteins, carbohydrates, fats, water, sulphur, iron, chlorophyl, and ferments, together with the salts of potassium, sodium and calcium, namely the sulphates, chlorides and phosphates.

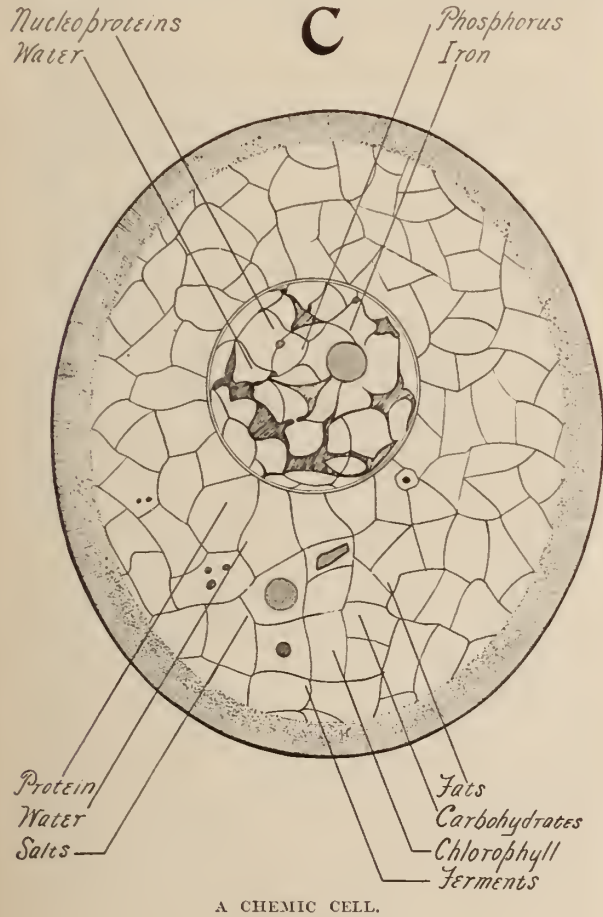
Just what chemical changes, normally are taking place within the cell, are not definitely settled. It is true that biologic chemists have made rapid advance along this line and we are reasonably certain that the chemic changes taking place are not dissimilar from those in our laboratories, namely decompositions, reductions, oxidations and synthesis. They go a step farther and say what some of these substances are that are formed chemically within the cell and are eliminated as waste products of the cell. But there is a realm of wealth yet to be discovered

by the biologic chemist before it can be thoroughly understood.

ITS PHYSIOLOGY.

To the nucleus of the cell is given the distinction of having the highest functions within the cell namely, reproduction and regeneration.

The nucleus has complete charge of the anabolic and catabolic processes taking place within the cell and, according to Herter, the iron and phosphorus present within the nucleus are responsible for the oxidative processes taking place and a "lessening of the iron is attended



A CHEMIC CELL.

by a diminution in the intensity of these processes."

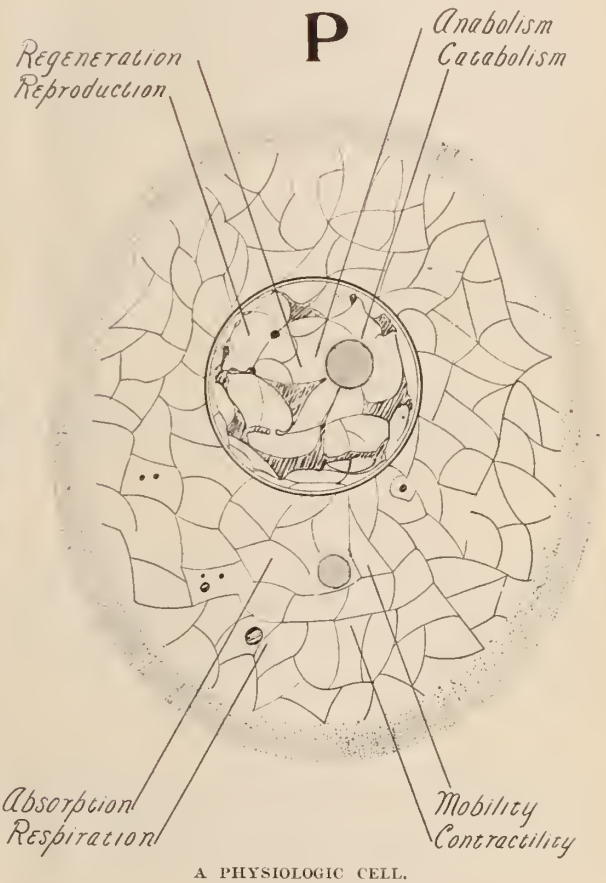
The nucleolus may be considered as a store house for material that will ultimately be utilized in the production of chromatin during the process of regeneration and reproduction.

The cell body has the power of absorption, respiration, mobility and contractility.

ITS PROPERTIES.

Having thus a cell, histologically, chemically and physiologically perfect, what next must be required to set its minute structure in operation, elaborating chemical compounds, which result in functional activity? The answer to this question would be, stimuli.

Irritability is that property of the cell whereby a response is obtained from external stimuli. The stimuli capable of producing a response are innumerable. They may be classed as mechanical, electrical, chemical and thermal. Time will not permit the discussion of these various forms



A PHYSIOLOGIC CELL.

of stimuli. It is a proven fact that the protoplasm of the cell is so influenced by these, that functional activity results.

LIFE.

After discussing the cell from the various view points, is it not natural for us to ask ourselves, what is life? In answer to this ques-

tion, man would naturally think of the body, its organs and the vital functions produced by them, but here again we must return to the cell as we did in discussing the base upon which medical science is formed.

Adami says, "Life is to be regarded as a state of persistent and incomplete recurrent satisfaction and dissatisfaction of certain protein molecules and to metabolism."

Sollman says, "The chemic changes taking place within the cell, lead to the transformation of energy which find their final expression in the phenomenon of life."

From this view point we must consider life as a result of chemic changes taking place in the hyaloplasm, producing substances that can be utilized as nourishment for its histologic structure, liberating energy that is conveyed by the spongioplasm in the production of its physiologic functions, and these influenced by stimuli.

In view of the fact that the activity of a cell is influenced by stimuli, I now wish to call your attention to the influence of medicinal substances upon the cell under the name of pharmacodynamics.

PHARMACODYNAMICS.

Pharmacodynamics is derived from two Greek words meaning, *the power of drugs*.

DEVELOPMENT.

It is one of the most recent developments of medical science, it being a product of the last half century, and more particularly of the last quarter. It has an enormous field to cover and, thus far, it has been partially explored.

ITS AIM.

The practical value of this, is to furnish the science of medicine with rational and scientific facts for the practice of therapeutics.

CELL ABSORPTION.

In discussing this subject let us first consider the process whereby a substance gains entrance to a cell. As has been stated, the cell is surrounded by a wall, not a true membrane but a specialized form of protoplasm which acts in the same manner as a modified semipermeable membrane whereby osmosis takes place for those substances for which it is a solvent and for

which it has an affinity, permitting the entrance to the cell, known as absorption.

It has recently been shown by Lillie that this semipermeable membrane is capable of rapid change in surface permeability; that during the resting period of a cell, it is less permeable, and during stimulation it becomes more permeable. He attributes this change in permeability to changes in electrical polarization and this due to a concentration of ions upon the external surface. We can see that this is of vital importance to the normal metabolism, and hence in the energy produced by the cell and must be taken into consideration in determining the power of drugs over a cell.

SELECTIVE ABSORPTION BY SPECIALIZED CELLS.

The human body is made up of a collection of specialized groups of cells, each group having its own identity; characterized largely by a difference in size, shape, arrangement, qualitative and quantitative constituents of the cell and each acting the one on the other by conduction either by physical influences or by chemical products.

Granting that the body is thus constructed, it would seem natural to assume that each group of cells, having become specialized, there would be a relative difference in the quantitative construction of its protoplasm, and as a result, a difference in the permeability of its boundary wall, an alteration in its physical or chemic changes and a difference in function.

Histology has taught us that there is a wide difference in the histologic structure of the cells of the systems, biologic chemists have shown a variation in the quantitative and qualitative chemic construction, and physiologists have demonstrated a great distinction in the functions of the systems. It is not difficult for us to understand that drugs could not affect all specialized cells in the same manner or with the same degree of concentration, and, therefore, a great difference in effect would result.

LOCATION OF DRUG ACTION.

1st. Contact with the Cell Wall. A drug in solution, coming in external contact with a cell, can influence it by altering the amount of water and other permeating substances within the cell and in the surrounding liquid. The degree of such action often depends upon the drug concentration.

2nd. *During its Passage through the Boundary Wall.* Straub states that he has noticed that the functional activity of a cell is influenced only by the passage of a drug through the cell wall, such activity ceasing entirely upon the completion of the act, although the cell contained much more of the drug than before.

3rd. *During its Presence within the Cell.* When a drug comes in contact with the protoplasm of the cell, it exerts its *greatest influence* and the degree of influence is determined by the concentration in comparison with the cell mass.

PHYSICAL CHANGES IN THE CELL CAUSED BY DRUGS.

1st. *Solution.* The presence of some drugs within the cell produce a change in the physical properties, whereby certain constituents become liquified.

This liquifaction is characterized by a solution of a portion of the cell contents. Certain groups of drugs notably the hydrocarbon narcotics such as alcohol, ether, chloroform and sapotoxin, produce their effect by a solution of the fatty constituents of the nerve cells; the action not being due to an actual removal of the lipoids from the cell, because, as soon as the drug is removed from the cell by catabolism, the patient recovers. This theory is known as the Meyer-Overton Theory of Narcosis and applies to all those volatile substances that act as lipid solvents.

2nd. *Solidification.* The presence of other drugs within the cell produces a phenomenon, which results from the physical properties of the molecules, which is entirely independent of the chemic construction and applies to all substances in solution, but more especially to the alkaline salts. This phenomenon of "osmotic action" produces within the cell a change consisting principally of an alteration of the water and salt content and a change in the intracellular pressure.

The pharmacologic importance of osmotic action differs with certain drugs.

The molecules of the muscle-nerve poisons, such as strychnine, atropine, nicotine, curarine, muscarine, etc., being so small, in size, permits of concentration and have a distinct advantage over the larger molecules of the proteids ($C_{680}H_{1098}N_{210}O_{240}FeS_2$), which do not permit of concentration, this accounts for the intensity of action of the muscle-nerve poisons and the absence of action of colloid substances. Midway between

these come the alkaline salts which are of great importance in producing osmotic action.

3rd. *Molecular Foreign Bodies.* Some drugs gain entrance to the cell by penetration and, not being utilized in the cell contents, become localized, acting as foreign bodies, producing irritation and alteration of function.

CHEMIC CHANGES IN THE CELL CAUSED BY DRUGS.

The cell, being constructed normally of substances chemic in nature, some of which are capable of a vast number of reactions, namely the protein molecule which is so complex that it can readily unite with numerous chemic substances, for instance the acids, alkalines and metals forming albumenates. The carbohydrates, together with the ions of the salts of potassium, sodium and calcium, while in solution within the cell, are free to combine chemically with the ions of other substances, producing also a change in functional activity.

Thus we see chemistry by its oxidations, decompositions, reductions and syntheses, playing an important role in drug action, but the tendency of recent study and research along this line seems to indicate that drug action is dependent more upon the physical changes taking place within the cell protoplasm than upon the elaboration of new chemical compounds.

PRODUCES A CHANGE IN ACTIVITY.

Stimulation. By stimulation is meant an increased functional activity of the cell, making it capable of performing a greater amount of work in the same or a shorter period of time.

The external manifestation of this stimulation may be an *excitation*, i. e., caffeine upon the cerebrum or *inhibition*, caffeine upon the vagus slowing the heart in man.

Depression. By depression is meant a decreased functional activity of a cell whereby it is capable of performing a less amount of work in the same or a greater length of time.

This depression may result from several causes namely:

Fatigue, as results from the *absence of rest* for a cell which has been subject to an increased functional activity.

Exhaustion which results from an *absence of food* within the cell whereby it fails to continue its normal or increased functional activity.

Paralysis occurs as a result of the *absence of the functions* of the cell.

Death occurs when the *functions of a cell are abolished*.

Thus we see that fatigue, exhaustion, paralysis and death, follow closely one upon the other and are external manifestations of grave significance in drug action, especially as related to toxicology.

PRODUCES A CHANGE IN FUNCTIONAL ACTIVITY.

The stimulation or depression as result from drugs, affect all tissues from the connective tissue framework of the body to the highly specialized structures of the central nervous system, the difference being one of degree, and produce an increased or decreased functional activity of the cells of the organized systems.

DIRECT EFFECT.

The effect is direct if the drug is locally applied to the tissue, i. e., hydrochloric acid, or general if absorption takes place and the drug comes in contact with the cells of the systems, i. e., strychnine.

INDIRECT EFFECT.

The effect is indirect if, when locally applied, an influence is exerted which changes the functional activity of structures beyond, i. e., cantharis; or general if absorption takes place and one system selects to utilize the greater portion, resulting in a change in its functional activity, this indirectly affecting other systems or the senses of the body, i. e., ether.

We now ask the question, why all this stimulation, this depression, which so alters the protoplasm of a cell that a change in activity results?

With the origin of the lowest form of a nucleated animal cell, the amoeba, could have been found a vegetable cell, the progenitor of the bacillus. The forces required to produce the former, namely heat, moisture, and nutritive material, were prerequisite for the latter, each struggling to obtain its share to maintain its existence, each preying upon the other for supremacy.

Millions of years have passed and evolution has produced the highest type of animal life, the man. Evolution has labored equally hard with its enemy. The bacillus, highly developed,

capable of producing toxins which baffle the keenest intellects of today in finding out its chemie construction, is still attacking its enemy, man.

The struggle can be likened unto two armies, each equipped with the latest implements of warfare produced by evolution, victory, perched upon the shoulders of those who, by numbers, by bodily strength or by outside and unexpected influences, have conquered the enemy.

Drugs are these "outside and unexpected influences" that assist in changing a pathologic to a physiologic cell.

SUMMARY.

The cell is the basis of medical science.

Life is to be considered as a result of chemie changes within the cell and these influenced by stimuli.

The histology, chemistry and physiology of a cell must be considered in determining the phenomenon of drug action.

The effect of drugs must be considered as upon the cell.

The quantitative and qualitative constituents of a cell produce a selective absorption.

Selective absorption produces a difference in degree of effect.

Drug influence is exerted by contact, passage through the boundary wall or presence within the cell.

Drug effect is produced by a physical or chemie change.

Cell changes result in stimulation or depression of functional activity.

Changes in functional activity assist in changing a pathologic to a normal physiologic cell.

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DISCUSSION OF PAPER ON "A STUDY OF 350 CASES OF TUBERCULOSIS AT THE VT. SANATORIUM, BY DR. KLOTZ, IN DEC. ISSUE.

Dr. W. N. Bryant—To discuss a paper of this kind is rather of a two-sided affair. We realize that the opinions of the doctor carry with them the weight of authority, and while it is an honor to be associated with him on the program, the completeness of his paper makes any discussion difficult. On the whole I feel that my safest way is to confine myself largely to the theoretical and historical aspects of the case. It is usually safe to discuss history, as dead men cannot well kick if one does take liberties with facts.

It is only expressing a truism to say that the modern open air sanatorium is the last word in the treatment of tuberculosis; it expresses the accumulated knowledge and wisdom of the past ages added to the scientific discoveries of our own. And still, as one of the examiners of our sanatorium I often hear this idea expressed by patients and sometimes also by physicians. You tell us that the cure for tuberculosis consists in pure air, plenty of food and rest. Now if this is so, why can we not get these as well at home as at an institution? And it is this feeling that keeps many patients away from the institution and the benefits it can confer. This feeling arises from a misconception of facts. While it is true that air, food and rest in due proportion are the all important things, it is also true that we should regard these things as the real *therapeutics* of tuberculosis to be applied the same as drugs are to other diseases.

It is just as reasonable to expect a man to administer treatment to himself in other troubles as in this condition. Suppose a man applies to you for advice in a case of influenza. Do you say to him, "Oh, you need Dovers powders, quinine and aconite. Get some and go home and treat yourself"? It is just as sensible to say this to a sick man as to say to the victim of tuberculosis, you need fresh air, food and rest. Go home and treat yourself. These things need administering with as much care and under as rigid supervision as do other remedies in order to get results. As a matter of fact the rigid routine of institutional life has as much to do with results as the means used. We do know as a demonstrated fact that patients do not do as well in the surroundings of the home as in a sanatorium, even if they can command all the necessary conditions.

Personally I believe very much in the psychic influence in these cases. You men who do surgical work, how many appendices do you remove which to all appearances are perfectly normal? And yet your patients are cured of the symptoms for which they sought advice, and for that reason the operation is justified—by results. It is the profound influence made on the mind of the patient by the fact of undergoing an operation and expecting relief. Now a patient going to an institution goes for a definite purpose. He goes expecting results, and if conditions are favorable he gets them. It is for us as physicians to correct this mistake in the minds of many that they can be treated at home as well as in a sanatorium, for facts and experience prove it is not so. Another misconception. Many have an idea that the new—so-called—treatment of tuberculosis by air and feeding is a recent development, as also is the infectious nature of the disease.

This is a mistake. The infectious nature of consumption was taught by Hippocrates and his successors 400 years before Christ. Lazarus Reverius

held the same doctrine, and the Neapolitans had laws calling for the segregation of these patients and imposing heavy fines upon physicians who failed to report them. Sydenham, the great English physician, 250 years ago taught that consumption could be cured by constant horseback riding. He made the mistake of supposing that it was the exercise which was beneficial. We now know that it was the open air. An open air sanatorium was established in England in 1840 and others in Germany soon after, where demonstration was made of the curative effect of this treatment, but owing to the inherent conservatism of the profession the theory made no headway until the discovery of Koch in 1884 of the tubercle bacillus as the cause of the disease, since which time progress along those lines has been rapid and the results brilliant.

It has always seemed to me that the *personal element* was a great factor in the case. Some cases seem bound to get well regardless of conditions, while others with practically the same local signs will not recover under the best of conditions. This, however, applies to all diseases more or less.

Reports of 1,500 cases from the Adirondack institutions covering a period of from two to fifteen years show that of all cases treated 31% are now known to be living, while of the strictly incipient cases treated 66% are still living, a striking argument for the early treatment of our cases.

The statistics from our own institution so ably set forth by Dr. Klotz in his paper, ought to make us proud of the work it is doing. And yet the facts are these. We have in the state today probably 2,500 cases of tuberculosis, of which perhaps one-half are incipient cases suited to treatment in the sanatorium. We have an institution accommodating at most forty patients, and recently I received the usual report card saying there were about a dozen vacancies. What does this mean? It means that many of the physicians of this state are not awake to their duty in this regard, and I am sorry to say it means further that some of them indulge personal prejudices which ought to find no place with a fair-minded man. Many physicians have applied for cases too far advanced for reasonable hope of benefit which have been refused admission, and for this reason the physician has made it a personal matter and has become an enemy of the institution. Brethren of the profession, we cannot afford to do this, either in our own interest or for the good of our patients who might receive help were they allowed the privilege of a residence here for a time. Let us put aside personal matters and pull together in this great warfare against disease by upholding an institution of which not only Vermont but all New England is proud, and which is destined to be of inestimable value in the fight against the great white plague in our state.

Dr. L. H. Ross of Bennington—I will follow Dr. Bryant's lead and refrain from any criticism of the paper, but will give one reason why there are 1,200 incipient cases of tuberculosis in the State of Vermont. When we have a case of scarlet fever we put that case under quarantine and every person who has been exposed is watched carefully (may be kept in quarantine) until the days of the working out of the disease are ended. Dr. Klotz tells us that the great majority of patients admitted to the sanatorium show evidence of immediate exposure either in their own family or among their associates. The question with me is if we have a case of tuberculosis, should

not we watch every person who comes into contact with that patient? A boy in the family is taken sick with tuberculosis and while that boy is sick, and long after that, every member of that family should be examined for tuberculosis at least once in three months. You all have had the experience that in a family you may get a case of tuberculosis, no matter what the history of the family is. If that family has one source of infection, you will find within a short time other members of that family developing tuberculosis.

The period of incubation of tuberculosis is much longer than that of scarlet fever or typhoid fever, so that patients must be watched over this extended period of time, and that is the time when we can discover our incipient cases. I think that the great cry of the most of our sanatoria throughout the country, is that so many cases are not discovered until they are advanced. It seems to me it behooves us, whenever we have a single source of infection, to watch all persons who come in contact with that source of infection.

Another side of the question is the good that the sanatorium is doing for the people throughout the state. I don't believe that we physicians realize fully the amount of good that each patient, who has been to the sanatorium, spreads throughout his immediate acquaintance. It has been the hardest thing for me to persuade a patient to go to the sanatorium until he was so far advanced that it was useless. Now a patient comes back from the sanatorium and any person who is taken sick with tuberculosis in the immediate vicinity of that cured tubercular patient is ready and willing to go, and almost the first question they ask when you pronounce them ill with tuberculosis is, can't I go to the sanatorium? The good that comes from one cured patient living among his associates is multiplying the benefits of the sanatorium tenfold.

Dr. H. D. Holton of Brattleboro—I am not going to discuss the paper. I want to ask just a few questions. We are all familiar with the statute which says these cases should be reported to the State Board of Health for the purpose of sending such literature to the party as may be thought wise. Now for the last three years the cases reported to the Board have been about one-third of the deaths, and quite a good many of those the secretary has received have been inquiries from physicians asking if he has any literature to send, and if so to please send it to the physician "because the patient does not know what we suspect is the trouble and we don't want him to know." I have to write back to him that he is losing one of the greatest aids that he could have in the treatment of the case, that the patient would take hold and work with him, that the law requires that the literature be sent to the individual, and hence that the Board has mailed it direct to the individual. Why doesn't the profession report the cases? The question comes up whether there should not be some examples made by prosecution. The time may come when we will be compelled to make some prosecutions. If it were diphtheria or small-pox the community would all rise up in arms.

There is one other thing that I want to impress upon you. The last legislature passed an act for the governor to appoint a commission to inquire into the number of advanced cases of this disease and recommend to the next legislature such legislation as may be thought wise to take care of those people. A circular letter was sent out to the health officers

of the state to know how many cases there were in their town. The health officer could inquire of the different physicians and perhaps they would answer about how many cases they thought there were and how advanced. We have received answers from 86 towns since the last legislature adjourned. We are looking every day for an avalanche of mail from the other remaining towns, and we hope it will come before the snow flies, because we can't know whether it was a snow storm or not. How is this commission to recommend anything if they don't have some basis to work on? I get reports sometimes like this: "I have suspected that John Arthur had tuberculosis and have sent his sputum to the laboratory and it does not show any bacilli." Just as if it had got to show the bacilli in the incipient stage in order to prove that it was tuberculosis.

One reason why cases are not reported, I suspect, is that in the first place Dr Jones is afraid of Dr. Smith, and they are both practicing in the same town or community, and Jones says if I report that as tuberculosis the family will drop me and call in Dr. Smith, and Smith will say it is a little bronchial trouble and I will soon remove it, and the result is that Jones loses the case and Smith gets the fees. I know that such are the facts in some places. The other fact is that the family doesn't want the daughter or son told of it. Is there any sense to that? What is your duty? If you are called into a case of smallpox, are you going to call it chicken-pox? We are a profession, not a trade, and we ought to act as professional men of integrity and honor. It seems to me that it is very, very important. There is much that might be said on this line and perhaps I have spoken too pointedly in the matter, but it certainly is a feeling that I have about it, and when I recognize that there are probably from two to three thousand cases in the state all the time, and a large number must be advanced cases that can't be benefited by sanatorium treatment, I don't see how we have made the headway that we have. In 1885 there were 805 deaths in the state. In 1910 there were 390 deaths in the state. We have been making some progress, but how we have been able to do it in the face of all the obstructions, I don't know.

Dr. C. S. Caverly of Rutland—I want to say but a word on the subject of tuberculosis. I presume it is as important a subject as will come before this session of the State Society, and I am therefore going to take the time to make the suggestion that possibly ought to have been made to the House of Delegates for action. You have heard of the advantages of discovering incipient cases and some of the reasons for not discovering them, and the danger from advanced cases. It is fair to assume that one-third of those 2,500 cases are advanced cases of the disease. I don't know of a single thing that is so dangerous to the public health of Vermont to-day as these advanced cases. It was brought home very strikingly to me yesterday morning. A man whom I knew twenty-five or thirty years ago came into my office, it was difficult for him to breathe and he was coughing a good deal and he had drifted back to my town in the last stages of tuberculosis, friendless and almost penniless, and had been told that I could probably secure his admission to the Vermont Sanatorium or some hospital. Of course neither was possible. We have no hospital, no sanatorium for taking care of these kind of people except the poor houses. We have a commission for the avowed purpose of investigating this matter and making recommendations to

the legislature, and I think it is proper at this time that the Vermont State Medical Society go on record as favoring a sanatorium for advanced cases of tuberculosis. If it is proper I would like to make that a motion, that we urge this special commission to use every legitimate means to secure from the next legislature the proper appropriation to bring about this result—a place to take care of advanced tuberculosis cases.

I have no objection to the establishment of sanatoria for incipient cases by the state aside from the one at Pittsford, but my object and my motion consisted simply in putting up the bars at the source and relieving the greatest danger from this tuberculous disease. You can't by any possibility house all the incipient or advanced cases, but if you can get rid of and properly take care of those that are too poor to take care of themselves and living under conditions where they are bound to spread this disease in their families and among their friends, we can accomplish a good deal in this direction. The poor-house is not the place for them, nor is the crowded tenement house. You are all aware of the conditions that prevail under those two conditions. There is usually no precaution taken with the sputum and it is almost impossible to make them take precautions, and if the state can take care of those that are too poor to take care of themselves and are spreading the germs of this disease broadcast, it will go a great ways toward heading off this disease at the source. It has been done in Massachusetts and New York and is being done in New Hampshire and Maine. My whole contention was simply a matter of backing up this special commission that already exists here in the state for the purpose of attaining this object.

Dr. C. S. Scofield of Richford—I think that is a very important suggestion. I have seen several cases that were willing to go to the sanatorium and there are many of those cases in the state.

Dr. C. W. Peck of Brandon—I second the motion. In 1892 I was so unfortunate as to be in the legislature (and I hope I never will be there again). That question has been discussed and I have talked about it, and I have stood over and over again advocating that measure. I hope in the name of heaven something will come of it. You ought to have been on record fifteen years ago for this same measure. It was talked about. Any one who knows anything about tuberculosis knows that the danger is not in incipient cases. Who are the ones who are spreading this disease all over the state? It is your advanced cases. What has the State of Vermont done in the last ten or twelve years? It has folded its arms and put both hands on its pocketbook and wouldn't do a damn thing. It is absolutely true. Excuse my profanity, the reason is because our toastmaster here got me into it last night. Other states make appropriations. What does the State of Vermont care? They go to the legislature for politics. But there is not very much politics in a man dying of tuberculosis. They are all doing it. You know it as well as I, and yet there are millions of bacilli thrown off from a man dying of tuberculosis. Send him to the poor house and kill all you have got in the poor house. Send him to the sanatorium and he won't be careful enough, he will have to have a nurse on each side of him. I say that in 1892 I introduced this bill into the House of Representatives and it was advocated by a poor man, Ballard of Burlington. We are fighting a funny kind of a fight. We are fighting and at the same time sliding right back.

Somebody, besides Dr. Holton and Dr. Caverly and a few others, have got to be in earnest about this. I don't suppose nine-tenths of you care a damn whether you do anything about it or not. I know the State of Vermont doesn't. If it cares anything about it, it is mighty successful in disguising the feeling.

Dr. J. N. Jenne of Burlington—I don't propose to enter into a discussion of this paper. There was one comment, however, that I wished to make. A question was raised by Dr. Bryant that seems to me you might possibly give a little emphasis to, and the question was once raised and answered by the statistical deaths, and that is the prognosis in different cases of pulmonary tuberculosis where the physical signs are the same. It is the experience of all of us that the results in the end vary very widely. Some cases that were extremely unfavorable have improved in the sanatorium. Others, with slight lesions, have made little or no progress. I think the statistics answer that question and help us in our prognosis of those cases.

We have two patients exhibiting the same illness. One had been subject to very bad hygienic conditions. The other one had been almost ideal. Each is to receive treatment in our sanatorium, and the one to whom has been given the greater change—the change of an unusual environment—will be the one who will almost surely make the greater gain. The cases which have come under my observation and which have been sent to the sanatorium, have come from the lower part of the town under bad hygienic conditions, and they have been the patients who have improved the most. Those who have lived in the better environment have made the poorer progress.

Dr. M. F. McGuire of Montpelier—If we are to receive assistance from the State, and it seems to me we should, I believe it should be for those who are in the incipient stage of tuberculosis rather than those who are in the advanced stage where a cure is improbable. I believe it would be but a short time before an institution for the advanced and incurable cases would be termed a death house and be very hard to get patients to enter it; and consequently, would fail in our efforts at protection of the non-tubercular persons in a household.

To illustrate my idea, I will cite a given case, during the past year, whom I advised to go to the sanatorium. Her reply to my advice was, "Why, Doctor, father is only getting fourteen dollars a week and I cannot ask him to give me half and the remaining six members of the family live on the rest." Kind friends furnished aid for her and she is now well.

To many it is a great hardship to suggest the expenditure of seven dollars and fifty cents per week, as the disease often occurs at a non-earning period of their lives. I believe the time to assist is in the early stage, and if the State would offer assistance, the sanatorium would be more than filled and, indeed, would have to be enlarged. As it is now, many have to remain away, as they have not the means or must depend upon charity. Assistance comes all right once in a while, as you all know, but there are many attacked with tuberculosis who have not the friendship of those who are able to assist them.

Another argument in favor of my contention is that many in the first stage of tuberculosis do not impress those who would be obliged to assist them of the necessity for immediate assistance, where in

the advanced stage the condition is evident to all. There are many charities now existing that would offer them assistance.

Dr. Briggs—The question of procuring state aid appeals to me because we are agitating it with some success over in New York. We have found that our legislators are very much as you have represented yours, but we have found that a legislator is very susceptible to the pressure that is brought to bear upon him from home, and we have found it so in our city, but you can't handle those men upon a vote in a body like this. There is a wide crusade being made in New York State against this. Last year the number of deaths was over 14,000 from tuberculosis alone, and we are realizing more and more the latitude of this great disease.

Dr. J. M. Hamilton of Rutland—I want to say just a word. Ninety-seven per cent. of the cases of incipient tuberculosis have no place provided for them. You have 1,200 cases and can take care of 40. I don't think, because we can't get them into a sanatorium, that we should forget those cases need most intelligent care. The question of early diagnosis is the most important thing. Your cases at home that you are unable to get into a sanatorium or to the high altitudes of the West, can have intelligent supervision at home. You don't want your patient to be misled: if he knows that he has tuberculosis, and fights it intelligently, you will be taking an enemy in ambush.

Dr. W. C. Klotz of Pittsford—In regard to climate, the change of environment is the important feature.

I would like to urge the building and equipment of an institution for advanced cases in this State. Some idea as to the number of advanced cases may be obtained from the fact that one-fourth to one-third of our applicants are rejected on account of the advanced stage of the disease. For the benefit of the community I think it is very important that these advanced cases be taken care of.

In regard to the prognosis of the disease, all the different features must be considered in the individual case. Owing to the amount of work involved it was impossible to carry out the results of treatment for each class of patients. I hope to be able to do this in the future.

I appreciate what has been said as to the financial question and know how difficult it has been for some patients to meet the charges of sanatorium treatment.

Possibly the legislature might be moved to act if they were made to realize that during the last ten years tuberculosis has cost the State forty-nine million dollars.

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TUFTS AND THE CARNEGIE FUND RULES.—The application of the Carnegie Foundation's recommendations on medical education in the last year at the Tufts Medical School has resulted in "a marked decrease in numbers without any perceptible improvement in the quality of the men admitted," states President W. Hamilton, who declares further that "the schools which have prospered since the publication of the Carnegie Foundation report on medical education

are the poorest and least scrupulous." Tufts adopted the Carnegie Foundation suggestions restricting applicants for admission; but President Hamilton finds that the suggestions when practically worked out, do not secure better men or a higher standard of scholarship. "No set of purely mechanical tests can ever determine the student's ability to do college work. Our colleges are in some danger of yielding too far to the standardizing pressure and forbidding entrance to or actually casting out, some of the really best and most promising youth of our country. In every doubtful instance the real test of a man's moral right to be in college is his ability to do the work, not his ability to satisfy entrance examinations."—*The Medical Times*.

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Canada is to join with the United States in a serious movement to stop pollution of the great lakes and to restore the potable value of their contained water.

New York's trolley men are to use the public schools to train children of the state against trolley accidents. These railway mishaps to little ones cost trolley companies \$5,000,000 annually in that state.

Hydrophobia increases in the metropolis, and the Board of Health there is to carry on an educational campaign for its suppression. If Great Britain, through careful quarantine of animals, has none of this dreadful disease, why not America, too?

At the 500th anniversary of the founding of the University of St. Andrews, Scotland, honors were given distinguished scholars from many lands. Among those were Dr. Charles Sedgwick Minot, professor of histology and embryology at Harvard University Medical School, and Dr. William W. Keen, of Jefferson Medical College, Philadelphia.—*Medical World*.

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Dr. Simon Flexner, director of the laboratories of the Rockefeller Institute of Medical Research, has been awarded the Cameron Prize in Practical Therapeutics by the University of Edinburgh. The award was made in recognition of Dr. Flexner's work in cerebrospinal meningitis and its treatment with antimeningitis serum. In accordance with custom Dr. Flexner has been invited to deliver an address at the University of Edinburgh sometime during the coming academic year.—*Medical World*.

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EDITORIAL.

The development of preventive medicine with the problems growing out of the development, has opened up as a new professional position, that of epidemiologist. The tracing of disease of epidemic nature to its source is one which requires an expert knowledge of the cause and method of spread. A new element has been injected into the problem by the comparatively recent discovery of carrier cases of almost all the communicable diseases. These individuals have usually convalesced from the disease in question at some time in the past but instead of becoming clear of the germ, harbor them for a greater or less length of time in some portion of the body. The host becomes reconciled to the parasite and the parasite becomes acclimated to the host so that they may maintain the mutual relation over long time with no inconvenience to the higher individual and little lessening of virulence on the part of the bacteria. These carrier cases are always a menace to others who have not acquired an immunity and given the vehicle

of transmission from the carrier to the unimmunized, we have a "sporadic" case of communicable disease or an epidemic as the vehicle is of limited or widespread distribution. It has been shown that almost all the acute infectious diseases may be spread by carrier cases, that is in the case of the intestinal diseases and gonorrhoeal, these individuals may remain carriers for long periods of time and furthermore that some of these carriers may never have had to their knowledge the disease in question. While these facts go a long way to make plain the formerly puzzling sporadic case and clear up many formerly unexplained outbreaks, they complicate tremendously the question of prevention. When we find that a person unconsciously may carry the germ of typhoid in his alimentary canal for forty years and be at this time as great or a greater source of danger to others than an active case of the disease and when we know that even when detected these cases oftentimes cannot be cleared up by any known means, we can readily realize the significance of these cases to the community. The State of New York tried to solve the problem by quarantine in the case of typhoid Mary but after several years had to give up and is now facing a damage suit. The only remedy now in sight after exhausting the vaccine treatment seems to be in the measures which may be taken before release and are of the sort to ascertain whether or no we are dealing with a carrier and the care which the individual himself must exercise when he is cognizant of the fact that he is a carrier and the efforts of sanitarians should be directed to some measures to rid the body of germs to which it has become immune. In the ordinary course of events the development of immunity is by the neutralization of the toxins and the accomplished destruction of the bacteria; the order of these events being dependent on the character

of the infection. These cases of persistent infection are probably accounted for by the development on the part of the body of anti-bacteriolytic substance (aggressius) or the localization of the germ in some portion of the body such as the gall-bladder or urinary bladder where by setting up a low grade inflammation, they so alter the normal secretion that they are not acted upon by the bacteriocidal properties of the blood. The effort at removal must be directed to overcoming these conditions.

The subject of the relation that should exist between medical schools and hospitals has become a subject for a great amount of discussion. Many feel that the whole situation is met if the hospital simply permits the students of a medical school to attend a few operations and visit the out-patient medical department. This view of the matter is largely due to a lack of complete understanding between hospital authorities and officers of medical schools. If these could meet with no other object in view than the greatest good to the hospital, medical school and indirectly the public at large, the rest would be easy. We may start with the fundamental proposition that there are two sides to a hospital, the administrative and the medical. These should never conflict. The board of managers should hold the administrative officers strictly accountable for the proper performance of their duties and the medical officers responsible for the conduct of the purely medical affairs. The assistant surgeons and assistant physicians should be chosen from the instructors in the medical school thereby establishing a training school for the development of future visiting surgeons and physicians, the medical service should never be used as a stepping stone for a surgical appointment. The wards of an ideal hospital are under the charge of visiting physicians and sur-

geons who are professors of the respective subjects in the medical school and the ward material is used freely for the instruction of the students. Some may object to the free use of the patients for teaching purposes but where the situation is thoroughly understood, we find that this objection is not a valid one. First because the physicians and surgeons working under the critical eyes of the student always put forth their very best efforts, thereby bringing the service up to the highest possible standard; second, the hospital that permits the free use of its material for teaching purposes is indirectly benefiting the public at large by assisting in the production of well equipped physicians.

THE OFFICIAL PREPARATIONS OF THE U. S. P. AND N. F.

That there has been a great betterment in drug therapy during the past five years no physician will dispute. Scientific and practical medical practitioners are not only just passing out of the age of drug nihilism but they have awakened to the fact that a fairly good conception of the pharmacological action of drugs is the one thing needed for a perfectly rational and successful treatment of disease.

All physicians are aware of the fact that a lack of expertness in treatment is responsible, probably more than all other causes combined, for the rapid growth of the "medicine-less cults," and all pharmacists are fast beginning to realize that their own shortcomings are largely responsible for the same results.

Beginning with this issue of our journal we will therefore open a department as above headed, giving reliable information regarding the standard official drugs and preparations of the United States Pharmacopeia and the National Formulary, as well as other reliable drug products. We will discuss this month the Elixir of Salicylic Acid, N. F., the Compound Cathartic Pills, U. S. P., and Syrup Glycyrrhiza, N. F.

ELIXIR ACIDI SALICYLICI, N. F.

Elixir of Salicylic Acid, N. F., contains in each teaspoonful dose, 5 grains of Salicylic

Acid and $7\frac{1}{2}$ grains of Potassium Citrate, in a vehicle of Aromatic Elixir and Glycerin. It contains 50 per cent of Glycerin and 9 per cent of Alcohol. It is made fresh upon prescription needs. The dose is 4 Cc. (1 fluidram), after meals and well diluted.

Physicians are cautioned never to use Salicylic Acid in pill, powder or capsule form, as it is very irritating to mucous surfaces in substance. Its action, which is best produced by prescribing the above elixir, is diuretic, and tends to reduce abnormally high temperatures. It is rapidly absorbed, but slowly eliminated. It increases the flow and secretion of bile. It is contraindicated in pregnancy and in alcoholic intoxication.

It finds its chief sphere of usefulness in acute rheumatism, in which it approaches the character of a specific remedy. As its most marked effects are the reduction of the fever, the pain and the articular swelling, it is undoubtedly good practice to reduce or abandon the Salicylic Acid after it has produced these effects and to then replace or combine it with an alkali (see formula below).

During treatment with Salicylic Acid, it is always well to look carefully to the digestive tract, that any irritant action may be promptly checked. Prescriptions for it should be marked "non-repetatur", so that the physician may always be informed of a patient's condition and prevent his forming the self-medication habit.

The elixir is often used advantageously to promote the absorption of effusions into the serous membranes, such as the pleura, and also subretinal effusions. An effective combination is as follows, changing dosage to suit individual cases:

Potassii Iodidi	ʒii
Fluidextracti Gelsemii	ʒi
Fluidextracti Cimicifugae	ʒiii
Elixir Acidi Salicylici, ad	ʒiv
Dose, one teaspoonful, as per indications.	

PILULÆ CATHARTICÆ COMPOSITÆ, U. S. P.

The Compound Cathartic Pill contains approximately $1\frac{1}{4}$ grain of Compound Extract of Colocynth (consisting of the Extract of Colocynth, Purified Aloes, Cardamom, Resin of Scammony and Soap), 1 grain of Calomel, $\frac{1}{3}$ grain of Resin of Jalap and $\frac{1}{4}$ grain of Gamboge. The average dose is two pills.

In addition to its most excellent action as a purgative, which is specific, this pill has pronounced appetizing properties, augments the flow of bile and stimulates the intestinal glands.

It acts as an intestinal disinfectant by removing the micro-organisms present, mechanically, through its peristaltic action on the bowel. It is practically free from griping effects.

This pill forms a most valuable adjunct in treatment for obstinate chronic constipation, alternating possibly every two weeks with such other cathartics as may be indicated. In this manner many obstinate cases have yielded to treatment, probably because it was necessary to vary from those drugs that produced the least irritation possible to such as have a more drastic action, and then back again.

SYRUPUS GLYCYRRHIZÆ, N. F.

Syrup of Glycyrrhiza, or Syrup of Licorice, is a splendid preparation. As an adjuvant to cough mixtures and to disguise the taste of Quinine sulphate, Ammonium chloride and similar disagreeable tasting drugs, it occupies a preeminent position among adjuvants and correctives.

It contains $12\frac{1}{2}$ per cent of pure extract of Glycyrrhiza, $12\frac{1}{2}$ per cent of Glycerin and 65 per cent of Sugar, forming a thick syrup. Especial attention is called to the excellence of the pure solid extract of Glycyrrhiza now employed in making this syrup, as formerly it was very often made from the powdered and acrid tasting extract. Ask your druggist to supply you with a sample.

Glycyrrhiza is primarily demulcent. It increases the flow of saliva and mucus, the increased secretions acting as emollients to the throat, its action being directed principally to the upper respiratory tract. Its pleasant, sweet and characteristic taste makes it especially useful as an excellent flavor in medicine. It is also slightly laxative and may be used as a pleasant aperient for children.

NEWS ITEMS.

Concord, N. H., is in the midst of an epidemic of sore throat and tonsilitis. Many children are out of school and some have been sent from St. Pauls' School. There were one hundred cases in one day reported from this school.

The worst cases are followed by either endocarditis or erysipelas and these cases seem to have a general sepsis. The Concord physicians refer to it as a streptococcus infection. They are expecting some experts from Washington to investigate the conditions as Dr. Rose from the Massachusetts State Board of Health has been unable to determine the cause of the epidemic.

The Supreme Court of the United States has just rendered a decision upholding the right of the State of Texas to require Osteopaths and other practitioners to pass an examination. The case affects faith healers, Christian Science practitioners and others not recognized by medical societies.

The Court refused to pass on the question of its applying to manicures, chiropodists and the like until it was raised.

A state may, the court held, pass a law prescribing the conditions under which the practice of medicine or surgery may be carried on. Justice Holmes gave the decision and caused some merriment when he declared he was not prepared to consider the details of the practice of osteopathy or to accept the suggestion as to the part which "Osculation and palpitation" might play in effecting a cure where the treatment was administered by a female practitioner.

There has been a sudden outbreak of tonsillitis in Boston; most of the cases are in the Back Bay. In a few days three hundred or more cases have been reported. They are similar to the cases in Concord, N. H.

The Massachusetts Senate Committee on Public Health reported unanimously that no legislation was necessary to define "the practice of medicine" and do away with the exemptions which certain so-called "irregulars" now enjoy. The recommendations sought to be enacted would have ended Christian Science practice and made them liable to fine and imprisonment.

Dr. C. W. Worthen of Ashland, N. H., has opened an office in Concord, N. H.

Dr. A. H. Doty, formerly Health Officer of the port of New York, has been elected a medical adviser of the health department.

During the past year the total number of deaths from typhoid fever in Boston was sixty-three, against five hundred and forty-five in New York and seven hundred and ninety-one in Detroit.

Dr. L. H. Hill who has recently been in Ashland, N. H., is now practicing in Concord, N. H., his old home.

Dr. C. R. Metcalf recently of the Massachusetts General Hospital has opened an office in Concord, N. H.

Dr. E. F. Hird of Biddeford, Maine, has located in Concord, N. H. He comes from the Truel Hospital.

Dr. D. C. Wiggins has resigned from the Army and is now practicing in Concord, N. H.

Dr. E. M. Nichols has left Barton for the west to be gone for two or three months. Most of the time he will spend in Portland, Oregon.

The Board of Health of New York has just adopted resolutions calling for the reporting of cases of venereal diseases by officers in charge of public institutions. The name, age and other particulars of every such patient shall be reported hereafter.

All physicians are requested to furnish similar information concerning private patients except that the name and added information need not be given. The Board of Health will distribute serums and undertake bacteriological tests.

The trial judge in a municipal court in New York City recently dismissed the suit of a physician for damages against the driver of a wagon for backing into and damaging his automobile which he had left standing in front of his office. The judge said he might have kept the car on the other side of the street. The appellate term of the Supreme Court ordered a new trial and said that a man is entitled to keep his automobile in front of his residence or place of business. The Supreme Court compared the automobile to a ship at anchor which is entitled to recover for damages when it is injured by a vessel that is in motion.

The New York alumni of the University of Vermont and of Williams College held reunion banquets in the same building February 2nd, and exchanged greetings. The Vermont alumni numbered one hundred, including Dr. Guy P. Benton, president of the university. The Williams men numbered three hundred, including President Harry A. Garfield.

Dr. William M. Conant, visiting surgeon for the Massachusetts General Hospital, is about to be appointed head of the surgery department at Tufts Medical School and Dr. William A. Brooks, Jr., surgeon-general of St. Elizabeth's Hospital, Boston, is to be his assistant.

Dr. A. B. Gilbert has removed from Concord, N. H. to Providence, R. I.

The newly elected superintendent of the Danvers State Hospital is Dr. George E. Kline, who has been in charge of the insane hospital at Ann Arbor for six years.

Dr. Harry W. Mitchell has resigned from the Danvers institution and goes to Warren to take charge of the Pennsylvania State Hospital.

Dr. W. H. Wilson of Worcester, Mass. was recently sentenced to one month in the Charles St. Jail, Boston, for shop-lifting. This is his second term. In January 1907, he was sentenced to nine months in the house of correction for stealing.

On Jan. 11th the new buildings of the New York Post-Graduate Medical School were opened to inspection and use. The plant provides for eleven operating rooms and groups of teaching rooms for each of the departments, besides extending the capacity of the hospital service to about four hundred beds. The curriculum of the school is correspondingly extended and adapted to the tripled facilities.

Romaine Pierson, publisher of the Practical Druggist, of New York, has purchased from Dr. Alfred Kimball Hills the *Medical Times*, a publication just closing its fortieth year. Mr. Pierson has engaged Dr. H. S. Baketal as editor-in-chief of the *Times*.

It was recently decided in a New Jersey court that the leaving of an instrument in the abdominal cavity by the surgeon is not sufficient cause for the recovery of damages by the patient.

Dr. Richard C. Cabot of Boston, is mentioned as the probable successor to Dean Henry A. Christian of the Harvard Medical School, whose resignation has been accepted.

The Eighth Annual Conference of the American Medical Association on Medical Education, Medical Legislation and Public Health, called by the Council on Medical Education and Council on Health and Public Instruction was held at Congress Hotel, Michigan Ave. and Congress St., Chicago, February 26 and 27, 1912.

Council on Medical Education.—Chairman, Arthur Dean Bevan, M. D., Professor of Surgery, Rush Medical College, 100 State St., Chicago; James W. Holland, M. D., Professor of Medical Chemistry and Toxicology, Jefferson Medical College, 10th and Walnut Sts., Philadelphia; Victor C. Vaughan, M. D., Professor of Hygiene and Physiological Chemistry, University of Michigan, Department of Medicine and Surgery, 221 S. State St., Ann Arbor, Mich.; J. A. Witherspoon, M. D., Professor of Practice of Medicine and Clinical Medicine, Vanderbilt University Medical Department, 150 N. Eighth Ave., Nashville, Tenn.; George Dock, M. D., Dean, Washington University Medical College, St. Louis, Mo.; Secretary, N. P. Colwell, M. D., 535 Dearborn Ave., Chicago.

Council on Health and Public Instruction.—Chairman, Henry B. Favill, M. D., Professor of Clinical Medicine, Rush Medical College, Chicago; J. N. McCormack, M. D., Secretary, Kentucky State Board of Health, Bowling Green, Ky.; W. C. Woodward, M. D., Health Officer, District of Columbia, Washington, D. C.; H. M. Bracken, M. D., Secretary, Minnesota State Board of Health, St. Paul, Minn.; Walter B. Cannon, M. D., Professor of Physiology, Medical School of Harvard University, Harvard University, Cambridge, Mass.; Secretary, Frederick R. Green, M. D., 535 Dearborn Ave., Chicago.

OPENING OF THE NEW DISPENSARY BUILDING OF
THE PHILADELPHIA POLYCLINIC AND SCHOOL
FOR GRADUATES IN MEDICINE.

The opening of the new dispensary building of the Philadelphia Polyclinic and College for Graduates in Medicine, 18th and Lombard Streets, was celebrated on the afternoon of February 5th, 1912, by a formal reception tendered by the President of the Board of Trustees, Mr. Herbert L. Clark, to the Board, the Incorporators of the Hospital and the members of the Medical Staff.

This institution was organized in the year 1882, for the purpose of meeting a long-felt demand for post-graduate teaching in the City of Philadelphia. It was the first institution to devote its labors to this work in Philadelphia, and it continues to be the only institution of this character. In the various years of its existence, it has extended instruction to many students from all parts of the country, as well as from all parts of the world.

Aside from this very important line of work, it has rendered especial service to the City of Philadelphia in that it has conducted one of its largest charitable medical services. From the time of its organization, up to the present, there has been an increasing number of patients treated from year to year, until at the close of the present year the official records of the institution show that in the year 1911, in its out-patient service, 17769 new patients have been treated, with a total number of 78386 visits; that in its accident emergency ward 8706 new patients have been treated, with a total of 9104 visits; and that in the wards of the hospital there have been treated 1746; and that 1167 operations under ether have been performed. This enormous service began to overtax the capacity of the institution several years ago. Its Board of Trustees, appreciating this fact, in 1907 undertook construction of the building which was formally opened February 5.

This building is constructed especially to accommodate the patients who visit the dispensaries and accident wards. Incidentally, however, it makes available to the institution much needed space in the original building for the increase of its beds for in-patient service, making available space for more satisfactory and complete operating room for private patients, more comfort-

able accommodation of its students, a better housing of its executive force, and at the same time, separate entirely the accident ward and out-patient service from the hospital.

The new building has been made possible only through the generous support of public-spirited citizens, the untiring efforts of its Board of Trustees, and generous appropriations of the Legislature of the State of Pennsylvania.

It is located on the property adjoining the older building, with the entrance from Naudain street. This location is in a portion of the city in which charitable work is greatly demanded, as evidenced by its enormous dispensary service.

The building is constructed on the most approved fire-proof plan, with the latest ventilating devices, with especial view of obtaining the maximum amount of light and air space. The construction is absolutely hygienic, with all the plumbing exposed, all floors made of concrete, all corners and angles rounded, the elimination of all dust-collecting surfaces, with walls and woodwork finished with glazed surfaces.

The furnishings and equipment of the institution are new in their entirety, and have been selected with a special view to ease of cleanliness. Each of the various dispensaries will be equipped with the most approved modern appliances for the treatment of disease of every character, and to each dispensary will be attached a laboratory equipment to aid in the study and diagnosis of disease. The accident emergency suite will be one of the most completely equipped and up-to-date in the City of Philadelphia. An arrangement has been made for the separation of the sexes, and modern bath-room appliances have been provided.

The waiting rooms for the patients are not only commodious, but splendidly ventilated, and so constructed as to admit of rapid and complete cleansing at the end of each day. An up-to-date operating room is provided in this building for the accommodation of such cases as are ordinarily operated upon in the hospital out-patient service. This operating suite is completely equipped, and has attached to it a ward to be utilized by patients who are convalescing from the minor operations which will be done here.

The equipment of the institution, therefore, makes it one of the most up-to-date of its kind in the City of Philadelphia, and fits it to properly handle its large number of cases, and render

increasingly satisfactory service to its students.

Philadelphia shares the distinction, with three other cities—New York, Chicago and New Orleans—in possessing this institution, the Polyclinic Hospital and School for Graduates in Medicine, conducted solely in the interest of graduate physicians. As such it occupies a field of its own, competing with no other teaching institution in the city, and is the only institution of its kind in Pennsylvania receiving students from every state in the Union, Canada and elsewhere.

It is just such institutions which have given to Philadelphia its present foremost position in the medical world, as the acknowledged center of medical thought, and the home of some of the most progressive and largest medical schools in America.

OBITUARY.

Dr. Velona A. Marshall of Moriah, N. Y., died Feb. 7, 1912 of pneumonia. Dr. Marshall was born in Pittsfield, Vt., June 10, 1864. Graduated at the University of Vermont Medical Department, with honors in 1896. Had practiced medicine in Moriah, N. Y., from the time of his graduation until his death.

CLINICAL SOCIETY OF NEW YORK POLY-CLINIC MEDICAL SCHOOL AND HOSPITAL.

Meeting of February 5th, 1912.

A CASE OF ADVANCED CARCINOMA: PROLONGATION OF LIFE BY OPERATION.

Presented by Dr. C. A. Frink.

Dr. Frink presented a case of a woman, 48 years of age, widow with three children, one miscarriage. Her family history showed longevity on both sides. Her husband died of phthisis 26 years ago. She had one previous attack of appendicitis. Seventeen months ago, patient had attacks of what she called indigestion, with constant pain, behind the sternum, and vomiting. Never vomited blood but noticed that food taken several days previously appeared in the vomitus. A diagnosis by her physician was made of "nervous dyspepsia." She lost weight and strength and the vomiting increased. No lung symptoms were present. On entering the Polyclinic Hospital she could not

retain food, and she showed a stenosis of the pyloric valve. She was very emaciated, skin dry, and no adipose tissue at all. Laboratory findings: Blood, a secondary anemia. Sputum, negative. The X-ray was unsatisfactory. Stomach contents showed: presence of lactic acid, no free hydrochloric acid, or Boas bacilli. Urine normal.

Examination of the abdomen showed a mass the size of an orange, situated over the pyloric valve, immovable. Operation: Dec. 4th, 1908, by Dr. Bainbridge, who did a retro-colic gastro-jejunosomy. The inoperable mass with its enlarged glands which about closed off the pylorus were not touched.

Subsequent History: June 11th, 1909. The patient returned with her first trouble since operation. Vomiting after food. She otherwise continued in good health, until the spring of 1911. In May of this year she showed signs of infection by T. B. And in July the T. B. bacilli were found in the sputum. The patient died of pulmonary T. B. on August 6th, 1911.

Conclusion: The history of this case emphasizes the importance of operating on cases of cancer, that do not appear from the clinical findings to be good surgical risks. This patient was a poor surgical risk, so far as there being any chance of curing her condition by operation. Nevertheless by doing all in our power, she was able to return to her home and family, enjoying good health, eating and sleeping well, and she gained over 15 pounds in weight. Two and one-half years after operation she died of a condition entirely independent of her former trouble. We feel that through surgical intervention, we prolonged this woman's life, making her a useful member of society, for this additional time.

Dr. John A. Wyeth said he considered it the duty of a surgeon to take any and all risks regardless of what might be the result on his reputation or statistics when the patient is in such a state, that the conditions seem absolutely hopeless, and death seems imminent, no matter whether the patient lies on the table or not, if in the judgment of the conscientious surgeon, there is a possibility of contributing to the patient's comfort, lessening his discomfort or prolonging his life, it is his duty to undertake the operation. One of the severest criticisms I could make about any man, is that he would not undertake a case if he thought the patient would die.

Dr. Bainbridge said: That at the time of operating on this case he had met the conditions exactly as Dr. Wyeth had described. The patient had consented knowing full well her serious condition, and had never ceased to be grateful for her prolonged life. She seemed particularly discouraged in not being able to survive the phthisis when she had been relieved of the stomach condition which seemed to her to be so much worse.

A CASE OF TUBERCULAR PERITONITIS: PROLONGATION OF LIFE BY INTRA-ABDOMINAL ADMINISTRATION OF OXYGEN.

By Dr. H. D. Meeker.

Dr. Meeker showed a case of tubercular peritonitis which he had treated by the intra-abdominal administration of oxygen. The case was apparently cured. He also advocated its use in cases of profound shock and ascites, and said that it required from 72 hours to four or five days for complete absorption. Care had to be exercised in watching cases as the abdomen became flat in from 48 to 72 hours. Collapse from its complete absorption should be guarded against, by the free administration of stimulants. Dr. Bainbridge said he had been using oxygen to meet shock in abdominal surgery for the past eight years, and had treated in all about one hundred cases. He had noted marked improvement and a ready response to its use.

A NEW PNEUMATIC ELECTRIC PROCTOSCOPE.

Shown and demonstrated by Dr. Frank C. Yeomans.

Dr. Yeomans demonstrated a new proctoscope, and sigmoidoscope. He said that hitherto the practical methods of directing lighting of proctoscopes, were by small electric bulbs, carried near the distal ends of the tubes, on insulated carriers, and that they burned out easily. He had adopted the principle of illumination by a more powerful light, within and at the end of the ocular portion of the tube. The proctoscope is ten inches long, graduated in inches, seven-eighths of an inch in diameter, and is fitted with a large flange, at the proximal end which is perforated by a small tube, joining the main tube at an angle. A light carrier fits very tightly into the auxiliary tube, and a substantial incandescent bulb is covered with a capsule bearing a plano-convex lense, so set that the collected

rays are refracted at a compensating angle to the light carrier. This lense only projects into the main tube, and in no practical way interferes with inspection of the bowel or the passing of instruments.

The ocular end of the tube is enclosed hermetically by a plug which contains a glass window, to magnify the illuminated field. A hand bulb attached to a small offset at the side of the plug inflates the bowel to any degree desired. The same light carrier and plug fit the sigmoidoscope which is also fourteen inches long and three-fourths of an inch in diameter.

The points of superiority in this new instrument are: Simplicity of construction: Sterilizable by boiling: Excellent illumination by a strong electric lamp which will not burn out readily: and thorough practicability for examination, diagnosis or treatment of lesions in the rectum or sigmoid below its apex.

BOOK REVIEWS.

THE SURGICAL CLINICS OF JOHN B. MURPHY, M. D., at Mercy Hospital, Chicago. Volume I, Number I. —Octavo of 133 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Published bi-monthly. Price per year: Paper, \$5.00; Cloth, \$12.00.

This, the first number of the "Surgical Clinics of John B. Murphy, M. D." represents a new departure in medical publishing. It is a departure, however, that must appeal at once to the medical man, because it is extremely practical *clinical* teaching.

These are not students' clinics but Dr. Murphy's famous clinical talks at Mercy Hospital, Chicago, for physicians only. A point we want to mention is that these "Clinics" are published just as delivered by Dr. Murphy, being reported verbatim by an expert medical stenographer. In this way they retain all that individual force and charm so characteristic of the clinical teaching of this distinguished surgeon.

INTERNATIONAL CLINICS, a Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene and Other Topics of Interest to Students and Practitioners.—By Leading Members of the Medical Profession throughout the world. Edited by W. T. Longcope, M. D., Philadelphia, U. S. A., with the

collaboration of Wm. Osler, M. D., John H. Musser, M. D., A. McPhedran, M. D., Frank Billings, M. D., Chas. H. Mayo, M. D., Thos. H. Rotch, M. D., John G. Clark, M. D., James J. Walsh, M. D., J. W. Ballantyne, M. D., John Harold, M. D., Richard Kretz, M. D. With regular correspondents in Montreal, London, Paris, Berlin, Vienna, Liepsic, Brussels, and Carlsbad. Vol. III, Twenty-first Series, 1911. Philadelphia and London: J. B. Lippincott Company. Price, \$2.00.

This volume has many practical articles on medicine. Those of special interest are on the Duodenum, and the Relation Between Gastric and Urinary Acidity. There is also a good article on Venereal Disease in Children, and one on The Surgical Treatment of the Disabilities Following Anterior Poliomyelitis. The papers are all on practical subjects.

DIAGNOSTIC AND THERAPEUTIC TECHNIC.—By Albert S. Morrow, M. D., Adjunct Professor of Surgery, New York Polyclinic. Octavo of 850 pages, with 815 original line drawings. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$5.00 net.

This book is designed to combine in one volume a discussion of practically all the procedures employed in diagnosis and treatment. It discusses in detail the procedures that any physician may be called upon to do any day. It is the only work that takes up the methods used in diagnosis exclusively. The descriptions are full and the text well illustrated. It is a ready reference book for getting the technic of investigating disease in any part of the body.

ONE HUNDRED SURGICAL PROBLEMS. The Experiences of Daily Practice Dissected and Explained.—By James G. Mumford, M. D., Visiting Surgeon to the Massachusetts General Hospital; Instructor in Surgery, Harvard Medical School; Fellow of the American Surgical Association, etc. Octavo 354 pages. Price \$3.00. W. M. Leonard, Publisher, Boston, 1911.

This book presents one hundred selected cases, well classified in groups to show the phases of each subject, with statement of symptoms and thorough discussion leading to Diagnosis, Treatment and Results.

Of the value of this kind of book there is no question. As the preface states, "The method in proper hands is luminous and the lessons instantly comprehensible."

Certain groups of cases, as those of the Stomach and Duodenum, Graves Disease, Diges-

tive Disorders are worthy special mention. In the last named series are ten full page X-ray plates showing ptosis of the large intestine. These are equally valuable to the internist and the surgeon, and superior to any work published up to the present in this field.

Each Case History has been thoughtfully considered and well written—in accord with a style which Dr. Mumford has made his own. The book comprises a valuable Post-Graduate Course in Surgery presented in most interesting form.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

DIPHTHERIA AND VIVISECTION.

W. H. PARK, New York (*Journal A. M. A.*, February 17), gives a history of our modern progress in the treatment and knowledge of diphtheria, showing how the identity of membranous croup and laryngeal diphtheria has been recognized and the methods by which the discovery of the diphtheria bacillus and the acquisition of a remedy have been obtained. His statistics show very clearly the result of antitoxin treatment since its introduction. They show that the deaths from diphtheria per one hundred thousand population have been reduced from over 200 in 1887 to 37 in 1910. In the London Hospital the mortality has been reduced from about 30 per cent. in the early nineties to less than 10 per cent. In the pre-antitoxin years, while there were fluctuations in the mortality, in no period did all the cities show even a slight decrease, but it is only when we come to the critical year, 1894, that the drop in the mortality, which has progressively continued to the present time, began. The effects of first and second injections are noticed, the most important difference being the change in time of the reaction. After-effects do occur and in some cases may be serious, but they are less frequent and severe the earlier the antitoxin is given and, as compared with the benefits from antitoxin they are very insignificant. Antitoxin is one of the most brilliant results of animal experimentation.

CANCER OF THE BREAST.

W. S. THORNE, San Francisco (*Journal A. M. A.*, February 17), emphasizes the fact that in a certain percentage of cases tumors of the breast diagnosed as malignant do not undergo malignant degeneration and that the histologic arrangement of a tumor does not always necessarily determine its future life history or development. He quotes Dr. M. G. Wells (*Journal A. M. A.*, May 29, 1909, p. 1731), as to the natural defenses of the body against cancer, and asks how, in view of these facts, we must estimate the reported recoveries after amputation of the breast. Should not a certain proportion of them be credited possibly to the natural defenses of the body? The usual three years' period of recovery he considers a mistake, and he shows cases illustrating the vagaries

in development and appearance of tumors diagnosed as malignant. One of these disappeared without treatment but recurred afterward in other parts of the body after a long lapse of time. Others were not operated and disappeared. The consensus of medical opinion, however, is, he says, that 85 per cent. of breast tumors are malignant and the radical operation is in vogue though not always justified by the pathologic findings. He wishes to state his opinion as to the radical operation. It is mandatory without exception, but disfiguring operations should be avoided unless unequivocally necessary. The procedure which most appeals to him in dealing with benign or relatively benign tumors of the breast is the plastic resection of Dr. J. C. Warren and Dr. W. L. Rodman. These methods, or some modification of them, have been employed by him for some years with results most satisfactory both to his patients and to himself.

ERYTHEMA MULTIFORME.

W. CUTHBERTSON, Chicago (*Journal A. M. A.*, January 6), reports a case of erythema multiforme in a woman aged 27, that had existed from childhood, occurring every fall and disappearing in the winter. Intramuscular injections of three-quarters of a grain of cacodylate of soda, given twice a week for several weeks, completely relieved the attack. Each injection was followed by relief and the disease disappeared entirely, leaving her in better condition, according to her own statement, than she had ever been in since it first occurred. From his experience in this case, Cuthbertson would recommend cacodylate of soda injections for trial in all cases of erythema, more especially in the angioneurotic type.

PALMAR ANEURYSM.

D. B. ROBINSON, Kansas City, Mo. (*Journal A. M. A.*, January 6), reports the case of a railroad switchman, aged 35, in whom, after a slight traumatism, an aneurysm, the size of a hickory-nut or larger, developed at the center of the deep palmar arch. It was easily ligated and removed and recovery was uneventful, but the case is reported because of its rarity. Robinson says that in looking up the literature of the subject he has not been able to find a similar one reported.

VOMITING OF PREGNANCY.

C. B. INGRAHAM, Denver (*Journal A. M. A.*, January 6), reports a case of pernicious vomiting of pregnancy in a woman 29 years old, which illustrated the reflex, neurotic and toxic factors of the etiology of the condition. The nervous element was marked. There was also at the time a dermoid cyst of the ovary which was successfully removed. This Ingraham considers only a coincidence and not an active factor in causation. The ammonia coefficient was at all times low and the urinary picture one that could be accounted for by the starvation, but he considers it a case of vomiting of mildly autotoxic nature. He gives a history of the subject in the literature and the theories which have been advanced. His conclusions from his whole discussion of the subject are: "The characteristic vomiting of pregnancy, moderate or severe, is probably always of autotoxic origin.

There is abundant evidence of the relation of certain glands of internal secretion (thyroid, parathyroid, adrenal) to the toxemias. The liver lesion alone does not explain the urinary picture, while metabolic studies on the influence of the thyroid and parathyroid glands show analogies to explain the urinary changes. The importance of the neurotic element may be explained by the nervous influence on glandular activity. On the assumption that the high ammonia nitrogen after thorough administration of dextrose by enemata is an indication of insufficient ureagenic function, it is urged that this test be given a trial in determining the indication for obstetric interference. To further substantiate the evidence of liver destruction the glycogenic function may be determined by the experimental production of alimentary glycosuria, using definite quantities of sugar. The clinical picture and liver lesion are against the probability of eclampsia and pernicious vomiting being one toxic process. Whether the differences are to be explained by such additional factors as kidney involvement, loss of calcium or differences in the perversion of metabolism by glandular influences, remain to be proven. When operative interference is indicated in the toxemias of pregnancy, chloroform is contra-indicated. The liver destruction following its use is heaping insult on injury. In view of the evidence of the relation of the thyroid, parathyroid and adrenal glands to the toxemias, a complete therapeutic trial of their extracts is urged."

OXIDAZE.

The Journal A. M. A., December 30, recalls to its readers the exposés that have been made of a special type of consumption-cure humbug, consisting essentially of ordinary cane sugar and some volatile oils. This type of preparation has been sold by different individuals under various names, such as hydrocine, oleozone and oxidaze. It seems to have originated with one C. E. Getsinger, and its manufacture has been carried on by him, C. H. Goddard, C. S. Roberts and others. The latest of the names, Oxidaze, is put out by the American Oxidaze Company, which claims to have perfected the formula of Getsinger, and *The Journal* publishes the names of the officers and directors of the said company, which sells the product direct to the public, recommending it as fortifying the body against "the invasions of all germs and infections of whatever name or nature." An analysis of the tablets of Oxidaze showed chloroform soluble matter, 10.98 per cent., water soluble matter (by difference), 81.16 per cent., water insoluble matter, 7.86 per cent. The chloroform soluble matter appears to be, at least in large part, a mixture of volatile oils. The water soluble portions appear to consist of sugar containing some dye and a trace of potassium iodid, the latter amounting to 0.14 per cent. of the tablet. The water insoluble matter consists almost entirely of corn starch. The specimen may be said to consist essentially of sugar containing a small amount of volatile oils, starch and a trace of potassium iodid. It is evident that the tablets now sold as oxidaze are of the same character as those formerly exploited as hydrocine, the difference being in the substituting of a little starch for some of the sugar, the addition of a little more volatile oil and the presence of a minute quantity of potassium iodid. Oxidaze is, therefore, just as worthless and irrational a cure for tuberculosis as it was before the change of name.

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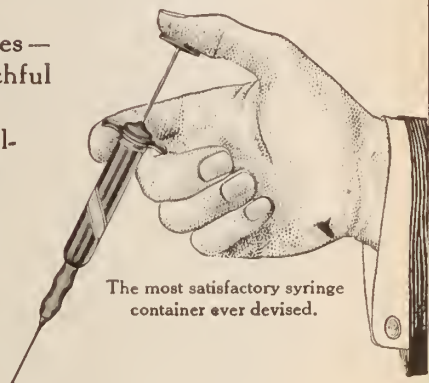
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THERAPEUTIC NOTES.

FUEL FOR THE BODY.—One of the best means of supplying the body with fuel is cod liver oil, for in it are the elements needed by the tissues to take the place of those lost in the phenomenon of energy-production. This is the reason that cod liver oil is widely resorted to for the purpose of restoring strength and energy to an organism, reduced in vigor as a consequence of a protracted illness. In the selection of a special preparation of the oil, the two determining factors should be: 1st, efficiency; 2nd, palatability, and since these two requirements are clearly met by Cord. Ext. Ol. Morrhuæ Comp. (Hagee), it is in a vast majority of cases, the agent of choice. Cord. Ext. Ol. Morrhuæ Comp. (Hagee) contains in pleasant form the active principles of the oil, reinforced by the hypophosphites of soda and calcium, and may be ordered with every confidence in its power to charge the tissues with needed fuel.

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A CASE OF TETANUS TREATED BY CHLORETONE.—By Roland A. Hobbs, M. R. C. S., Eng., L. R. C. P., Lond., House Surgeon, Royal Surrey County Hospital, Guildford. With a note by Eric W. Sheaf, M. A., M. B., M. C., Cantab., Honorary Assistant Surgeon, Royal Surrey County Hospital.

The treatment of tetanus is so very unsatisfactory that a case such as the one described below, in which the most dreaded symptoms of the disease were checked, is worthy of notice:

J. A., aged 46, a fishmonger, was admitted to this hospital under Dr. Mitchell, to whom I am indebted for permission to publish these notes. Dr. Sheaf also watched the case in consultation with Dr. Mitchell.

A nail projecting from his boot caused an abrasion on the plantar surface of his big toe on January 16th. Rigidity of his jaw developed on January 22nd—six days after the injury—and he was admitted to this hospital on January 25th with all the typical symptoms of tetanus except convulsions. The trismus was so advanced that the teeth could only be separated about $\frac{1}{8}$ in.; there was marked abdominal rigidity

and dysphagia, stiffness of the neck muscles, and slight retraction.

He was given 100 c. c. of antitetanic serum, fomentations to both feet, as there were abrasions on each, and an injection per rectum of olive oil \mathfrak{z} ij containing chloretone 30 grains. This was followed by a marked decrease in the rigidity of the jaw; he swallowed much more easily and slept well.

For the next four days his condition remained on the whole satisfactory, although his temperature rose and reached 100.6° F.

During this period the following doses of chloretone were given, all per rectum, with olive oil:

January 26th, 40 grains and repeated at night.

January 27th, 40 grains and repeated at night.

January 28th, 120 grains, in three doses.

January 29th, 80 grains, in two doses.

January 30th, 30 grains, early in the morning and repeated.

100 c. c. of antitetanic serum was injected on January 26th.

The chloretone was given when indicated by an increase in the rigidity.

A marked decrease in the trismus was constantly noticed after every dose of chloretone, the effect being observed at first as early as an hour after the administration of the drug, but later it took about two hours to make any marked difference.

On January 30th the throat was getting very full of mucus, which was improved by injections of atropine sulphate 1/100 grain.

Towards the evening he became drowsy and passed into a very heavy and semicomatose condition, probably due to the effects of the chloretone combined with the severe constitutional disturbances resulting from the disease itself.

There were no special symptoms of poisoning, but his condition of stupor was somewhat alarming. The temperature now reached its maximum of 102.6° F. With the administration of oxygen and strychnine 1/30 grain alternating every three hours with caffeine 1 grain hypodermically, and continuous saline per rectum, his condition gradually improved.

He was given another 100 c. c. of antitetanic serum. The rigidity never became marked again, and beyond an antitoxin rash he had no untoward symptoms, and made a rapid recovery, leaving the hospital for the convalescent home fairly strong, having been in just under six weeks.

The total amount of antitetanic serum and chloretone given was: Serum, 390 c. c.; chloretone, 420 grains.

To summarize, the points to be specially noted are: 1. The early onset of symptoms and consequent grave prognosis.

2. A marked decrease in the rigidity was noted a definite period after the administration of chloretone, the trismus being relieved in a constant and remarkable manner.

3. The complete absence of convulsions from beginning to end of the illness.

4. The relief of trismus enabled the patient to take ample nourishment throughout and thus maintain his strength.

5. The rapid recovery of the case.

I am firmly convinced that this man's life was saved by chloretone, although the part played by the antitetanic serum must not be disregarded.

NOTE BY DR. SHEAF.

Tetanus kills partly by the direct action of the toxin and partly by the exhausting effects of the convulsions.

By the trismus, and dread that taking food will bring on a convulsion, starvation is added to the horrors of the disease, and sleep is prevented by the painful muscular contraction.

In treating the disease there are therefore the following indications:

1. To prevent further absorption of tissue.
2. To neutralize the circulating toxin, for it is at present impossible to affect the toxin which has already combined with the nerve cells.
3. To relax the muscles and prevent the tetanic spasms.

If this last can be accomplished the patient will escape the exhaustion and be able to take food and to sleep. Consequently he will be in the best position to fight the disease.

To this end many drugs have been used with more or less success, and of these magnesium sulphate has recently found most favor.

Dr. C. T. McClintock and Dr. W. H. Hutchings, of Detroit, Michigan, U. S. A., undertook an experimental study of the various drugs used for this purpose, and were convinced that chloreton was the best substance hitherto employed.

Subsequently Dr. Hutchins published 6 cases treated with chloreton, with 4 recoveries.¹

Of the 2 cases that died, one succumbed on the eleventh day of peritonitis, having been free from tetanus symptoms for several days; the other was a very severe case, symptoms appearing four days after injury.

In the next case treatment with chloreton was begun; the convulsions were only partially controlled at first, later complete relaxation was obtained, but he died of circulatory failure.

Dr. Hutchings points out that in animal experiments chloreton poisoning killed by respiratory failure, and that therefore his last case died of tetanus and not of chloreton poisoning. For the same reason I do not think that the serious symptoms on January 30th in our case were due so much to the chloreton as to the disease itself.

These results and the result in the case reported above are very satisfactory. Chloreton has the advantage over the intraspinal injection of magnesium sulphate in its greater safety, and from these cases its therapeutic action seems to be equally satisfactory. —Reprinted from the *British Medical Journal*, Nov. 5, 1910.

IDEAL CONDITIONS OF SERUM MANUFACTURE.—If there is one therapeutic agent which, more than another, should be prepared with scrupulous care, that agent is diphtheria antitoxin. Its preparation should never be entrusted to the inexperienced or to those who are hampered by lack of facilities. It should have its origin in the blood of healthy horses—animals whose blood is known to be pure. The welfare of the diphtheritic patient demands a serum from which every element of conjecture is eliminated. In the opinion of many physicians these essentials are best exemplified in the Antidiphtheric Serum of Parke, Davis & Co. Certain it is that this antitoxin is manufactured under conditions that are ideal. Miles removed from the smoke and dust of Detroit, hundreds of feet above the river level, the company maintains a large



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A PLEASANT, EFFICIENT LAXATIVE.—The desirable qualities of a first-class laxative are efficiency and freedom from unpleasant taste. The lack of either to just that extent disqualifies the product for use in the treatment of chronic constipation. That it is difficult to find a palatable and efficient laxative in the same medicament is a pretty generally accepted fact. It is possible to do so, however, and Cascara Evacuante may be cited as proof of that possibility. This preparation is pleasant in taste, and in doses of 15 to 30 minims in water it performs its duty quickly and well, without incidental nausea or distress. That is why children rarely object to taking it, and adults prefer it to other preparations.

The product is manufactured by Parke, Davis & Co. and is procurable from any well-stocked retail pharmacy. To avoid confusion with other so-called aromatic cascara, however, it is well to specify clearly "Cascara Evacuante, P. D. & Co."

THE TREATMENT OF CONVULSIONS IN INFANTS.—By Harry Tyldesley, M. D. One of the most frequent morbid conditions encountered in the treatment of the diseases of child life is convulsions.

The treatment of convulsions very naturally resolves itself into two indications—the removal of the cause and the institution of those measures—which relieve the congestion of the brain.

A study of the case in hand will reveal the causative influences and suggest those remedies that are indicated to remove the cause. Where the stomach is full of indigestible foods it must be emptied, and in a like manner other remedial measures must be addressed to the removal of the cause.

It is highly important that the physician go to work with the most earnest efforts to relieve the convulsive seizure. The inhalation of chloroform is useful in some cases. It should be given until there is no convulsive movement. I put all infants as soon as I see them in a bath of warm water, and give them a dose of Neurosine. This agent speedily overcomes the congestion of the brain and the child falls into a peaceful sleep from which it usually awakens with a clear head and no tendency to convulsions. Besides this Neurosine contains no opium, chloral or morphine, and it is, therefore, admirably suited to these cases.

THE STATUS OF THE MIDWIFE.—T. Darlington (*Am. Jour. Obst.*, May, 1911) believes that the midwife as she practices to-day is a menace to the lives and health of a large percentage of the mothers and infants in the city and state of New York—for the evil is widespread. The existing provisions for training and control are inadequate to meet the situation. Provisions for the thorough training as well as control of midwives is an urgent and imperative need. The law empowering the Department of Health to regulate the practice of midwifery is the logical beginning, but it will have to be strengthened by the establishment of schools for training. The medical profession should support and uphold the effort which is being made to better the practice of midwifery, which has been so degraded in the hands of women acknowledged to be for the most part dirty, ignorant and degraded.

HOSPITAL MUST BAR ALCOHOL.—The will of William T. Wardwell, once treasurer of the Standard Oil Company, and for many years head of the Prohibition party in New York, leaves \$100,000 to the New York Red Cross Hospital at Central Park West and 100th Street, on condition that the hospital continues to refrain from the use of alcohol in treating patients. This sum is to go to the hospital upon the death of Mrs. Wardwell, the will stating that it is “on condition that the hospital be con-

tinuing substantially the methods of treatment now in practice in the said institution with respect to the non-use of alcohol as a medical agent, avoiding even tinctures where equally desirable action can be obtained from fluid extracts or alkaloids, and reducing to a minimum the use of other narcotics or potent drugs which might induce a habit or produce injurious after effects.”

By the terms of the will the question whether the hospital has observed the terms of the bequest is to be submitted to three arbitrators, one chosen by the hospital, one by the executors, the third by the other two. If the hospital attempts to get the money by any other means the whole bequest is annulled. It is a pity that by any means whatever a hospital should forfeit the use of a remedy, such as alcohol, which when properly employed, is hardly replaceable by any other for its beneficent effects.—*The Medical Times.*

When the baby suffers frequently from colic and is troubled with rumbling in the bowels and general restlessness, an irrigation of the colon with salt solution, using a medium sized soft rubber catheter, will usually give relief. The solution should be injected a little at a time and continued till it returns clear.

The weaker the baby the more it becomes exceedingly important to prevent heat loss. To keep the baby thoroughly warm, to prevent chilling at any time, and to keep the supply of air pure, are all important points to be watched.

When the cord remains constantly moist a washing with alcohol, about 95 per cent., will help to improve conditions. The navel should always be regarded as a wound, requiring the most exact surgical cleanliness.

When the baby has difficulty in nursing, the application of a hot fomentation to the breast before each nursing, over the nipple, will help to lessen the trouble by bringing the milk to the surface.

A great deal can be learned as to the child's condition by carefully observing stools. The normal stool in the new-born is dark green for two or three days, gradually becoming brown. The change from brown to yellow is gradual, and by the end of the first week the stool should be a golden yellow. When a baby is not getting sufficient food the color of the stools will remain brownish rather than yellow.—*Medical Brief.*

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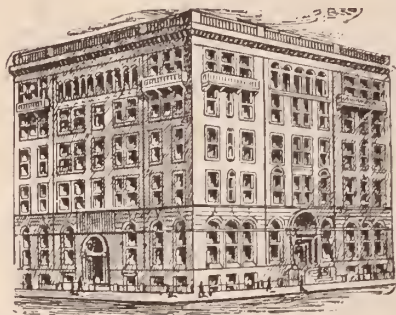
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When I fell sick in China, they called the doctor in; he pounded on a tom-tom, and raised a frightful din. He said: "The evil spirits must first be chased away, and then I'll change the treatment, and make a tea of hay; I'll give you shredded toadstools, and ink and powdered snakes, and burn some yellow feathers, and thus cure up your aches. This house can know no healing till ghosts are chased therefrom; so watch me play the cowbell, and swat Thomas-Tom." When I fell sick in Kansas, the stern physician came, and spent the morning working the diagnosis game; he pinched me in the larynx, he poked me in the lung, he hit me with a hammer, he squinted at my tongue. And then he groaned with pity, and scratched his whiskered jaw, and said: "It's bunionitis—worst case I ever saw! Just bring an ax and bucksaw, and water in a keg, and sit upon his forehead—I must hew off his leg." When next disease has got me, and I am sore afraid, I'll hustle back to China, where doctors know their trade.—*Western Med. Review.*

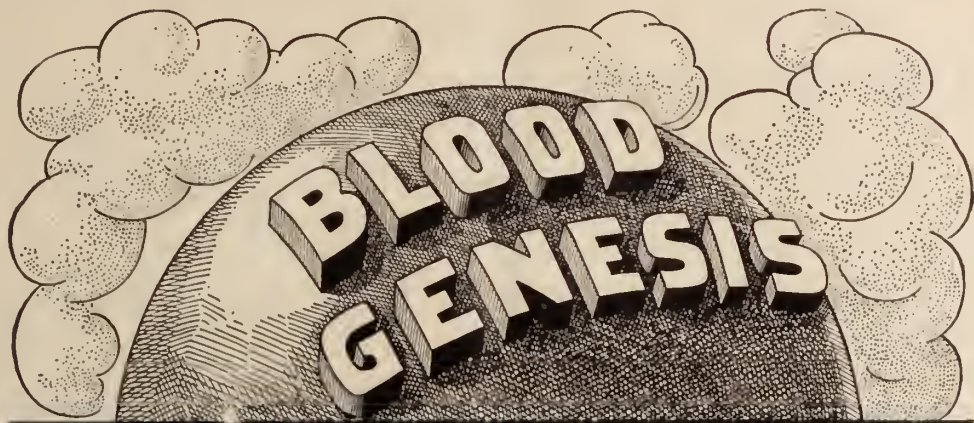
FARE THEE WELL.

[Prof. Metchnikoff recommends the removal of the large intestine as a means of prolonging life.]

Fare thee well! And if forever,
Large intestine, fare thee well!
Metchnikoff declares that I can
Do without thee just as well.
Furthermore, he says, without thee,
I shall live a longer life—
Hurry with the anesthetic,
Hasten with the carving knife!

Soon, O useless large intestine,
Where the germ of age doth grow,
You may meet with the appendix
That I lost some time ago.
In the wondrous realm of science
Such astounding things befall—
Soon it may become the fashion
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ORIGINAL ARTICLES.

RADICULITIS.*

BY

DR. A. H. BELLEROSE,
Rutland, Vt.

Radiculitis is an inflammatory process, toxic or infectious, of the radicle of the spinal nerves. We call "radiculi," the nerve fibrils which start from the radicular cells of the posterior or the anterior horn and emerge from the collateral grooves of the posterior or anterior cords and in

intervertebral foramen, (hole) the peripheral nerves send a small meningeal branch, which goes back in the spinal canal and enervates the meninges, and then subdivides itself in two branches, the anterior and posterior. The posterior branches are generally smaller than the corresponding anterior branches. They run separately and enervate the muscle of the back and occiput, and the skin of the occipital, dorsal, lumbar and sacral regions. The anterior branches, which are larger, form an anastomosis with the ganglion of the sympathetic nerves, by the "rami communicantes." They are separate in the dorsal region and form the inter-

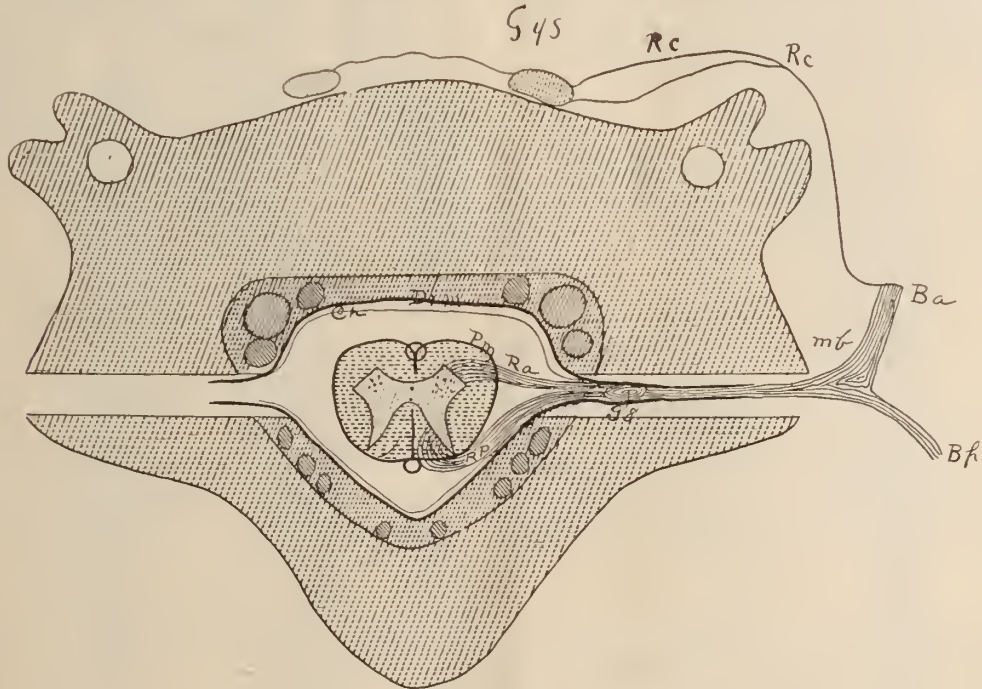


Fig. I.

form of strands, pass through the dura mater, which gives these strands a sheath enveloping the posterior and the anterior radicle, and together pass through the intervertebral hole, to form the root of the peripheral nerve. The anterior radicle join the posterior, just below the ganglion of the latter, to form the peripheral nerves, which are mixed, motor and sensory. Just out of the

costal nerves. They anastomose themselves in the cervical, lumbar and sacral regions to form the cervical, brachial, lumbar, sacral and coccygeal plexus.

CAUSES.

In 75% of the cases, syphilis is the cause of the radiculitis. It is generally an accident of the tertiary period. We find frequently in the neighborhood of the radicle affected, patches of meningitis. Gonorrhoea, rheumatism, puerperal

*Read before the Burlington meeting of the Vermont State Medical Society, October, 1912.

septicemia and influenza are also the causes of radiculitis. I think that in this country influenza is very often the cause of this spinal trouble.

LESIONS.

The lesion may be primitive or secondary. In the primitive radiculitis, infection determines an inflammatory focus, on the radicle, causing an endoneuritis. The perineuritis is also very well marked. Very often we find syphilitic gumma on the radicle. Besides the inflammatory focus, patches of pachymeningitis or some other meningeal lesions envelop the spinal cord's circumference and cause atrophy by the destruction or compression of the anterior radicle. If the lesion simply causes irritation, we have radiculalgia; but if the lesion is more severe and causes a compression, which destroys the fibrils, we have a radiculitis, which we recognize by the gravity and persistence of the symptoms.

FORMS.

By the anatomo pathology of the spine we may consider three forms of radiculitis.

1st. The sensitive radiculitis, when the lesions are located on the posterior roots only. This is the most common form.

2nd. The sensitivo-motor radiculitis, when the lesion involves the anterior and posterior roots.

3rd. The motor radiculitis, when the lesion involves the anterior root radicle only. This form is very rare and may exist in concomitance with poliomyelitis. Then it is always secondary and follows other symptoms more pronounced.

SYMPTOMS.

The symptoms may vary according to the region of the spine involved; but there are some general symptoms, which are the same for all peripheric nerves, a neuralgic pain; but of a radicular topography and not of a truncal topography. I will explain what is meant by a radicular topography. About 25 years ago Duchene de Bulogne began to diagnosticate the trouble of the radicle of the spinal nerve. Few years after, Erbe described a paralysis, called Erbe's paralysis, which is no more than a radiculitis of the fourth, fifth and sixth cervical.

Deferine Klumpke described the paralysis inferior of the arm, which is a radiculitis of the

eighth cervical and first dorsal; then Deferine described a radiculitis of the trunk; but it is Sherington, to whom we are indebted for making light on this subject. In his experiments on the monkey, he established the topography of the sensibility that is accepted today. Sherington proceeded by exclusion. He extirpated on a monkey, all the roots of the brachial plexus but one, and tried to find what was left of the sensibility in the arm.

1st. He extirpated all the roots of the brachial flexus but the fifth cervical, and found that it enervated all the skin of the deltoid and the biceps.

2nd. He extirpated all the roots of the brachial flexus but the sixth cervical, and found that it enervated all the exterior part of the forearm.

3rd. Then all the roots of the brachial flexus but the seventh cervical, and found that it enervated the exterior part of the wrist and hand, from the middle of the median finger on the dorsal surface, and this, by longitudinal strips (band), following the axis of the arm. He also noticed that the sensibility did not pass over a median line, on the anterior surface of the arm, which started from the inner surface of the median finger, passing by the "gouttiere" of the hand, the middle of the elbow joint, and the middle of the shoulder. On the posterior surface of the arm, a line starting from the middle of the dorsal surface of the median finger, passing over the olecranon and the middle of the posterior surface of the shoulder; thus separating the arm in two longitudinal sections, or area of anesthesia. Thus going further by extirpating all the roots of the brachial flexus except the eighth cervical and first dorsal he found that sensibility existed over all the inner surface of the arm and forearm up to the anterior and posterior median line. He continued his experiments for the remainder of the spinal system, and found all the radicular topography. Now you will notice that these radicular areas of sensibility are by horizontal sections or strips on the trunk. They are also, likewise on the arms. If you have the arms extended at right angles, you will find that the areas of sensibility are also horizontal. It would be the same in the inferior limbs, if our subject were an acrobat so he could spread on the floor at right angles.

SYMPTOMOLOGY.

As I said above there are some general symptoms, common to all radiculitis. 1st. A process of irritation or compression irritating

axis of the part affected. After certain number of days, those pains become very intense, and after a few weeks or months, they decrease intermittently. Then comes the period of

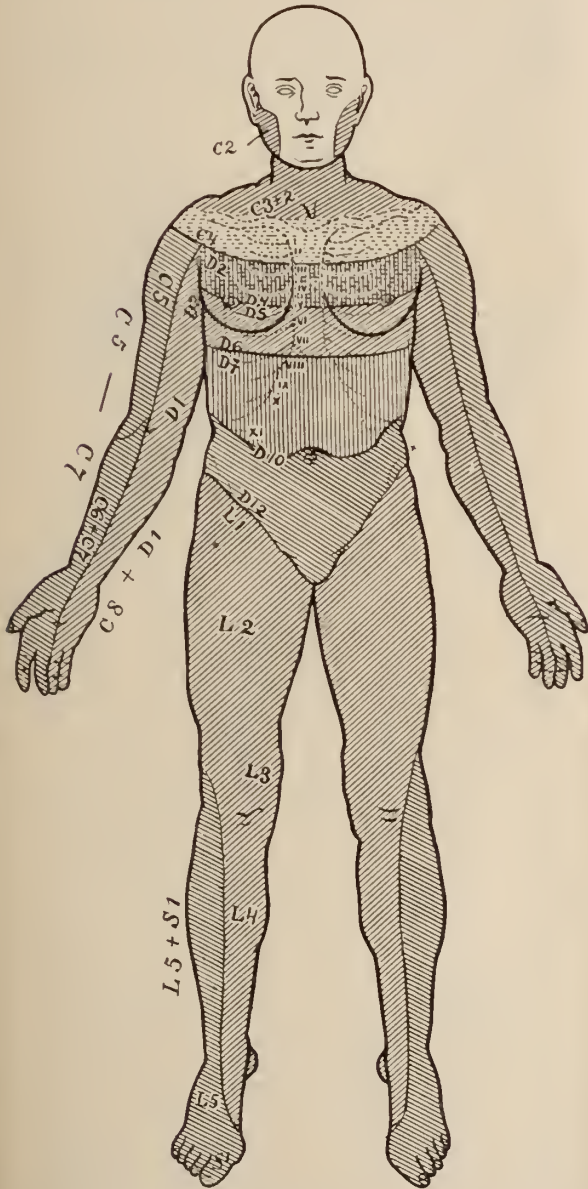


Fig. II.

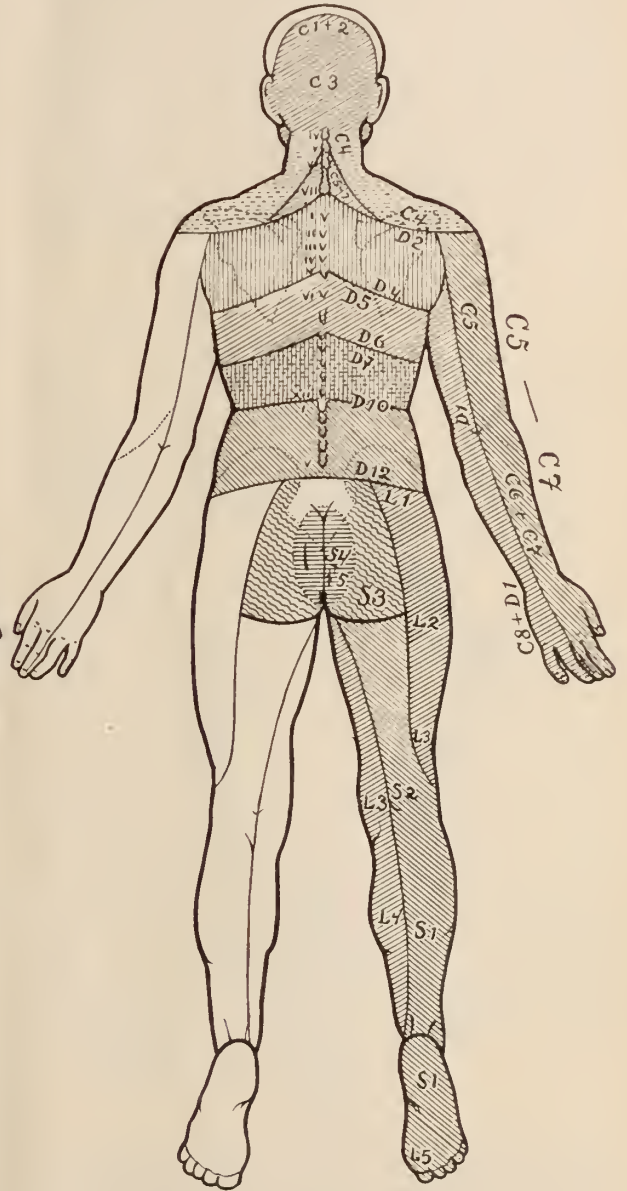


Fig. III.

or compressing a certain number of radicle in- side of the spinal canal causes at first a pain of radicular topography, or to explain: a strip of hyperesthesia of the skin, a sensation of tearing, piercing, or burning, in the longitudinal

anesthesia and atrophy. The anesthesia is at all modes; heat, cold, tactil and pain. In the beginning those severe pains are spontaneous. They come when the patient is at rest. They come in the middle of the night; but are more

severe when the patient makes an effort to rise. They are intermittent in their acuteness, there is a period when the patient does not suffer as much; but he is never free from pain. The characteristic symptom of radiculitis, is the severe exacerbation of the pain when the patient sneezes, coughs or makes an effort to rise. Perhaps the most of you have felt these pains. After a hard spell of sneezing, you have felt a painful sensation, radiating from the side of the neck through the arm to the finger and sometimes to the trunk. These painful sensations

motor troubles. A person who is suffering with an inferior brachial radiculitis, which is caused by the inflammation of the eighth cervical and first dorsal and second lumbar, will have a hard edema of the hand and arm. The parts will be cold, dry, cyanotic at the period of destruction and will be congested, hot, perspiring at the period of irritation. You

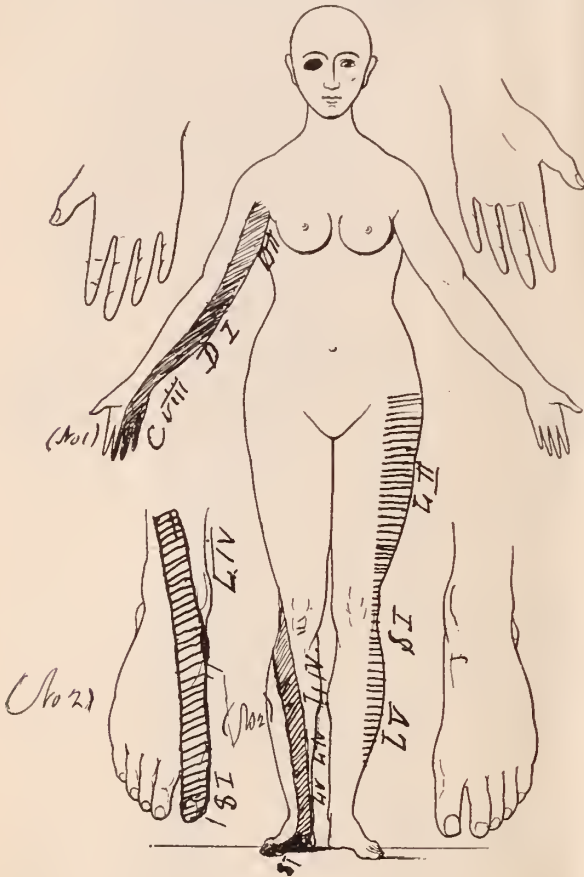


Fig. IV.



Fig. V.

are due to the compression of the radicle, by the cerebro-spinal fluid, in the sheaths of the radicle, and this is one of the proofs that the lesion is situated in the intraspinal canal. Now knowing that a ganglion of the sympathetic system forms an anastomosis with the spinal nerve root, by its rami communicantes, it will follow that a process of irritation or compression of the spinal root, causing sensitive and motor disturbances, will also cause vaso-

will also have some oculo pupillary trouble. At the period of irritation, the palpebral lumen will be wider, the globe of the eye larger, and the pupil more dilated on the affected side. At the period of destruction, the palpebral lumen will be narrower, the globe of the eye smaller and the pupil more contracted. The reason for this oculo pupillary trouble, is that the branch of the sympathetic nerve, which controls the nutrition of the globe of the eye, emerges with

the first dorsal and second dorsal roots and goes up to join and follow the ophthalmic branch of the fifth cervical pair, and supply the eye with its vasomotor.

If a person suffering, or who has suffered, with a supposed neuralgia of the brachial nerves of the right or left side, should complain that he has, or that he has had, severe trouble with his right or left eye, it is probable that he has, or has had, a radiculitis of the eighth cervical, first and second dorsal, especially if he has exophthalmia with mydriasis or enophthalmia with myosis.

LUMBOSACRAL RADICULITIS.

The study of the radiculitis of the inferior limbs is important, because many cases are diagnosed simply as sciatica. Dejerine has done more to elucidate this disease than anyone else. He maintains that the name of radicular sciatica is not always proper, because the trouble of the sensibility and motivity are not always limited to the areas covered by the sciatic. The sacral plexus is formed by the roots of the fourth lumbar, fifth lumbar, first sacral, second sacral, third sacral and fourth sacral. The sciatic receives nothing or almost nothing from the fourth sacral. The crural nerve, according to André Thomas, which is very often affected in radiculitis of the inferior limbs, is not contained in the sacral plexus, its principal branch being from the third dorsal. Consequently, a lesion of the root of the plexus lumbosacral will cause trouble of the sensibility and motivity in a territory that is not affected by the sciatic. That is why the name of lumbosacral radiculitis is more proper. It is true that in the great majority of cases, a lumbosacral radiculitis will cause trouble in the territory enervated by the sciatic; but a thorough analysis of the symptoms will help to differentiate between the two. Here more than in any other radicle the distinction made by Landouzy regarding sciatica in general should be maintained. There is radiculalgia and radiculitis as there is neuralgia and neuritis. Radiculalgia if there is only simple irritation. Radiculitis if there is destruction of the nervous root.

The symptoms of the ordinary sciatica are often found in the radiculitis lumbosacral. The signs of Lassegue which consist in producing a severe pain by forcing the flexion of the thigh on the basin, the leg being in extension. The

points of Valleix are not constant. The exaggeration of the pain by the pressure of the nerve trunk is much less than in the neuritis of the sciatic. The spontaneous sharp pain following the nerve and extending in the region of the crural nerve is experienced more frequently in radiculitis. The reverse of Lassegue's signs which consists in the forced extension of the thigh on the basin will produce a severe pain in the region of the crural nerve. But what helps to detect the cause of the real trouble is the analysis of the objective sensibility. There is a well marked hyperesthesia to the cold, to the heat, to the pain of a radicular topography and it is the same for the anesthesia at a more advanced period.

The hyperesthesia or the anesthesia will very often occupy the external part of the leg. Sometimes it will occupy a strip starting from the sacrum ending in the big toe passing from the posterior part of the thigh just below the knee joint to the anterior part of the leg to finish on the anterior surface of the big toe as represented in Fig. 5, this would correspond almost exclusively to the first sacral.

The muscular atrophy at the advanced period is almost as typical as the anesthesia. It does not affect only the muscles enervated by the sciatica, but very often the muscle enervated by the crural. When the quadriceps which is enervated by the crural, or the adductors which are enervated by the obturator are atrophied, think of radiculitis. The vaso-motor troubles are very frequent. If a patient suffering from a supposed sciatica should have a cold, dry, shiny, hard edematous leg, think of radiculitis, and question the patient about pains when coughing, or sneezing, and analyze the sensibility. Then if you are not satisfied perform a lumbar puncture.

REFLEXES.

The reflexes are often modified. At the period of irritation, they are increased and at the period of destruction, they are diminished or abolished. The Achillean reflex is oftener affected, but the alteration of the patellar reflex in the course of a sciatica would indicate that the third lumbar segment is affected because the nervous center of the patellar reflex is situated on the third lumbar and consequently this sciatica would be a radiculitis.

EVOLUTION.

When the patient is not treated at all or not treated right, the roots pass by the process of degeneration and the pains disappear. To the period of hyperesthesia follows the period of anesthesia and sometimes the period of atrophy and paralysis of a radicular type.

DIFFERENTIAL DIAGNOSIS.

When the lesion is situated in the lumbosacral region, it resembles a neuritis of the sciatic nerves; but in radiculitis the nerve trunks are very much less painful to pressure than in neuritis. The sign of Lassegue is present but there are no points of Valleix. The extension of the thigh on the basin with the leg in extension will cause a severe pain in the region of the crural. The troubles of sensibility are observed first, then the motor trouble and then the atrophica and all these troubles have a radicular topography for the muscles as well as for the skin. In case of doubt the lumbar puncture will elucidate the case. The polynuclears are very rare in the cerebrospinal fluid, because the radiculitis evolves more like a subacute or chronic disease; for this reason we find in a great majority of cases a lymphocytosis more or less abundant. The vasomotor signs are also present. 2nd. With a beginning poliomyelitis affecting also the anterior radicle, it is very rare to see a motor radiculitis exclusively, and radiculitis is always accompanied by severe pain and is very seldom seen bilaterally. In poliomyelitis the paralysis is complete after three to five days after the beginning of the trouble.

3rd. Hematomyelia may produce motor and sensitive troubles, but the pain is very sudden and "foudroyant" and the sensitive and motor troubles have a Brown-Sequard character. That means motor hemiplegia in one leg and sensitive hemiplegia in the other leg. The lumbar puncture will also show sign of hemorrhage in the spinal canal. In syringomyelia there is a disassociation of sensibility. The tactile sense is conserved; but the thermic, pain, and profound senses are lost and there is dystrophic accident. In difficult cases we have the sign of sneezing, in radiculitis and the trouble of the sensibility at all modes. In Pott's disease, the trouble is bilateral and may be discovered by the percus-

sion of the vertebral column which is sore and rigid.

4th. Neoplasms. In the beginning, it is very difficult to differentiate, but after a certain time the pains increase instead of decrease. There is also hemiplegia and hemianesthesia but not of radicular type. It is more of a Brown-Sequard type.

TREATMENT.

As the trouble is in 75% of specific origin. Iodide of mercury in injection in the young and adults.

(Formula) I.

Bi-iodide of mercury	.....grammes	0.10
Iodide of Sodium	..... "	0.10
Aqua destil. sterilized	..... "	10.00

One cc. contains one centigramme (gr. $\frac{1}{6}$).

The dose is 2 cc. a day for 20 days but in severe cases we can inject 3 and 4 cc. In the old people iodide of potassium gives the best results. For the pains in the first period antipyrine at the dose of 15 grains 3 or 4 times a day will produce relief.

(Formula)

Antipyrine	.....grammes	0.50
Caffeine	..... "	0.05
Sodii Bicarbonas	..... "	0.25

4 or 5 times a day.

Morphine and atropine in hypodermic injection when absolutely needed. Salicylate of soda when it is of rheumatic origin.

Or Aspirinegrammes 0.50

4 to 6 times a day.

Antipyrine and hexamethylenamine when it is of grippal nature. In the period when the pains are too severe the epidural injections of cocaine or stovaine or even of normal salt solution. This method has for an object to introduce a medicine in the epidural space of the sacral region. The patient is placed in the genu pectoral position of the decubitus lateralis. The last sacral apophysis and the two sacro posterior inter tubercles form a triangle. The point of election is situated just above where the inter gluteal fold commences. We introduce the needle at an angle of about 20 degrees and we push it until we have perforated the obturator membrane; then we lower the syringe horizontally and push it forward in the sacral canal and inject the

liquid. Small doses of either cocaine or preferably stovaine.

Formula II.

Bi-iodide of mercury grammes 0.40
Olive oil steril. " 100.00
One cc. of this solution contains 4 milligrammes. Iodide dose 4 cc. for 20 days.

CONFESSION.

I prepared this paper mostly from notes taken at the conferences given by Professor Dejerine at "La Salpetriere," of Paris.

From "Maladie de la Moelle Epiniere."

From "La Pratique Neurologique," by Pierre Marie.

From "Le Diagnostic Des Maladies Nerveuses," by Purves Stewart, London.

From "Les Centres Nerveux Cerebro Spinaux," by Van Gehuchten, of the University of Lanvain.

DISCUSSION.

Dr. C. H. Haskell.—I think this most admirable paper of Dr. Bellerose would leave one or two impressions that ought not to go unnoticed; the first one is that most inflammatory conditions of the cervical nerves might be attributed to radiculitis and nothing else. In sciatica the loss of lesions should be carefully considered and eliminated. There are so many different forms of radiculi, depending on whether the posterior or anterior nerves are involved, it is important to eliminate other conditions in order to consider that one disease. I have not yet learned the meaning of the coughing and sneezing referred to by Dr. Bellerose. I would like to ask the doctor if he has had any cases of radiculitis of the lower portion of the spine which produces coughing and sneezing?

Dr. A. H. Bellerose, Rutland.—Sneezing and coughing are not symptoms of radiculitis; but produce a symptom which is an exacerbation of pain in the part affected, when the patient sneezes or coughs. As I have explained before, the cerebro-spinal fluid is forced in the sheath of the radiculi, when they pass through the meninges dura-mater. This sheath is formed by the dura-mater and finishes at the intervertebral ganglion and has a funnel shape. So, when the cerebro-spinal fluid is forced in this funnel by the pressure exercised in the act of sneezing or coughing, it compresses the radiculi and causes an exacerbation of pain in the part affected.

I have never had any experience about the peripheral neuritis causing a cough. The only thing I know is that in cases of peripheral neuritis it has been found that some changes had taken place in the spinal cord, when examining with the microscope a transverse section of the spinal cord. Those changes are not due to a primitive lesion of the cord; but to the atrophy or destruction of the peripheral nerve, which does not stimulate this part of the cord.

Tabes.—In tabes the patellar reflex is also lost; but the trouble is bilateral. In radiculitis it is unilateral. In tabes, the Argyll-Robertson pupil is present and is not in radiculitis.

A PRELIMINARY REPORT OF OSTEOPLASTY AND BONE TRANSPLANTATION IN POTT'S DISEASE OF THE SPINE.*

BY

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To-day I present to you a preliminary report of work done by the use of osteoplasty and bone transplantation in the treatment of Pott's disease of the spine, with a view to securing fixation of the spine internally by means of natural processes of repair. This paper is based on the treatment of eighteen cases, four of osteoplasty and fourteen of bone transplantation from the tibia.

The osteoplastic procedure herein described was applied to the first four cases reported below, only, and the technique and results obtained were presented in abstract at the meeting of the American Orthopedic Association, May 15, 1911.

In the *New York Medical Journal*, for May 27, 1911, Hibbs reported independently a very ingenious osteoplastic procedure to accomplish the same object. By this method, periosteal flaps, separated from the spinous processes and sutured together, are relied upon largely to proliferate sufficient bone for fixation.

It is feared that these periosteal flaps of themselves cannot be depended upon to proliferate bone even in a small amount, and for extensive and conclusive data upon this subject, reference is made to Macewen, *Philosophical Transactions*, Series B., Vol. 199, pp. 253-279, and to the same authors very recent and admirable monograph: *The Growth of Bone*, in which he states, after citing many convincing experiments and clinical experiences: "While not underestimating the periosteum as a limiting and protecting membrane, of great use in physiological and pathological conditions, there are no data to indicate that it can, of itself, secrete or reproduce

*Read before the Burlington meeting of the Vermont State Medical Society, Oct., 1911

bone. It (periosteum) has no osteogenic function," and further states that bone is reproduced by the proliferation of osteoblasts derived from pre-existing osseous tissue, as a bone graft and that its regeneration takes place independently of the periosteum.

Also that the periosteum in the case of osteomyelitis proliferates new bone, but only when osteoblasts have migrated into it having been previously influenced by some stimulant, as an underlying acute infection.

The author has unintentionally confirmed in several instances the inability of the periosteum to reproduce bone, when not previously stimulated.

At the Loomis Laboratory, Cornell University Medical College, most of the diaphysis of dogs' ulnas have been removed leaving the periosteum from the inner side of the bone attached to the muscles, etc.

The portion of ulna thus stripped from the periosteum has been split into equal halves, one of which was covered with periosteum. This half has been in each instance implanted into the dog's spine. Bone has failed in every instance to proliferate in the leg from the periosteum, which was left from the ulna.

It is needless to remind you of the inefficiency of the present ambulatory treatment of Pott's disease, especially when it involves the upper dorsal region. Ridlon and Jones' Lectures on Orthopedic Surgery, 1899, have stated it thus: "In the upper dorsal region, from the first to the sixth vertebra, the deformity may be expected to increase under any form of treatment which does not include prolonged and uninterrupted recumbency as its essential feature." Schapps (1905) in discussing this statement, adds "this is equally true as to the efficiency of recumbency and the inadequacy of the old methods of treatment in the upright position."

We need only visit our best regulated clinics and examine the old and the present tracings to be convinced of the truth of these statements. In addition to the author's own observations of these conditions two articles which appeared in the *American Journal of Orthopedic Surgery*, of November, 1910, by Prof. Lange and Dr. Brackett, stimulated the author to endeavor to develop an operative method which should have some, if not all the advantages of an erosion or excision of the tubercular knee joint, or of the author's operation for hip joint disease of tu-

bercular origin in the adult, and would produce absolute immobilization and support, by bony union of the spinous processes of the few vertebrae involved, and of the healthy ones on each side of them. In treating the knee joint as soon as the bony ankylosis is established, although only a fractional part of the diseased tissues may have been removed, it is surprising how rapidly the tubercular process subsides, and a complete recovery with a stiff joint takes place.

Ely from his clinical and pathological studies has especially emphasized this fact. Brackett in summing up his observations on nature's methods of protecting the tubercular vertebral body, says that the most ingenious process made use of is the fusion together of the posterior parts of the vertebrae by a deposit of new bone. This unfortunately rarely happens. In the operation here reported the object was to secure by surgical means the result so rarely attained by nature. This the union of the tips of the spinous processes would secure, and would in two mechanical ways prevent the crushing of the vertebral bodies, by leverage and by splint action.

Eighteen cases have been operated on with this object in view. In four of these cases three or four spinous processes were split into equal halves with a chisel or bone forceps, down to from one to one and one-third inches from their tips, either through a plane approximately parallel with the long axis of the trunk, or at a right angle to it. The tip of the lower half of the superior vertebra was then brought into approximation with the tip of the superior half of the next lower vertebra, after producing green-stick fractures of each, and was fastened with heavy kangaroo tendon. Chips of bone from the spinous processes were then placed between them so as to insure further bone union between these vertebrae. When successful this osteoplastic procedure accomplishes the following results: First, a bony internal splint is produced acting directly on the involved portion of the spine. Second, since each vertebra acts as a lever with the fulcrum at the lateral facets, the body being the anterior arm of the lever, and the spinous process the posterior arm of the lever, if the spinous processes are held together by a bony bridge it will necessarily prevent approximation and crushing of the bodies. To obtain this we must have bony union of vertebra with vertebra, as well as union of the green-stick fractures of the vertebral halves.

So far as can be ascertained this union has taken place in the four cases operated upon by the author in this manner. But on account of the uncertainty that must remain as to its permanent union from the extreme atrophy and rarefaction of the spinous processes of the tubercular vertebrae and of the large amount of cartilage found in the vertebrae of small children, with its slowness of union and lack of support, it has seemed best to devise a more reliable procedure, and one which should give firm support from the beginning. These requirements can be fulfilled in no other way than by a strong bone graft.

Therefore the procedure has been changed in the last fourteen cases operated upon, and bone grafting has been resorted to with the most gratifying results.

With this in view the succeeding fourteen cases were operated by the following technique: Patient in ventral position. An incision was made over the tips of the spinous processes of the vertebrae involved and one healthy vertebra on each side with the kyphosis in the center. Each process was then split longitudinally for about one inch into two portions with approximately one-third of the process on the left and two-thirds on the right, (or just enough to one side of the center so as to get a fracture of one portion only). The soft tissues between the processes were then merely separated by blunt dissection or by a scalpel, parallel with the muscles. Green-stick fractures were then produced at the base of the one-third portions of each of the processes. A wedge-shaped cavity was thus produced, ready to receive the bone-graft. A compress of hot saline was then placed over the wound. The leg which had been prepared for operation was then flexed on the thigh, so that an incision over the crest of the tibia could be made anteriorly. A prism-shaped piece of the tibia from its anterior-internal aspect was then removed by means of a chisel, with the periosteum intact on two of its surfaces. The grafts taken have varied in length from three and one-half to six inches; in width from two-thirds of an inch to one and one-eighth inches; in thickness from one-third of an inch to one-half. They were removed quickly and immediately placed in the interval between the portions of the spinous processes. The dense fascia over the tips of the processes was then

approximated by interrupted sutures of No. 3 or No. 4 chromic catgut, thus holding the bone-graft very firmly in place. The skin was closed by a continuous suture of No. 1 plain catgut. The leg wound was treated in a similar way. The time of operation has varied from fifteen to twenty-five minutes. There has been no shock in any of the cases.

Every wound has healed by primary union, and every bone graft, as far as can be determined, has lived. In none of the cases has shock been marked, and the convalescence in each case has been most satisfactory up to the present date.

Of the first seven cases four were in the dorsal region and one each in the dorso-lumbar, cervical and lumbar regions. At the present time six of these cases have no symptoms and are wearing no apparatus whatever. The sixth case, an adult male. Twenty-eight years of age. Operated at Post-Graduate Hospital June 27th, 1911. Is wearing a Taylor brace. He has been back to work as a carpenter over seven months. He has gained 18 pounds, and has no acute symptoms. A large psoas abscess size of one's fist in right groin has become entirely absorbed and disappeared. X-ray examination of all the cases show the bone grafts in place, apparently united to the vertebrae and a marked bone proliferation about them in some cases. The environment of our bone insert is most propitious, in that it is wedged in between several fragments of bone freshly cut. Macewen states that "The vegetative capacity of the bone cell is at least as great as that of the epithelial cell. Diaphyscal bone grafts live and actively proliferate in their new surroundings. Each osseous graft proliferates from its center, the whole fusing together into one mass."

Several German investigators have emphasized the importance of including bone marrow and contend that the power of bone growth and life is thus retained in the transferred bone itself.

Care has been exercised in our later cases to include marrow when taking the implant for Pott's disease.

It is doubtful just how long efficient orthopedic support should be maintained after the operation. I believe it is safe to predict that a few months will be sufficient in most cases.

In order to secure a preliminary recession of the kyphosis it has seemed advisable to place

the patients for a time on convex Bradford frames before operating, and at present several cases are so placed. We feel confident of being able by the operation to hold the correction through the bone graft.

SUMMARY.

1. The inefficiency of all known means of ambulatory treatment previously mentioned, is shown in the tracings of our first four cases, in which the kyphosis continued to increase in spite of all means used under the most favorable surroundings. The patients were placed in

are justified in expecting that if we get the same bony fixation in the spine we shall have the same effect. This is best accomplished by a firm cortical bone graft, with union to the vertebrae involved and to the healthy ones on either side of the kyphosis. This will assure the prevention of further deformity in two mechanical ways, by leverage and by splint action, and should also cause the disappearance of the tuberculous process.

The leverage action arises from the two lateral facets acting as a broad fulcrum in the case of the vertebrae, and the bone graft furnishes a means of holding the long arms of the



Fig. 1. This is an X-ray of one of the early cases. The bone graft is shown distinctly in place.

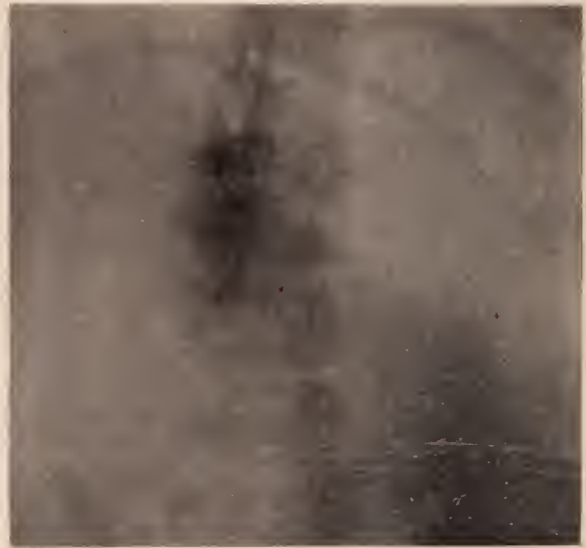


Fig. 2. This skiagram shows the bone graft six weeks after operation. A considerable amount of bone proliferation has occurred.

a well regulated hospital, the Sea Breeze Hospital, at Coney Island, where they were under the constant observation of nurses and surgeons trained for this work. They were, thus, in the most propitious environment that can be supplied for the cure of tuberculosis.

2. It is a well established fact that whenever bony fixation of a tubercular joint has been secured the tubercular process immediately subsides. As the pathology and physiology of bone tissue is the same wherever it occurs, we

levers, or spinous processes together, and preventing the crushing of the bodies of the tubercular vertebrae. It should be noted that the nearer this bridge of bone is to the tips of the processes the greater is the leverage. The spinous processes are split as near their centers as possible, and in such a way as not to cause a green-stick fracture of the larger portion. Therefore the recent objection that the operation is asymmetrical does not hold.

3. This above described bone-grafting procedure is preferable to one in which the breaking or cutting of the spinous processes destroys

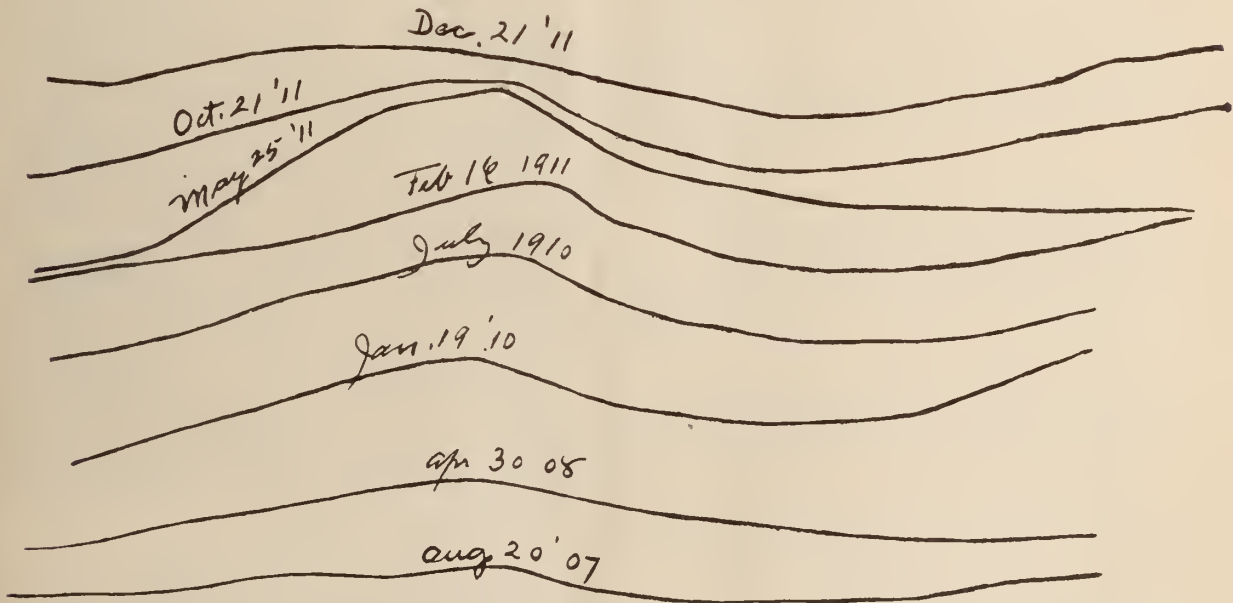
their natural and acquired leverage support entirely or even temporarily until union has taken place. Also it furnishes a continuous bridge of bone spanning the whole number of vertebrae which it is desired to immobilize; it therefore should conform to Wolff's law, and become stronger under the influence of stress.

4. If bony union of graft to spinous process should not occur the same mechanical effect of leverage would still in large degree be obtained from the union of the embedded bone splint to the surrounding dense ligamentous structures.

5. Perfect immobilization and support of the few involved vertebrae in the respiratory area of the spine are secured, which is impossible by any external mechanical device or treatment, the recumbent treatment on a gas-pipe frame not being excepted, because of the constant respira-

sis by long recumbency on a convex Bradford frame should be instituted as a preparatory treatment. This method offers great promise of holding the correction thus obtained. Without this artificial support there is a great tendency to relapse of the deformity, when ambulatory treatment is resumed, on account of the inhibition of the tubercle bacillus to the rapid new formation of bone.

9. A bone-graft is far superior to an internal metal splint, because in accordance with Wolff's law it will become thicker and stronger to hold the weight and strain brought to bear on it. In the case of an internal metal splint, sutures, or screw applied to the bone, no dependence can be placed on them to hold continued weight or strain, on account of the bony atrophy and absorption which occurs around metal. This ab-



tory movement of the ribs and attached vertebrae.

6. On account of the anatomy of the parts it is not necessary to enter the focus of the disease, and therefore primary union of the soft tissues, and immediate bony union can be expected.

7. The normal supports of the spine are not interfered with, since the muscles and ligaments are not cut or separated from the vertebrae.

8. The operation is not a formidable one; the technique is very simple, and the time of operation is short, in two cases being but fifteen minutes. When possible recession of the kypho-

sorption occurs even when no strain is present. Silver wire and screws have been found even a few months after they were put in place, to have fallen out into the soft tissues, after they had become separated from the bone, or had slipped through its structure, in conditions in which there was no strain at all. This reason and the ever present danger of sepsis about buried metal would make bone grafting seem preferable to the internal metal spinal splint of Lange, as was stated in the author's paper in the *Journal of the American Medical Association*, Sept. 9, 1911.

The above are tracings of the spine of one of our later cases and are taken from the time of admission to Sea Breeze Hospital in 1907, to after the bone transplantation operation. This case was unfortunate in being confined to a contagious hospital for several weeks in the first part of 1910, where all orthopedic treatment was omitted.

The tracings show a constant increase of the deformity from Aug. 20, 1907 to May 25, 1911, although, with the exception above stated, the child was constantly under treatment with plaster-of-Paris jackets. On May 25th, (third tracing from the last) the child was placed on a convex gas-pipe frame for the purpose of correcting the kyphosis of the spine. The child was kept constantly on this frame, the convexity of which was increased from time to time until it was thought that all the correction possible had been secured. The child was then operated and the bone plate was placed in the spine for the purposes herein stated. The last tracing was taken after the operation and indicates the marked amount of correction which was secured.

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DISCUSSION.

Dr. A. H. Bellerose.—Three years ago I followed Dr. Calot's clinic at Berck-Lur-Mer. I saw him apply his "grand platre" and I have helped him to apply it. He has discarded his instantaneous forced correction of the spine for scoliosis; but he has adopted a slow and progressive correction which is as follows: First he applies his "grand platre," then he cuts an opening of about three to four inches wide and of the required length over the deformation, then he takes about ten squares, of the same dimension, of absorbent cotton. He piles them over the tuberosity, having lubricated the tuberosity with vaseline and finally he applies a starched bandage tightly over

the pile of absorbent cotton, which produces a slow and progressive correction of the deformed spine. I have seen many cases of scoliosis that have been corrected by this method. I ask Dr. Albee if he has tried this method and what he thinks of it. It seems to me a little hard to keep a child on a frame as he has demonstrated, with the head hanging down for months. Of course we can get used to almost anything; but it seems to me a little easier to put a child in a good plaster-paris jacket and apply two or three times a week this slow but progressive compression which causes no excoriation and no pain.

Dr. Johnson.—Dr. Bellerose has spoken in regard to the cruelty of the frames. There was one case brought into the Boston Graduate Hospital this summer of a child two years old. The mother said the baby cried at night and hadn't slept for several months, and the doctor recommended a frame. I saw the child brought in again three or four days after and the mother said the child had slept perfectly well and not complained of the frame at all, so I think it is a relief rather than a cruelty.

Dr. G. M. Sabin of Burlington.—Is the child kept on the frame the 24 hours of the day?

Dr. Albee.—The children are kept on the frame 24 hours. I am very glad that the Callos method is brought up. We have tried Callos' jackets and believe them very excellent. We can get corrections, but we are very certain we can get corrections more rapidly and hold the spine much more efficiently in a recumbent position, and I don't believe there is much dissension about that. I saw more excoriation in Callos' clinic than I ever saw in my life. The packing of this gauze is very favorable for excoriation, but I believe the Bradford frame is much more efficient than the Callos jacket.

Dr. H. C. Tinkham.—I feel that the Vermont State Medical Society is to be congratulated this year not only for Dr. Albee's paper, but what some friend of the Society has made possible in creating a trust fund, the income from which is to be used in securing a paper on either sanitary science or general medicine. This fund has become available this year, and the Society is to be congratulated again on the fact that the committee were able to secure the services of Dr. Crile. It is not necessary for me to say anything in regard to Dr. Crile, for you all know of his magnificent work.

The "safe-triangle" or "interpleural space," for exposing the heart, is at the left edge of the sternum behind the three lower costo-cartilaginous attachments.

TIT FOR TAT.

A sentry, while on duty, was bitten by a valuable retriever, and drove his bayonet into the dog. Its owner sued him in the County Court for its value, and the evidence given showed that the soldier had not been badly bitten after all. "Why did you not knock the dog with the butt end of your rifle?" asked the judge. The court rocked with laughter when the sentry replied, "Why didn't he bite me with his tail?"

MARVELLOUS EFFICIENCY OF VACCINATION.

For a number of years Dr. George W. Gay has been requested by the medical societies of Boston and Massachusetts to appear at the State House on the occasion of the perennial opposition by various interests neither medical nor sanitarian to the laws pertaining to vaccination. For use the present year Dr. Gay has prepared an excellent review of what vaccination against smallpox has done for the people of Boston and elsewhere, from which *The Clinic* has permission to select the more direct facts. The efficiency of vaccination is one of the most extraordinary facts of modern medicine, but being of the preventive order lacks the dramatic interest that the public loves to see surrounding a great public work. But the interest is there nevertheless, along with the good to humanity.

"The present generation knows little of this fatal malady from experience," writes Dr. Gay, "for it is forty years since Boston has had an object lesson of any magnitude in this direction. Smallpox is so rare here that the public health and the business interests are not disturbed in the least by it. It is a factor which under its present control is negligible in our modern life hereabouts. What has produced this marvellous change in the situation? The principal agent is vaccination."

For nearly eight years Massachusetts has manufactured vaccine lymph for inoculation against smallpox and this under the supervision of Dr. Theobald Smith, one of the leading bacteriologists in the world. It is produced from healthy calves, with most positive assurances and tests to prove that they are healthy, and the virus is subjected to various critical tests to prove its quality. Such vaccine, made by the State, is supplied to the people free of charge. During the eight years of State supervision of this product 339,710 tubes of vaccine have been prepared at the State laboratory and distributed for the use of the people of the Commonwealth. Thus far there has never been a single complaint lodged at official quarters as to the character or efficiency of the product. There has never been a case of tetanus, tuberculosis, syphilis, eczema or any other serious complication reported as having arisen from the virus supplied by the State. "If this evidence is not sufficient to establish the reliable character of the State virus in the minds of reasonable people," writes

Dr. Gay, "it might be worth while to overhaul our ideas of evidence."

There are not wanting persons who assert—despite such absolute testimony—that disease has been conveyed by the virus. Such cases are either legendary or are ancient history, or relate themselves to careless treatment or manipulation. Before the advent of vaccination it was the custom to inoculate with smallpox, the run being usually less severe. The resulting disease was, however, smallpox and was contagious. Formerly vaccination was done with virus from humans and disease might have been transmitted. The danger never was of much importance, but there have probably been supplied in the distant past the few cases on which much of the argument of such danger is founded.

PURE VIRUS THE ESSENTIAL FOUNDATION.

It should be remembered that while a pure virus is of the utmost importance, it is not the sole factor to be considered in this matter. Any procedure that breaks the skin partakes of the nature of a surgical operation and is subject to the dangers of the same. Vaccination is no exception to this rule. For this reason the work should be done with clean instruments and under surgical precautions to avoid the usual danger of infection. Not infrequently, however, it is done by those who know nothing about the essential conditions and no aftercare is taken to prevent mischief. Most of the sore arms are the result of the use of unclean instruments, soiled clothing, scratching with dirty fingernails, etc.

In nearly half a century's experience Dr. Gay has never known of a death, the loss of a limb or of any other serious condition resulting from vaccination. A vast majority of the terrible cases, reported as such, when properly investigated are found to be due to other causes than vaccination. It is true that a few cases of tetanus have resulted either from impure virus or from other infection of the wound, but such cases are extremely rare and are usually unavoidable. "They afford no reason whatever for giving up vaccination," writes this authority, "we might as well give up our railways, steamships, electricity, etc., for they all have their accidents despite the utmost care and foresight."

There has never been a time when vaccination was so perfect in its application as today; it was never safer, more efficient, nor more worthy

of the confidence of the people. In view of its benefits, vaccination ought to have the most thorough and general application, and instead of relaxing the laws relating thereto, they should be the more faithfully enforced. It is public opinion that must stand back of this and for that reason the public should receive from time to time definite and accurate information as to the benefits. In thus presenting such a statement, whose data are official, Dr. Gay is fulfilling a duty to the people.

HALF BOSTON ONCE ILL WITH THE DISEASE.

It is worth while to look at some of the early conditions. Previous to the discovery of vaccination, smallpox was constantly present in most communities and every twenty-five years or so, violent epidemics swept over the world, carrying consternation, sickness and death to the people and actually devastating communities. It attacked all ages and conditions, high and low, rich and poor, and persisted as long as there was any material upon which to expend its force. One-fourth to one-half, and more in some epidemics, of those stricken, died. Many who recovered were maimed. De la Condamine says that this disease destroyed, maimed or disfigured a full quarter of mankind. The disease was peculiarly fatal among children, while the adult face free from disfiguring pock marks was formerly as uncommon as is today the face that is so marked.

Macaulay has given a most graphic story of the ravages of this disease in the olden time. Here it is: "That disease over which science has achieved a succession of glorious and beneficial victories, was the most terrible of all the ministers of death. The havoc of the plague had been far more rapid, but plague had visited our shores only once or twice within living memory and the smallpox was always present, filling the churchyard with corpses, tormenting with constant fears all whom it had not yet stricken, leaving on those lives it had spared the hideous traces of its power, turning the babe into a changeling at which its mother shuddered, and making the eyes and cheeks of the betrothed maiden objects of terror to her lover."

No description can convey a just idea of the horrors of an epidemic before the days of vaccination. The people were helpless and hopeless in its presence. The repeal of the vaccination laws will simply restore the older conditions,

for it will be but a matter of time when the community will again be flooded with the unprotected.

Since the year 1904 till now the deaths from smallpox in Boston may be counted on the fingers of one hand. Let us look at some of the older conditions. In 1721 more than half the inhabitants of Boston were ill with smallpox and 850 died. Again in 1792 nearly half the people here were attacked. So violent was the scourge at times that the Legislature was compelled to hold its session in some other town. From 1840 to 1873, inclusive, 2,943 persons died from smallpox in Boston, while from 1874 to 1911, a longer period, there were only 343. There was a run of the disease here in 1901, 1902 and 1903, with 277 deaths, which has been the only important outbreak since 1873. Omitting this group, the number of fatalities from the disease in thirty-seven years is only sixty-four. This gives a ratio of one death under compulsory vaccination to forty-five deaths under voluntary vaccination.

The severest epidemic of smallpox in Boston within the memory of the present generation was in 1872-3, when 3,722 persons had the disease and 1,040 died. The horrors of the situation caused the creation of the present Board of Health. This took hold of the situation intelligently and vigorously and soon checked the course of the disease. In 1874, with the sad experience so very fresh, the law was enacted requiring children entering the public schools to have been vaccinated. This was and is of immense service in protecting the community.

As the outcome of this method of prevention—vaccination—smallpox has become in Boston the rarest of diseases. Many of the physicians have never seen a case, and most of the medical students know it only through descriptions and illustrations. In other words, it is one of the very few important affections for the study of which the hospitals here are unable to furnish clinical material.

"To a system of general vaccination, combined with the instant reporting of the sporadic cases to the Board of Health and the compulsory vaccination of the public schools, is due the freedom of Boston from this loathsome disease," said Dr. Gay, "and the more faithfully and thoroughly these measures are carried out the less smallpox will there be in any community. While there is no cure for the disease, yet it is pre-

ventable, and the people are themselves responsible for its existence to any extent in their midst."

GERMANY IS FREE OF SMALLPOX.

In this connection it is interesting to note the condition of Germany with respect to smallpox. It is the fact that this is the best vaccinated country in the world, and has the disease only—as is today the case with Boston—in an occasional case coming in from adjacent territory. There are no hospitals there for the care of the disease because the country depends altogether on prevention through vaccination and re-vaccination. The country is divided into districts, each having an officer whose duty it is to see that every person residing therein is vaccinated efficiently before he is two years old, again at twelve and again at eighteen. This confers lasting immunity. Vaccination is also required and enforced on entering the army. The army, as everyone knows, is in every country that body within which the communicable diseases are wont to rage, and it is directly to the point that in Germany the army has been free from this disease since 1834, when this requirement, that of vaccination, was first put into force—"The Clinic" *Boston Transcript*.

BLEACHING OF TEETH.

The bleaching of teeth has hitherto been very unsatisfactory since only dead teeth yielded readily to treatment. Rosenthal has solved the problem by using two very effective bleaching agents together: hydrogen peroxide, absolutely free from acid and light rays. The teeth to be treated are isolated and the mucous membrane and skin of the face are carefully protected. The teeth are then brushed on all sides with a more or less concentrated solution of perhydrol. The rays of a lamp yielding many ultraviolet rays are then concentrated upon the parts to be bleached. With carious teeth a concentrated solution and the full strength of the lamp may be employed, but with normal teeth, greater care is necessary, since severe pains may follow. The results are good no matter what the discoloration is due to, but it is necessary to employ only an acid-free peroxide such as perhydrol.—*Le lab. et le prog. dentaire*, 1910, No. 39.

DAY AND NIGHT.

DAY.

The Day is ours. We love the busy restless day;
It holds our meed of joy, our hours of work
and play;
And yet the day is full of noise and garish light,
Indexing all too clearly to our human sight
The walls of difference men build about their
lives,
The bitter want and cruel greed that ever drives
And follows men along the pathway of the lust
For gain—where souls are bartered for a bit of
dust.
The peasant's hut, when in the light of day 'tis
seen
Beside the palace of the king, looks poor and
mean.
The day is full of toil and evening shadows close
About a weary world that's hungry for repose.
The day is doomed—no dawn, however bright
But treads the path of yesterday unto the night.

NIGHT.

The Night is God's. He spreads the darkness,
calm and blest,
About his weary children like a robe of rest;
The garb of wealth, the cloak of rags is laid
aside,
And in the quiet night there is no voice of pride.
The darkness folds with equal love the humble
home
And the proud palace, with its lofty tow'r and
dome
The night is full of peace, and rest, and folded
wings,
And the soft breathings of a thousand sleeping
things;
And o'er the slumbering world a host of kindly
eyes
Are looking down through countless windows
in the skies;
The darkness cradles faith, and through its
hours of rest,
We feel tomorrow pulsing in the midnight's
breast.
For night is pregnant with the promise of the
dawn,
And darkest hours break ever into glorious
morn.

—Francis McKinnon Morton.

San Antonio, Tex.

Vermont Medical Monthly.

A Journal of Review, Reform and Progress in the Medical Sciences.

H. C. TINKHAM, M. D., }*Editors.*
B. H. STONE, M. D., }

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EDITORIAL.

The equanimity with which the public has accepted the practically enforced retirement of Dr. Wiley but serves to emphasize the fickleness of public sentiment particularly as reflected by the newspapers. Less than six months ago Dr. Wiley's vindication by President Taft was received with wild enthusiasm and there was probably no more popular man in America. His enemies feeling that this was not the time to show their hand, simply laid low until the public mind was filled with other heroes and the papers were filling their columns with campaign literature. When the time was ripe, they brought pressure to bear in such a way that the position was untenable and Dr. Harvey W. Wiley, a man who has honestly and courageously stood between vested interests that had developed to a science the business of adulterating foods, and the helpless people who were being defrauded and poisoned by these products, is forced out of his position with hardly a ripple of public indignation. Any

attempt to accomplish this last summer would have met with an indignant protest from almost every intelligent citizen in the country and yet nothing had happened since that time to in any way cloud Dr. Wiley's name. The people have simply gotten tired of one plaything and have turned to other toys. Whatever any one can say about Dr. Wiley's judgment, no one can for a moment doubt his sterling integrity and splendid courage. In a position where he was subject to almost irresistible pressure by business interests, represented sometimes by no less a personage than the Vice-President of the United States, he has valiantly stood for what he believed to be right. Finally damned by false praise, harassed by treachery in his own staff, badgered by a pettifogging lawyer and forced by the orders of his superiors to stifle his protest on matters which he believed to be absolutely wrong, he has, out of justice to himself and for the best interests of the cause which he has espoused for life, resigned.

The death of Joseph Lord Lister on February 11th, emphasizes again the marvelous development of surgery, of which he was in a very real sense, father. Lord Lister always modestly disclaimed any great credit in the development of antiseptis, gracefully giving the honor to the especial and fundamental discoveries of Pasteur, yet no kind of self-abasement can take from this man the credit of applying to the practical treatment of surgical wounds, the principles of Pasteur's discovery. He was a man best fitted to receive the idea and apply it intelligently. In order to realize the value of his work, it is only necessary to recall the conditions which prevailed in hospitals prior to his advent. The mortality from tetanus, hospital gangrene, and other forms of septic infections was appalling. Piercing wounds of the abdomen meant almost

sure death: accidental injuries resulting in open wounds, however trivial, were looked upon with the gravest apprehension. While chloroform and ether had for some time rendered surgical procedures painless, these operations were rarely attempted because of the almost sure sepsis. Starting with such conditions, Lord Lister has lived to see all of this changed and the science of surgery practically revolutionized. He has lived to see the mortality of abdominal surgery reduced from almost one hundred per cent to a very low degree. He has lived to see tetanus and septicemia become rare complications of surgical operations. Rarely does it fall to the experience of one man to see the consummation of the work which he began to such an extent as it has been Lister's fortune to do.

A case of unusual interest under the Vermont Pure Food Law has just been tried in the County Court at St. Albans, under the title of State vs. Popowics. The defendant, John Popowics runs a meat market and sausage factory. The case in question grew out of a seizure of meat made by the Pure Food Inspector associated with the local health officer. One quarter of this beef which was from a very thin animal showed a large pectoral abscess with fistulous connection between it and the pleural cavity. The butcher killing the animal testified that there was found in the fistula projecting into the pleural cavity and into the abscess, a piece of wire. The pus from this cavity was found to contain streptococci. The State maintained that an abscess of this kind especially when associated with an infection of the pleural cavity would render the whole carcass diseased and unfit for human consumption. The defendant denied this, claiming that the abscess wall would prevent the absorption of bacteria and bacterial products and that

other portions of the beef after trimming out this abscess were wholesome. The defendant further claimed ignorance of the condition of the meat. The jury after being out ten minutes brought in a verdict of guilty. The case is important as being the first of its kind to be brought in Vermont courts.

Great interest has been aroused in the medical world by the success of Wasserman's treatment of mouse cancer by introducing into the veins negrosin, cosin, and selenium compound. The cancer in the mouse has been caused to disappear under this treatment with the survival of the host. The theory upon which such treatment is based is that the cancer cell or the parasite responsible for it (it makes no practical difference which) has a chemical composition distinctly different from the composition of the normal cell, and that therefore, it is theoretically at least possible that some chemical can be found which will unite with these cells specifically and cause their death without affecting the healthy cell. That such selective action is possible, for foreign protoplasmic cells in the human body is amply proven by the specific action of quinine on the malarial, and mercury on the syphilitic parasite. That the cancer cell is different in its chemistry from the normal cell is clearly indicated in a number of ways. It not only has enormous powers of multiplying but it has the property of being able to actually tear down the albumen of the body and live at their expense. It is susceptible to tryptic but not to peptic digestion. It produces ferments which act in acid medium while those of normal tissue cells act only in the presence of an alkaline medium. In some instances these ferments are able to carry the breaking down process farther than those of the normal cell as indicated by the further digestion of albumoses to tryptophan by the se-

cretory products of gastric cancer. Finally its protein has been found to contain high percentages of glutamic acid, alanin, phenylalanin, diamino acids, aspartic acid, etc. All these things point to the essentially different character of the cancer and the normal cell. With this point of departure from the normal established, it is certain that there exist chemical substances, simple or compound, which will have a selective affinity for these malignant growths and that some of these will cause their destruction. It only remains to find such a substance as will do this when administered by the mouth or into the blood and at the same time fail to attack the normal cell. Work of this kind holds an alluring promise of success and such results as Wasserman's suggests that the solution may not be so far in the future. Ehrlich's work with atoxol and salvarsan has given a clue to the sort of chemical substances to be used in diseases analogous to trypanosomiasis and syphilis. Perhaps the work of Wasserman will prove to furnish a like clue to the chemical therapy of malignant disease.

NEWS ITEMS.

The College of Medicine of the University of Vermont and the University of Pennsylvania and the Yale Medical School were elected members of the association of American Medical Colleges at the meeting of the Association held in Chicago, February 28th.

The Burlington and Chittenden County Clinical Society held its monthly meeting March 28th. The Surgery of Simple Fractures was read by Dr. Wheeler.

Dr. R. W. Tuttle who has been at Proctor, Vt., recently, has just been married to Miss Belle O'Brien, formerly connected with the Boston City Hospital, where the doctor was house physician.

Dr. George H. Saltmarsh has just been re-elected mayor of Laconia, N. H.

Dr. F. P. Scribner, Dartmouth, 1909, has located in Manchester, N. H. The Medico-Chirurgical College and Hospital of Philadelphia opens on March 7th, its new dispensary on Cherry street, opposite the hospital. The building has a frontage of fifty-nine feet and a depth of one hundred and forty-four feet; but the rear half has an additional width of twenty feet to the east, thus giving a total floor space of ten thousand square feet, or an increase by more than two-thirds over the former dispensary area. The structure is one story in height and the front which is of brick and colonial in design, is dignified in appearance.

Dr. Edward Hickling Bradford, professor of orthopedic surgery has been appointed dean of the Harvard Medical School. Dr. Bradford is sixty-three years of age.

A tablet has just been erected at the University of Pennsylvania to the memory of Dr. Crawford W. Long to commemorate the seventieth anniversary of his use of ether as an anesthetic. He graduated in the class of 1839.

Dr. John William Parsons of Portsmouth, N. H., died Feb. 28th of double pneumonia after a short sickness. He was born in 1841 and had practiced medicine for almost fifty years; most of the time in Portsmouth. He graduated from Harvard Medical School.

A new hospital has been opened in Boston to be used exclusively for the treatment of cancers. It has five private rooms and two public wards. C. P. Huntington, for whom it is named, was the founder of the institution.

A woman has just received a five thousand dollar verdict against Dr. I. C. R. Amesbury of Boston for injury to her eye. Carbolic acid being put into it by mistake as she alleges while under the doctor's care. She sued for \$10,000.

Dr. James J. Putnam, professor of nervous diseases, and Dr. Edward H. Bradford, professor of orthopedic surgery, have resigned from the Harvard Medical School faculty. Both have served nearly forty years on this faculty.

The members of the local committee of arrangements for the next meeting of the Vermont State Medical Society which is to be held in Montpelier, October 10th and 11th, are Doctors William Lindsay, M. F. McGuire, C. E. Chandler, E. A. Colton and G. H. Parmenter.

Some six months ago there was established at Bellevue Hospital, New York, a school for midwives and the first class has just been graduated. This is the first class of the kind in this country. Of the 115,000 childbirths in New York City annually a little more than fifty per cent is attended by midwives.

Dr. David Sneed before the members of the School of Hygiene Association of Massachusetts declared that the school doctor was not adequately paid. He showed that in twenty cities their average pay was \$228 a year; in thirty-two towns the average compensation was \$135, while in one hundred and three places it was less than \$35 a year.

Willis Vernon Cole, the Christian Scientist of New York City, whose first trial resulted in a disagreement, was convicted March 30th of practicing medicine and fined \$100. The case is to be carried up for test of right to heal for fees. Justice Seabury of the Supreme Court before whom the case was tried, charged the jury "that even though surgery is not resorted to and no drug is used and also even though the person so holding himself out engages in prayer, he is engaged in the practice of medicine under the meaning of the law."

In New York City there have been 1,663 persons injured and 263 persons killed in automobile accidents in the past 25 months.

A recent canvass of 13,800 physicians in Germany showed that nearly 5,000 of them were specialists. There were 444 exclusive doctors; 500 eye doctors and about 500 throat doctors; there were nearly 800 who devoted their work to women's diseases and a few more than 300 stomach doctors.

The president of Tufts College was married to Mrs. Emma Tuttle James, March 4th.

The dentists of Massachusetts are urging the legislature to pass a dental nurses bill which provides that nurses shall be permitted to assist them as they assist physicians. The nurse under the provision of this bill will be allowed to examine, clean and wedge teeth and remove dressing as under the registered dentist's supervision. The nurse is to be required to pass an examination. The bill is opposed by Dr. John F. Dowsley, and by Dr. Harold Williams of Tufts.

Twenty cold storage turkeys served at a dinner of the Men's League of the Reformed Church of Belleville, N. J., have been the cause of many cases of ptomaine poisoning. Eight of the sufferers were reported as being in a serious condition.

The organized nurses in New York have decided on a flat rate of \$4 per day instead of the weekly rate of \$25, the reason for the change is given as the increased cost of living and the frequent misunderstanding between patient and nurse as to the proper charge for a part of a week.

The annual meeting of the American Medical Editors' Association will be held at Atlantic City, New Jersey, on June 1st and 3rd with headquarters at the Marlborough-Blenheim Hotel. Dr. Thomas L. Stedman, editor of the *Medical Record*, will preside and an attractive programme is being prepared. The annual banquet will be held on the evening of June 3rd. Every editor and those associated in medical journalistic work will find this meeting worth attending.

Dr. D. J. Carroll, graduate of the College of Medicine, University of Vermont, class of 1910, has opened an office in Vergennes.

In June the *American Journal of Surgery* will issue a number composed of original contributions from men of recognized prominence in the medical profession residing in Greater New York. Among those to contribute are: Herman J. Boldt, C. N. Dowd, Meddaugh Dunning, Wm. S. Gottheil, E. L. Keys, Jr., Howard Lilienthal, Chas. H. May, Willy Meyer, Robt. T. Morris, S. Lewis Pilcher, John O. Polak, James P. Tuttle, James P. Warbasse and others. Contributions from these well-known men should make this issue of particular interest and value.

Dr. Fred Brush has resigned the superintendency of the New York Post Graduate Medical School and Hospital, to become superintendent of the Burke Relief Foundation, and engage in the planning and organization of the Convalescent Hospital, to be erected at White Plains, N. Y., on the sixty acre plot of land recently purchased. McKim, Mead & White are the architects, and a new type of institution and work for the care of the city's sick will be established.

OBITUARY.

Dr. G. F. B. Willard of Vergennes, died at his home, March 28th, after a short illness with pneumonia. Dr. Willard was born in Boston, Mass., 1853, graduated at Middlebury College in 1876 and from St. Louis Medical College in 1883. In the same year he moved to Vergennes where he had since practiced medicine with the exception of six years spent in Illinois. He was a member of the American Medical Association, Vermont State Medical Society, Addison County Medical Society, and of the New York and New England Association of Railway Surgeons.

Dr. W. E. Heath, formerly of Richmond, died recently at his home in Parker, Colorado.

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**CLINICAL SOCIETY OF NEW YORK POLY-
CLINIC MEDICAL SCHOOL AND
HOSPITAL.**

Meeting of March 4th, 1912.

CASE OF FOREIGN BODY IN THE EYE: X-RAY LOCALIZATION: GENERAL INFECTION OF THE EYE CONTROLLED BY UROTROPIN.

Case presented by Dr. Earl Conner.

The patient, a young man of 22, called upon Dr. Conner, with a history of being employed in hammering or using a chisel on a piece of cold steel. A piece of the metal flew and struck him in the eye. When seen four days later, the eye was swollen and painful: the anterior chamber was filled with pus, and on the nasal side of the globe, there was a minute punctured wound, about 4 mm in size. The patient had not slept the night before. He was informed that the eye was infected and that in all probability would be lost, though every effort would be made to save it.

On admission to the hospital, the test was made with the Giant Magnet. The result, however, was neither positive nor negative. If there is a foreign body in the eye it is apt to give pain on being brought into the field of the magnet. In this case, the temporal side of the eye was brought into the field of the magnet, and the patient experienced sharp pain, but after a dozen trials no foreign body could be located at any point. The patient was put to bed, given atropine, and hot applications of calomel.

The pupil was dilated and pus in the anterior chamber absorbed, and the interior of the eye examined. A yellow reflection was obtained, which was evidence of infection of the vitreous. The inflammation increased from day to day, up to the tenth day before it was possible to control it. After the patient was put to bed he was given calomel, followed later by seven and a half grains of urotropin three times a day for two weeks. This drug has been administered in a large number of cases of eye infection with very favorable results. Dr. Conner said that he had had three cases of eye infection in the past few weeks in which the infection had apparently been controlled by the use of urotropin.

Skiagraphs had been made of the eye for the purpose of determining the presence or absence of a foreign body. The size of the foreign body as determined by the skiagraph was 1 mm by 1½ mm.

As a rule these cases go on to the loss of the eye. An infection of the vitreous is seldom or never arrested. The usual termination is perforation of the eye and hemorrhage. The inflammation in this instance had been controlled, the pain relieved, the patient has perception of light, and there is hope of saving the eye.

Two cases presented by Dr. C. G. Child.

Operation subsequent to Gillian operation.

Dr. Child reported two cases operated on by the Gillian method which had returned after being operated upon. He said that neither case had been relieved by this method, and were suffering from pelvic pain with dragging on the abdominal wall and this in spite that both operations had been done by most competent men.

Dr. Child said that he objected to the operation as the intestines and omentum later became incarcerated in the pelvis. It produced pathological conditions which were worse than the original displacement of the uterus. Varicose conditions followed and an even worse state of things supervened in the formation of pockets in the pelvis.

In both of the cases he reported, pockets had formed in one of which the sigmoid was very extensively adherent, and constipation had been obstinate.

Dr. Tovey said that Dr. Wells used to do the operation until he found that the patients came back with the uterus in the same position, and all the troubles increased, or else they complained of pain in the side where the ligaments

were attached. They had abandoned the operation.

HEMATURIA IN A MULTIPARA: UNKNOWN CAUSE.

Presented by Dr. Ward B. Hoag.

Dr. Hoag reported a case of hematuria in a multipara forty years of age, in her fourth pregnancy. At six and a half months she developed without any discomfort a considerable quantity of blood in the urine. Beyond the presence of blood there was no pain or discomfort of any kind.

The patient was put to bed, irrigations of alum solution used, and rest enjoined for ten days. It had no effect on the bleeding. She went on to full term and was delivered in a perfectly normal way. The hemorrhage continued for two weeks after the child was born, and then stopped as suddenly as it had begun. Dr. Hoag thought that it was the result of intra-abdominal pressure, perhaps the rupture of a small blood vessel. The same night there was a little fleshy plug passed in the urine which was the only thing ever seen, and coincident with this hemorrhage stopped and has not since returned.

Dr. Shears said that although the hemorrhage might be due to toxic conditions, in the present instance there were no signs of a toxemia. Ruling out local papilloma or a ureteritis, he thought that six and a half or seven months was not too early to exert pressure symptoms sufficiently severe to produce hemorrhage. From a careful examination of the bladder and the absence of stone or other aggravating cause he should be inclined to attribute the bleeding to this cause.

INSANE IN INSTITUTIONS.

Preliminary Summary for 1910 Issued by the Census Bureau.

A special census of the insane confined in institutions in 1910 in continental United States was taken by the Bureau of the Census, Department of Commerce and Labor, and a preliminary comparative summary for 1904 and 1910 has been issued by Director Durand. The statement was prepared by Dr. J. A. Hill, chief statistician, division of revision and results, who is in charge of the work. The figures are subject to revision later, as there are a few in-

stitutions from which complete returns have not been received, but if any changes are made they are not likely to affect materially the totals and rates given herein.

The number of institutions canvassed was 372; the number of insane persons in the institutions January 1, 1910, was 187,454; the number admitted during 1910 was 60,603; and the number discharged in that year was 53,880. At the last special United States census of the insane the population in insane asylums January 1, 1904, numbered 150,151, and the number of persons committed to insane asylums during the year was 49,622. Therefore, in the six years, from 1904 to 1910, there was an increase of 37,303, or 24.8 per cent, in the number of patients confined in insane asylums; and an increase of 10,981, or 22.1 per cent, in the number annually committed to such asylums. An increase of 37,303 in the population in insane asylums taking place in six years is an annual increase of 6,200.

INCREASE OF INSANE POPULATION.

While the population of the United States increased about 11 per cent in the interval between 1904 and 1910, the population in insane asylums increased about 25 per cent. The number of insane in asylums per 100,000 population increased from 186.2 in 1904 to 203.8 in 1910. The number of persons annually committed to hospitals for the insane per 100,000 population increased from 61.5 in 1904 to 65.9 in 1910. If these ratios are accepted as representing insanity rates, it would appear that the number of persons becoming insane, in a community comprising 100,000 persons, was greater by 4.4 in 1910 than it was in 1904. It must be remembered, however, that these figures include only the insane who are committed to hospitals. As to the number of cases of insanity not resulting in commitments to hospitals the census has no data. It is entirely possible that the increase in the number of commitments per 100,000 population is not due to any considerable degree to an increased prevalence of insanity, but simply to the extension of this method of caring for the insane. It is a change which might result from an increase in the number of institutions of this class and from an increasing disposition on the part of the public to resort to such institutions. In this connection it may be noted that the number of institutions for the insane re-

ported by the census increased from 328 in 1904 to 372 in 1910, an increase of about 13 per cent. The average number of inmates per institution increased from 458 in 1904 to 504 in 1910.

The figures compiled by the census afford a striking indication of the prevalence of insanity, if not an exact measure of it. It is somewhat startling to reflect that the 187,454 patients confined in hospitals for the insane make up a population larger than that of the city of Columbus, Ohio.

VARIATIONS IN FIGURES FOR STATES.

As regards the figures by states, the report points out, by way of caution, that it should be constantly borne in mind that the variations between different states, in the number of insane in institutions in proportion to population, are probably due to differences in the sufficiency of the provisions made for caring for the insane in this way, and also to differences as regards the practice of committing the insane to institutions, quite as much as to variations in the insanity rate prevailing in different communities.

The state which, in proportion to its population, had the largest number of insane reported in institutions on January 1, 1910, was Massachusetts with 344.6 per 100,000 population. New York, however, had almost the same proportion, namely, 343.1 per 100,000 population. There is no doubt that in these states better provision is made for the care of insane in institutions than in most of the other states. The insane confined in institutions in any state are by no means drawn exclusively from the population of that state. The institutions in Massachusetts, especially the private institutions, receive many insane patients from other New England states; and the institutions in New York similarly receive many patients from outside that state. The District of Columbia, which far outranks both New York and Massachusetts in the proportion of number of insane persons in institutions, presents conditions more analogous to those of a city than those of a state, and is, moreover, peculiar in that it is the location of the Government Hospital for the Insane, which draws its patients from a much wider area than the District.

The state which ranks next to New York and Massachusetts in the number of insane in

hospitals in proportion to population is Connecticut, where the ratio is 321.1 per 100,000 population.

FEWER INSANE IN INSTITUTIONS IN WEST AND SOUTH.

In general the number of insane in hospitals in proportion to population is much smaller in the West than in the East. The ratios are also smaller in the South than in the North.

In 34 out of the 49 states and territories, including the District of Columbia, the ratio of insane in institutions to total population was larger in 1910 than in 1904. Most of the states in which the ratio was smaller lie west of the Mississippi, the number including all the Pacific coast states and all but three of the mountain states. This section of the country has undergone a very rapid development in recent years, and it is possible that the new population coming from other sections of the United States represents a class in which insanity is less prevalent than among the stay-at-homes. But the decrease in the ratio may also indicate that the provisions for the care of the insane in institutions have not kept pace with the rapidly increasing population.

The Census Bureau is now engaged in tabulating the data for the insane included in this enumeration with respect to sex, race, age, country of birth, etc. The results, when completed, will be published in a special report, which ought to bring out many features of interest regarding this class of the population.

ACUTE SULPHONAL POISONING.

A case of attempted suicide by sulphonal, reported in the *West London Medical Journal* by Dr. H. S. Sington, is noteworthy on account of the large dose swallowed and of a most important point in the treatment. A lady of thirty-eight swallowed 125 grains of sulphonal in 5-grain tablets; less than two hours later Dr. Sington saw her, at the moment when a lay friend was about to administer hot brandy. This he was just in time to prevent, and the importance of his arrival, from the patient's standpoint, may be judged when it is remembered that the solubility of sulphonal is 1 in

450 in cold water, but 1 in 90 in alcohol. The treatment consisted of a pint of coffee, which the patient had to be well roused to swallow, followed by apomorphine. Energetic stimulation with strychnine and frequent drinks of hot coffee with warmth resulted in improvement after about six hours. Subsequently an erythematous rash appeared on the face, but there were no other serious after-effects. The recovery seems to have been extraordinarily rapid after such an enormous dose; but probably the tablets had not been more than partly digested and absorbed when measures were taken for removing the poison from the stomach.—*The Hospital*, London.

TREATMENT OF MALIGNANT GROWTHS BY RADIUM.—Moullin, in *The London Medical Lancet*, says that so far as our present knowledge is concerned with the small quantities that we have at our command, radium can only be relied upon, and that to a limited extent, in cases of malignant disease in which growth is slow and the degree of malignity relatively slight. On the other hand, it is of the greatest value in what may be called the pre-malignant stage—that is to say, in removing growths which not infrequently become malignant as age advances, without an operation and what is very important, not merely for cosmetic but for clinical reasons, without leaving much of a scar; and there is good reason to hope that if the small quantities we possess now are capable of dealing with growths of relatively mild malignancy, larger amounts, when we can get them, will prove equally successful in circumstances of greater difficulty.—*Charlotte Med. Journal*.

THE DOSE OF CODEINE.

Fraenkel (*Munch. Med. Woch.*) claims that codeine must be given in larger doses than is generally used in order that the full effect may be obtained, as codeine is from ten to twenty times less powerful than morphine. The proper dose should be two-thirds or three-fourths grain, and this amount may be given three or four times a day without any evidence of habit formation. The single maximum dose permissible is one and one-half grains and maximum daily dose is four and one-half grains. For children the daily dose may be as follows:

4 years of age 1/6 grain.
 6 years of age 1/8 grain.
 8 years of age 2/3 grain.
 12 years of age 1/4 grains.
 —Meyer Brothers Druggist, July, 1910.—*Charlotte Med. Journal*.

A NEW HEART TONIC.

Excellent results were obtained in heart disease by E. Stadelmann from the use of ouabain, a glucoside extracted from *Acokanthera Schimperii*. For internal use, the following formula is recommended:

Ouabain 0.004 Gm.
 Aq. Dest. 100.0 Gm.
 Aq. Menth. 30.0 Gm.
 Syr. Simpl. ad. 150.0 Gm.
 Sig.: A tablespoonful every 2 hours.

The effect was similar to that of digitalis and other heart tonics, but probably twice as large a dose would be perfectly safe. A great advantage over other drugs is the fact that ouabain may be given in the form of intramuscular injections without causing the painful infiltrations so common with digalen.—*Berl. klin. Woch.*, May 15, 1911.

RELATIVE INCREASE OF NEGROES AND WHITES.—Returns from the census of 1910 in the southern states show some interesting facts relative to the racial proportions of population in that district. In the nine "cotton states," during the decade from 1890 to 1900 the increase of colored population in the cities was 23.2 per cent., and that of the whites 27.6 per cent.; in the rural districts the negroes increased 17.5 per cent. and the whites 18 per cent. During the decade from 1900 to 1910, the colored increase in the cities was 30.5 per cent. and that of the whites 46.6 per cent.; in the rural districts the negroes increased only 8.3 per cent., but the whites 17.3 per cent. The great gain of the white increase in the cities is probably largely due to economic immigration; the great decline of the negro increase in the rural districts represents partly dissemination through other states, partly an actual abatement of natural increase. Whatever the cause, the figures seem to indicate, as might be expected, that the negro is not wholly able to compete with white races for

survival, especially under the strenuous conditions of modern environment.

When you see a child with beginning lateral curvature do not tell the parents that it is merely a bad habit and the child will outgrow it. Valuable time is lost thereby and the chances are the curve will increase without treatment.

BOOK REVIEWS.

DISEASES OF THE SKIN AND ERUPTIVE FEVERS.—By Jay Frank Schamberg, A. B., M. D., Professor of Dermatology and Infectious Eruptive Diseases in the Philadelphia Polyclinic and College for Graduates of Medicine, Diagnostician to the Bureau of Health, and Consulting Physician to the Municipal Hospital, Philadelphia, Fellow of the College of Physicians of Philadelphia, Member of the American Dermatological Association. Fully illustrated. W. B. Saunders & Co., Philadelphia and London, 1910.

The author treats the subject of dermatology in its broader sense as embracing the consideration of all morbid processes that are characterized by cutaneous manifestations. The exanthemata are treated in a separate chapter and are given the generous space which their importance demands. The plan which the author states of treating the diseases of the skin in a brief and practical manner devoting special attention to symptomatology, diagnosis and treatment, is consistently carried out. The text is well illuminated with numerous photographic reproductions.

HOME HYGIENE AND PREVENTION OF DISEASE.—By Norman D. Ditman, M. D. Duffield & Co., New York, 1912.

The author of this work states that the object of this book is not to displace the family doctor but to furnish the reader with general information regarding medical subjects with a view of giving simple, clear advice for the avoidance of disease. Preventive medicine must in its final analysis rest largely on the action of the individual and any work which tends to popularize the principles of hygiene, is to be encouraged. Dr. Ditman has given in a very readable way much advice which will be invaluable in the family. The book takes up the ordinary medical and surgical diseases in alphabetical or-

der; explains the disease in simple language and describes the symptoms and then tells the simple things which can be done before the arrival of a physician to aid the victim.

Funk & Wagnalls Company have secured the American rights to "A System of Surgery," edited by C. C. Choyce, Dean of, and Teacher of Operative Surgery in the London School of Clinical Medicine, (Post-Graduate,) etc. J. Martin Beattie, Professor of Pathology and Bacteriology and Dean of the Faculty of Medicine in the University of Sheffield, is the Pathological Editor of this important new work. Volume 1 will be ready about the middle of April and the remaining two volumes will be published about Autumn, 1912. The price of the work will be \$21.00 per set.

It will be published in three octavo volumes and profusely illustrated with colored, black-and-white, and text illustrations. Each branch of surgery is treated by the foremost specialists in that particular branch in Great Britain so that the work will really comprise the whole field of surgery from the viewpoint of the foremost British practitioners.

HEALTH AND MEDICAL INSPECTION OF SCHOOL CHILDREN.—By Dr. Walter S. Cornell, Director of Medical Inspection of Public Schools, Philadelphia; Lecturer on Child Hygiene, University of Pennsylvania; Director of Division of Medical Research, New Jersey Training School for the Feeble-Minded, etc. Illustrated with 200 half-tone and fine engravings, many of them original. Price, \$3.00. F. A. Davis Company, Philadelphia., 1912.

The timeliness of such a book as this cannot but be appreciated in Vermont where numerous medical inspectors are being appointed under the new law. This volume does not attempt to review the statistics of medical inspection in different localities, but aims rather to be a textbook for the medical examiner. The author takes his material direct from actual experience and illustrated his points by many examples. The book is divided into three sections, the first, on Medical Inspection, having to do with methods and administrations. The second section, on Hygiene takes up matters of sanitation in general, while the third section, on Defects and Diseases, deals in detail with the conditions to be observed and diagnosed by the inspector. Throughout the book are scattered many photographs and cuts. There is a fund of information for which the medical inspector would have to search through many volumes, here collected in

most easily available form. The author is to be congratulated on the concise yet thorough manner in which he has developed the entire book.

HONAN'S HANDBOOK TO MEDICAL EUROPE.—A ready reference book to the Universities, Hospitals, Clinics, Laboratories, and general medical work of the principal cities of Europe, by James Henry Honan of Rush Medical School, with maps of Edinburgh, London and Paris. P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia, Pa.

To one, who like the reviewer, has essayed to do medical work in Europe alone, without a guide, this book appeals very strongly. It makes clear at once so many things which may take the stranger months to discover by himself. We really believe that Dr. Honan has conferred an invaluable favor on his brother physicians who would a travelling go.

EXERCISE IN HEALTH.—By Dr. Woods Hutchinson. Outing Publication Co., New York City.

The style of Dr. Hutchinson's writings is too well known to need any comment. To the lay reader to whom this book is written, it furnishes much of great value presented in a fascinating style. We predict for the book a wide circulation.

INTERNATIONAL CLINICS.—A quarterly of illustrated clinical lectures and especially prepared original articles on treatment, medicine, surgery, gynecology, pediatrics, obstetrics, orthopedics, pathology, dermatology, ophthalmology, otology, laryngology, hygiene and other topics of interest to students and practitioners. Vol. IV, 21 series, 1911, price \$2. J. B. Lippincott Co., Philadelphia and London.

This volume of clinics contains twenty-four lectures written by James Burnet, Edgar D. Dallenger, Omur F. Elder, Dudley Roberts, James C. Johnson, William B. Trimble, Medwien Leale, Inascher George William Norris, J. Russell Ververycke, Frederick Procscher and others.

INTERNATIONAL CLINICS. Vol. I, 22 series, \$2.00. J. B. Lippincott & Co., 1912.

This issue contains an article on experimental poliomyelitis by Flexner. The science and practice of Eugenics or race culture, by Myer Solomon, and other lectures on various subjects.

PHYSICAL DIAGNOSIS.—Second Edition, Revised. Principles and Practice of Physical Diagnosis. By John C. DaCosta, Jr., M. D., Assistant Professor of Clinical Medicine, Jefferson Medical College, Philadelphia. Second edition, revised. Octavo of 557 pages, with 225 original illustrations. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$3.50 net.

In this work the author has kept clearly in mind the prime importance of interpreting morbid objective data, individual or grouped on the basis of pathological cause and physical effects. His explanation of the pathology which gives rise to the objective symptoms of the various disease conditions is very clear. The book is richly illustrated with clinical cases adding much to the clearness of the text. This edition has not changed the aim or scope of the work but has simply brought it up to date.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

NEW ETHER VALVE.

D. E. JACKSON, St. Louis (*Journal A. M. A.*, February 17), describes and figures a new form of ether valve for experimental work, which he claims saves more than half the amount of ether ordinarily used. It is also compact in form, consisting of a brass box with two compartments, in which, by a system of levers and valves, the ether is controlled. There are no separate pieces to be misplaced or parts likely to get out of order and all parts are accessible. It is readily adapted for either natural or artificial respiration or for insufflation, and the operator has instant command of the amount of anesthetic administered. For the description one must refer to the paper and the illustrations, as it is too lengthy for a brief abstract.

OBSTETRICS AMONG INDIAN WOMEN.

The generally accepted opinion that obstetrics among the American Indian women is always a simple matter, is, according to F. SHOEMAKER, Albuquerque, N. Mex. (*Journal A. M. A.*, January 6), hardly a true conception of the matter. The Indian women are becoming more and more in the habit of calling white medical assistance, and he reports briefly four cases, one of urethro-vaginal fistula after labor with other complications, one of calcareous degeneration of placenta, one of severe localized infection with high temperature, and the other a tedious labor with twins lasting over four days and requiring active measures to bring it to an end. These cases, with others of like character which have come under his observation, suffice to show that Indian women are subject, like the whites, to serious accidents in the function of parturition.

ECTOPIC GESTATION.

EVAN O'NEAL KANE, Kane, Pa. (*Journal A. M. A.*, February 17), gives a case of twin ectopic gestation which had been treated for indigestion and suspected miscarriage. The abdomen was filled with blood, fluid and clots, and a large adherent mass in the lower abdomen contained a large sac in which lay two fetuses, the cords of which lay close together, rising from a large single placenta. The fimbriated extremity of the left tube was filled with coagula. These fimbriae bled freely when the adhesions were broken up, but no definite circulatory connection could be demonstrated between them and the sac proper and its contents. The thickening of the left tube and the fimbrial clots were suggestive of ampullar origin, despite the posterior position of the placenta and the fact that the principal blood-supplies seemed to be from the rectum and omentum. Kane suggests that all cases of so-called abdominal gestations may be due, as this case probably was, to a commencement at the mouth of the tube and ejection therefrom at a very early stage, thus obscuring the true origin.

INTESTINAL AMEBIASIS.

W. E. MUSGRAVE, Manila (*Journal A. M. A.*, January 6), says that it is a common finding in making post-mortem examinations in Manila to find amebic ulcers in all stages of healing and even healed ulcers where no dysentery has been observed or treatment instituted. There are many records of cases of undoubted amebic ulceration of the colon with characteristic clinical symptoms, which have recovered without any treatment for the disease and which on later post-mortems showed no evidence of it. He concludes from this that there is a natural tendency to recovery in this disorder and this fact rather embarrasses conclusions as to the results of treatment. For a number of years the opinion has been growing stronger in his mind that all expressions of amebic harm are not found in mucous ulcerations of the bowel, and that they are not a necessary and constant lesion. He finds the conflicting opinions of the value of ipecac in the disease to be largely dependent on the differing conceptions of dysentery and its varying definition by different individuals. The greater part of pro-ipecac literature deals with results obtained in acute and chronic and "clinical" dysentery, whereas most of the writers who have made unsatisfactory reports have considered the disease more from etiologic and pathologic standpoints and included many of the numerous cases of ulceration of the colon without dysenteric symptoms. His analysis of the literature permits one general conclusion, that ipecac is a valuable drug in "clinical dysentery" whatever its etiology. It is in this form also that the best results are obtained from other forms of treatment and this has to be considered. In a small percentage of cases of chronic dysentery it follows an initial acute form but in general it develops gradually without this. Musgrave believes that acute dysentery occurring in the course of chronic amebic dysentery may have a curative effect on the chronic form and he reports a case illustrating this, in which a superimposed bacillary dysentery seemed to have this effect. He does not know how general such a condition as described in these cases of double infection may be, but he has little doubt of its occurrence and autopsy-studies support this view. The treatment of

dysentery is taken up and Musgrave thinks proper support of nutrition is the first requisite in the chronic form. He recommends a liberal diet and some form of occupation for the patient, this being contra-indicated only in the acute types. Only such medication as will favor this or, in certain instances, to meet special indications, is advised by him. Local treatment is recommended and the details of the use of enemas are given. The effect of mercury salts deserves further investigation. He does not specially favor surgical treatment.

URIC ACID DIATHESIS.

A. C. REED and G. B. WALLACE, New York (*Journal A. M. A.*, January 6), discuss the theories of uric acid diathesis, the meaning of which term, they say, has been gradually narrowed down until it includes only those diseases or clinical syndromes which are more or less connected with a pathologic purin metabolism. Uricacidemia may be entirely independent of abnormal purin metabolism, but, nevertheless, variations in the amount of uric acid in the blood and urine are constant in the uric acid diathesis and can only be considered as due to a disorder of purin metabolism. They review the pathology, as far as known and accepted, of gout, the principal disease intimately connected with the uric acid diathesis, pointing out that, besides this, there are other factors of which we know nothing and on which depend the uricacidemia and urate deposition. They also point out how renal insufficiency may resemble gout and, in fact, the two conditions are often confused. Rheumatism is also confused with gout, but acute rheumatism seems entirely separate from primary purin disturbance. The fact that the major part of uric acid destruction normally occurs in the liver lends probability to the view that any disease-process limiting the functional power of the liver would seriously disturb purin metabolism, and this is supported by the occurrence of uric acid excretion in hepatic cirrhosis and acute yellow atrophy. It might also partly account for the uricemia often found in hepatic cancer. The therapy of the conditions of disturbed purin metabolism is discussed at some length. It is important to determine the tolerance of the patient to purin-free diet, but this is not sufficient alone. The endogenous as well as the exogenous purins have to be considered, and, as in the case of sugar in diabetes, it is highly important to ascertain the tolerance of the patient and increase it if possible. With the purin tolerance known the diet should be regulated to contain just under this value of purins. Regulation of purin diet has, therefore, a direct place in the treatment of both chronic and acute disorders of purin metabolism as well as in their prophylaxis. It is not yet settled whether the tolerance for meat purins is a measure of the tolerance for purins of other sources. Our knowledge here, however, is rudimentary. As regards specific therapy for these derangements, the authors discuss certain reported theories and results, especially the use of thyminic acid, with which they have experimented a little in the preparation known as "soluro," recommended by Fenner. While no very tangible therapeutic results, they say, have been obtained by themselves or others, future work may develop something more definite. They mention radium in this connection and think that this possibly offers some promise. Several tables accompany the text.

Thyroprotein Beebe

A Preparation of the Active Principle of the Thyroid Gland.

This product consists of certain proteids of normal thyroid glands, extracted, purified, assayed and adjusted to a standard content of 0.33 per cent. of iodine. It is diluted with the necessary amount of lactose to make two-grain tablets, which we supply in three denominations, containing, respectively, 1, 2 and 5 per cent. of Thyroprotein.

The 1- and 2-per-cent. tablets are used in the treatment of various types of goitre, the average dose being one tablet three times daily. The 5-per-cent. tablets are intended for administration in metabolic disorders, as skin diseases, affections of the joints, myxedema and cretinism.

Thyroprotein has been employed for upward of two years by a number of experienced clinicians and in a wide variety of pathologic conditions. It is offered to the medical profession with full confidence that it will satisfactorily displace the crude and more uncertain thyroid preparations heretofore available.

Supplied in 2-grain tablets, bottles of 50. Three strengths: 1%, 2% and 5% of Thyroprotein.

FULL DESCRIPTIVE LITERATURE ON REQUEST.

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Bacterial Vaccines

For the Treatment of Bacterial Infections.

Acne Vaccine (Acne Bacterin).—For non-pustular acne due to the *Bacillus acne*.

Colon Vaccine (Colon Bacterin).—For colon infections.

Combined Vaccine (Van Cott).—For erysipelas, puerperal sepsis, etc.

Furunculosis Vaccine.—For boils, carbuncles, pustular acne, etc.

Gonococcus Vaccine (Gonococcus Bacterin).—For acute gonorrhoea and its complications.

Gonorrhoeal Vaccine, Combined (Gonorrhoeal Bacterin, Combined).—For gonorrhoeal infections complicated by the presence of staphylococci.

Staphylococcus Vaccine (Albus) (Staphylococcus Albus Bacterin).

Staphylococcus Vaccine (Aureus) (Staphylococcus Aureus Bacterin).

Staphylococcus Vaccine (Citrus) (Staphylococcus Citrus Bacterin).

Staphylococcus Vaccine, Combined (Staphylococcus Bacterin, Combined).—For furunculosis and carbuncle, sycosis, suppurative acne, etc.

Streptococcus Vaccine (Streptococcus Bacterin).—For erysipelas, puerperal septicemia, etc.

Typhoid Vaccine (Prophylactic).—For preventive inoculation only.

Supplied in 1 Cc. rubber-stoppered glass bulbs and in 1 Cc. syringe containers.

HANDSOMELY ILLUSTRATED BOOKLET FREE.

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THERAPEUTIC NOTES.

AN INTERESTING ANNOUNCEMENT IS MADE IN THIS ISSUE BY THE H. K. MULFORD COMPANY CONCERNING MENINGO-BACTERIN (MENINGOCOCCUS VACCINE).—Bacterin therapy is long past the experimental stage, and the immunizing effect of typho-bacterin, for instance, is thoroughly established, the results from its use being sufficient evidence of the worth of this method of controlling the spread of typhoid fever. Remarkable results likewise have followed the use of cholera-bacterin and it is hoped that equally good results will follow the use of meningo-bacterin in controlling epidemics of cerebrospinal meningitis. While immunization with Meningo-Bacterin has thus far been used in relatively few cases it is entirely reasonable to believe that it will prove a most valuable aid in the suppression of epidemics of cerebrospinal meningitis.

Like the other bacterins Meningo-Bacterin is a suspension of the killed bacteria in normal saline solution (0.85 per cent.) The cocci are grown upon a serum agar for about 24 hours, then washed off and suspended in salt solution. They are counted by Wright's method to determine the number of cocci in one cubic centimeter of the suspension, then killed by heating to 60° C. for one-half hour. After dilution of the thick suspension with normal saline solution (0.85 per cent.) so that the two strengths are obtained, the now completed bacterin is subjected to rigid aerobic and anaerobic tests to assure the absence of live germs or spores. Guinea-pigs are also injected to be certain that there are no harmful substances in the bacterin. Trikresol (0.25 per cent.) is used as the preservative.

Meningo-Bacterin is polyvalent, i. e., a number of different strains of meningococci are used.

DIRECTIONS.

The usual site for inoculation is the arm at about the insertion of the deltoid muscle. The dose is given subcutaneously and not into the muscle or into the skin. An area about the size of a five-cent piece is painted with tincture of iodine. The syringe needle is plunged through this area. No after treatment is necessary.

The complete immunization treatment consists of three doses given at intervals of from five to ten days. The first dose is 500 million, the second dose 1,000 million, and the third dose 1,000 million.

For children smaller doses should be used, according to weight. It has been suggested that the unit of body-weight for a full dose be considered 150 pounds.

MENINGO-BACTERIN FOR IMMUNIZING IS SUPPLIED IN TWO DISTINCT STYLES OF PACKAGES.

First.—For immunizing one person there are supplied three syringes, each containing the proper amount for injection, designated respectively, first, second and third doses. The first syringe contains the initial dose of 500 million killed meningococci, and the second and third 1,000 million each. The contents of the first syringe are to be injected as the initial dose, to be followed five to ten days later by the contents of the second syringe, and again five to ten days later by the contents of the third.

Second.—For immunizing ten persons, Meningo-Bacterin is supplied in hospital or board of health

packages containing 30 ampuls or ten complete immunizing doses. The initial doses (500 million killed bacteria) are contained in the ampuls with the red label, the second doses (1,000 million killed bacteria) in ampuls with the white label, and the third dose (1,000 million killed bacteria) in ampuls with the blue label.

In each case the first injection is 500 million (red label), the second 1,000 million (white label) is administered five to ten days later, and the third of 1,000 million (blue label) is injected five to ten days following the second injection.

No syringe is supplied with the hospital-size package, since it is expected that physicians using the same will employ their own hypodermic syringe, after sterilization. The method of withdrawing the vaccine from the ampul is to moisten the rubber top or cap with a drop of Liquor Cresolis Comp., U. S. P., or 5 per cent. solution of carbolic acid; push the needle through the drop of antiseptic on the rubber cap, and then invert the bottle and slowly withdraw the required amount for injecting, following the instructions for the three injections necessary as directed.

The H. K. Mulford Company also supply Anti-Meningitis Serum prepared after the method of Flexner and Jobling, and they will mail upon request to the Philadelphia Office, Mulford Working Bulletin No. 8, on Anti-Meningitis Serum, giving a detailed and impartial review of the literature.

A NEW THYROID PREPARATION.—To Dr. S. P. Beebe, Ph. D., Professor of Experimental Therapeutics in Cornell University Medical School, the profession is indebted for a new and valuable preparation of the active principle of the thyroid gland. It is a carefully standardized product, consisting of certain proteids of normal glands, extracted, purified and adjusted to a content of 0.33 per cent. of iodine. Its preparation has been entrusted to Messrs. Parke, Davis & Co., and the product is offered to the medical profession under the name of Thyroprotein (Beebe).

The selection of normal glands for use in making Thyroprotein, it may be noted, is a very important matter. Heretofore the glands of sheep have been used in medicine, and it is now known that sheep from certain parts of the country always have goitrous glands which are rich in content of proteid of the thyroglobulin type but contain very little iodine. This fact alone accounts for much of the variation noted in thyroid therapy. Furthermore, the thyroid gland as a whole contains certain substances which appear to be not only useless but actually harmful. In the preparation of Thyroprotein these objectionable substances are rejected.

For therapeutic administration the proteid (thyroprotein) is diluted with milk sugar and made into tablets, each of which weighs exactly two grains. These tablets are supplied in three strengths, containing, respectively, 1 per cent., 2 per cent., and 5 per cent. (of 2 grains) of the active medicament. The 1 per cent. and 2 per cent. tablets are used almost entirely in the treatment of goitre. The stronger (5 per cent.) tablets are employed in metabolic disorders, as skin lesions, joint affections, myxedema, cretinism, or other conditions in which there is markedly deficient thyroid activity.

Physicians who are desirous of learning more of this new thyroid preparation will do well to send a request to the manufacturers, Parke, Davis & Co.,

at their home offices in Detroit or any of their branch houses, for their new booklet descriptive of the product. It bears the title "Thyroid Therapy" and contains a lot of useful information.

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TONSIL REMOVAL UNDER QUININE ANESTHESIA.

Bryan D. Sheedy, of New York, thinks that when the tonsil is diseased, one should effect a removal of the entire organ in its capsule, instead of the old operation of partial removal. Many serious nervous and catarrhal conditions result from the enlargement of these organs. The operation should be done, not in the office or dispensary, but in the hospital, the patient remaining there over night. When necessary, ether should be given; cocaine and adrenalin are dangerous to life. The injection of a 5-per cent. solution of quinine bisulphate will remove all pain, if the solution is deposited outside the capsule of the tonsil and into the cellular tissue forming its bed. The technique of the operation is carefully detailed. The tonsil is shelled out by the wire of a snare. There is some hemorrhage, but not a dangerous amount.—*Med. Record*, Oct. 21, 1911.

IPECAC TO ABORT TYPHOID FEVER.

William L. Frazier, of Mountain Home, Idaho, presents the histories of six cases of typhoid fever in which he made use of ipecac to abort the disease. The drug was given in capsules coated with

salol to prevent their dissolving in the stomach and causing vomiting. The ipecac was given for six successive days, beginning with 30 grains, and decreasing 5 grains each day until the dose was 10 grains. The author believes that the disease was aborted by means of this treatment.—*Med. Record*, Nov. 4, 1911.

NEOFORMANS VACCINE IN CANCER.

Alfred Potter, of Brooklyn, N. Y., reports his success in the treatment of inoperable cancer cases at the King's County Hospital, by means of the neoformans vaccine. The *Micrococcus neoformans* has been isolated from cancers, and if not the cause of cancer, it is at least generally found in association with cancer. The author treated twelve inoperable cases with a vaccine prepared from this organism. Three cases which were cachetic were not helped. In the others, improvement followed one or two injections of from 5 to 200 million bacteria. Relief of pain was immediate; the general health improved; ulcerations became cleaner; healthy granulations formed; and the disease seemed to be checked. In cancer of the uterus, the malodorous discharge was diminished, and bleeding was stopped.—*Med. Record*, Nov. 25, 1911.

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SEA-WATER INJECTIONS IN TOXEMIA.

Maclean and Harston, in *The London Lancet*; mention a patient, a married woman, aged 60 years, who suffered from toxaemia of uncertain origin, manifesting itself in pain in the joints and muscles, foul tongue, constipation, and a temperature of 100° F. Ordinary treatment had no effect, and her condition became worse, emaciation increased, there was continuous low fever, and later blood and mucus were passed in the stools. Bacillus coli vaccine was tried without any result. Finally injections of sea-water were given, 25 to 50 c.c. being injected, under strict aseptic precautions, in the right scapular region. These were given twice weekly for 30 injections. The temperature soon fell and remained at normal, the patient increased in weight, sleep became natural, and all the symptoms gradually disappeared. After six months' treatment she was quite well. The author suggests that there are certain conditions which are benefited by an increase of sodium chloride, and thinks that the sea-water treatment is worthy of a more extended trial in such cases.

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VOL. XVIII.

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NUMBER 5

ORIGINAL ARTICLES.

CANCER OF THE RECTUM.*

BY

DONLY C. HAWLEY, M. D.

The subject of cancer is one of the most important that can engage the attention of the medical profession.

That the mortality from cancer has increased and is rapidly increasing throughout the civilized world is the consensus of present day opinion and the testimony of the latest vital statistics.

While there is this admitted increase, there is no diminution in the death rate from malignant disease.

I shall assume that thus far we are agreed and shall not dwell further on this phase of the subject, upon which volumes have recently been written.

Of all cases of cancer 4% are rectal cancer and of all cases of cancer affecting the intestinal tract 80% are in the rectum, or at the recto-sigmoidal junction.

As bearing upon the treatment and prognosis in cases of rectal cancer or carcinoma, it is important to bear in mind, that primarily the disease is confined within the intestinal walls and the degree of malignancy is comparatively mild.

The disease is said to be most frequently met with in persons between 40 and 45 years of age, although occurring at all ages between 20 and 80, while well authenticated cases have been reported in persons under 10 years of age. The average duration of rectal carcinoma, after a diagnosis has been made, is 18 to 24 months in non-operated cases.

The cardinal local symptoms of rectal carcinoma are pain, hemorrhage, diarrhea, often alternating with constipation, the discharges having a peculiar offensive and pathognomonic odor, obstruction and enlargement of lymph nodes. Pain a rather constant and prominent symptom is often absent during the early stages of the disease, unless there is anal involvement, and until the disease which I have designated as

primarily local, has extended beyond the intestinal wall, or has progressed so far as to produce obstruction.

When the disease has advanced to the ulcerative stage, hemorrhage occurs, as a rule in moderate degree, but in many cases severe.

Diarrhea sooner or later appears, and is sometimes the first symptom to attract attention.

Obstruction which is a constant symptom in the later stages of the disease is due either to the growth assuming sufficient size to occlude the gut or to cicatricial contraction. This condition is usually accompanied by tenesmus and a more or less constant desire to evacuate the bowel. The inguinal lymphatics are involved in anal cancer while in cases strictly rectal, extension is through the pelvic and lumbar systems.

Rectal hemorrhage is of the utmost importance in every instance and a patient in which this symptom is present, should never be treated or temporized with, or dismissed without a thorough examination to determine its exact cause.

Diagnosis of carcinoma of the rectum is in most cases comparatively easy and it is therefore more the pity that the majority of patients with this ailment, seek operation only after the disease is far advanced.

Given a case in which there is a recurring morning stool composed only of blood and mucus followed later by a fecal discharge and a diagnosis of cancer can be made with safety and will be verified by subsequent digital or proctoscopic examination. A growth with an irregular elevated and indurated margin surrounding a central ulceration is a carcinoma and can be nothing else.

In cases where the disease is located within reach of the finger, a diagnosis may usually be made by digital examination. In such cases this is the method of choice.

When the growth is located higher up the sigmoidoscope is available for diagnosis, and should always be used with most scrupulous care, an anesthetic being almost never necessary.

A growth located high up, may sometimes be felt by abdominal palpation if the patient is thin

*Read before the October, 1912, meeting of the Vermont State Medical Society at Burlington.

and the abdomen relaxed. In some cases diagnosis is difficult by the methods described and can only be determined by submitting a specimen of the growth to microscopic examination.

The most important point regarding the treatment of rectal cancer is the question of operability.

Can the patient withstand the operation?

Is it probable the disease can be entirely removed?

In operable cases what is the probability of immunity from return of the disease—what lease of life is promised by excision of carcinoma recti?

These are questions of infinite importance to the patient and the answer is often attended with difficulty, even with those most skilled and experienced.

Tuttle in his classic treatise on "Diseases of the Anus, Rectum and Pelvic Colon" reports a mortality of 20.2 percent, in 1578 cases collected by himself of extirpation of the rectum. In 1908 he reports a mortality of 13 percent, in 100 cases of his own.

As bearing upon the probable period of freedom from recurrence Sir Charles Ball reports one case well after 10 years and another after 15 years.

Earle reports freedom from recurrence for 10 and 12 years respectively in two of his operated cases. Other operators report immunity for varying periods up to and including 16 years. Little data is at hand to show the comparative results of early operation but it may be accepted as the unvarying opinion of operators, based on experience and general testimony that the earlier the operation the greater the chance of both immediate and permanent recovery.

This brings us to the point upon which I desire to lay the greatest stress, viz., the necessity of early diagnosis.

I am sure there will be no diversity of opinion upon this phase of the subject and no discussion other than that intended to give it emphasis.

Every case of hemorrhage from the rectum, every case of pain or vague discomfort in the rectal or sacral regions, every case of continuous or recurring diarrhea and finally every case presenting a single rectal symptom in a person who has reached the so-called cancerous age should be immediately thoroughly examined for possible carcinoma recti.

Physicians can render those suffering from symptoms of rectal disease no greater service than by adopting the foregoing as an invariable rule and in the light of present day knowledge are inexcusable for failing so to do, in any case where cancer is present.

During the past three years 17 cases of rectal cancer have come under my observation, in private and in hospital practice, and of these ten were found inoperable.

In my report of cases I do not go back of October first, 1908, for the reason that prior to that date nearly all the cases which came under my observation and nearly all the cases which came under the observation of the other general surgeons in both the Mary Fletcher and the Fanny Allen Hospitals were looked upon as inoperable. Of the 17 cases mentioned above 13 were in males and 4 in females.

Again classifying the cases with reference to age, two were between 30 and 40 years of age, two between 40 and 50, two between 50 and 60, five between 60 and 70 and six between 70 and 80. Of the two cases in the first decade one was 31, and the other 37 years of age and both were inoperable. One case in the next decade, aet. 40, was also inoperable.

The fact that the three youngest patients in the list had inoperable cancer, tends to bear out the generally accepted statement that the younger the patient the graver the prognosis.

During the past three years I have operated six times for rectal cancer, with one death, or with a mortality of 16.25%.

CASE I. A. G. A., aet. 60, came into my service at the Mary Fletcher Hospital, August 10, 1909, with the following history.

One year ago began having diarrhea, which has continued irregularly, accompanied for three months past with hemorrhage. Pain, not severe, has been a late symptom. Has lost 10 to 15 pounds of flesh. Digital examination reveals an elevated and irregular growth just within the sphincter, located anteriorly and extending upwards about three inches and involving three-fourths of circumference of intestine. The edges of the growth are well defined and its central portion is considerably sunken or excavated and is soft and ulcerating. Conditions as described were verified by proctoscopic examination.

On August 12th under ether anesthesia, I removed five inches of the intestine, including the greater portion of the sphincter, which was involved in the growth and a large mass of diseased glands by the perineal method, bringing it down and suturing end of healthy portion to anal margin. Incisions in front and behind anus were closed, leaving in each a drainage opening, into which were inserted a good sized cigarette drain.

Patient went home on September 24th, with anterior opening closed and posterior one to be left open for drainage; the anal margin and lower end of gut being healthy.

CASE 2. E. T. H., aet. 77, came under my observation in my office on November 2, 1909. He gave the following history. Slight and irregular bleeding from rectum for eight months. Seven weeks ago had a severe rectal hemorrhage. Since that time has had 4 to 6 movements daily, which have been diarrheal and bloody. No pain.

Diagnosis. Cancer of rectum, located anteriorly a little above sphincters, involving one-half of calibre of gut and extending upwards 2 to 3 inches.

On December 3rd at Mary Fletcher Hospital I removed under ether anesthesia, $4\frac{1}{2}$ inches of gut by perineal method, bringing health portion down and stitching it to sphincters and skin, with drainage as before described. Patient made a good recovery and has been in comparatively good health since, with very good sphincteric control of bowel and with no return of disease. He has been twice elected town clerk since his operation and at present performs the duties of that office.

CASE 3. A. G. A., aet. 61, entered my service at Mary Fletcher Hospital February 10, 1910. Several indurated nodules can be felt just within and 2 to 3 inches above anus, varying from $\frac{1}{16}$ to $\frac{1}{4}$ inch, or a little more, in size.

Diagnosis. Recurrent carcinoma. (This is the same patient as in Case 1 and you will note that he returned to the hospital just 6 months after first entering).

On February 12th under ether anesthesia I removed by the perineal method $5\frac{1}{2}$ inches of intestine, including the diseased portion and made a thorough dissection of diseased and infiltrated glands, bringing the gut down again and stitching it to the anal margin. Patient made a

good recovery and left hospital in good condition. Although without sphincteric control he has been quite comfortable and able for a year or more to attend to his business, that of running a small country store. He has had no return of the disease up to the present time.

This case is of unusual interest on account of his having had 20 months immunity after an operation for recurrent carcinoma.

CASE 4. Mrs. S. H. P., aet. 66. Consulted me at my office on May 5, 1910. She gave the following history. For 8 or 9 months has had pain in lower part of back. Four to six weeks ago noticed a little blood on stools and since then has passed blood and mucus nearly every day. Pain in back not increased and no pain in rectum. Has lost a little flesh.

Diagnosis of cancer of rectum, situated about 4 inches above anus, made by proctoscopic examination. Mass can also be felt by finger.

I operated on her under ether anesthesia, at the Barre Hospital on May 16, 1910, by combined abdominal and perineal methods. Nine inches of intestine, including the growth and about two inches of normal intestine above it, were removed and the sigmoid colon brought down and sutured to external sphincter, which was left intact. The operation was begun by the perineal route, the peritoneum being opened anterior to gut and the excision then completed by the abdominal route.

The peritoneum was not closed by suture but was carefully walled off by sterile gauze.

The patient died of shock during the night following the operation.

CASE 5. W. A. F., aet. 66. Patient consulted me in my office on March 23, 1911. History. In May, 1910, had severe pain in rectum and soon after noticed a bunch just within anus. The pain and the size of the growth have gradually increased and of late he has had a good deal of hemorrhage. Has lost 15 pounds in weight.

Diagnosis. Cancer of anus and rectum.

On March 26th under ether anesthesia I removed by perineal method $7\frac{1}{2}$ inches of gut with the growth. The growth was extensive and above it were many indurated nodules making it necessary to excise the gut unusually high up. The sphincters were so involved as to make complete excision of the same necessary. The peritoneum which had been opened was sutured to gut. The sigmoid was brought down and sutured at the

anal side. Details of closure same as previously described. No return of disease at present time.

CASE 6. A. A. M., aet. 70, consulted me at my office on August 16, 1910. About three months ago began having pain and discomfort in lower part of abdomen and in pelvis and a bearing down sensation in rectum, accompanied by bloody and mucous discharges.

Diagnosis: Cancer of rectum located 3 to 4 inches above anus. On August 22 at the Mary Fletcher Hospital, I operated on him under ether anesthesia by combined abdominal and perineal methods removing the growth, together with 10½ inches of intestine, bringing sigmoid colon down and suturing it into anus. The coccyx was removed in order to get sufficient working space. He is still in the hospital with the wounds nearly healed and general condition satisfactory. The lower 1½ inches of the gut sloughed in this case, probably on account of lack of proper circulation, an accident which sometimes occurs when so extensive an excision is necessary.

Of the five cases which recovered, one has had 26 months of immunity, counting from the first operation or 20 months after operation for recurrence.

The recurrence was no doubt due to failure to remove all the diseased lymphatic glands about the growth.

In Case No. 2 the period of immunity from recurrence is a little over 22 months.

Case No. 5 is well six months and a half after operation.

The last case reported was operated too recently to be of interest other than that attaching to immediate recovery.

From this resumé of operations for carcinoma recti, I feel warranted in the conclusion that such operations are more feasible than was formerly supposed, and that early operation promises much in the future, in this until recently neglected field.

The immense advantage of early operation while the disease is yet local, cannot be overestimated.

I desire in conclusion to urge again the importance of early examination and diagnosis in every case of rectal disease.

SMALLPOX AND VACCINATION.

BY

H. A. LADD, M. D.

Smallpox which used to be a most loathsome and fatal disease, has of late years in this country at least, been milder and less fatal, though still most loathsome. Although this malady is less severe than formerly, still it is the same poison, every now and then showing its old time virulence, and may at any time resume its wonted fatality. It is the only disease that is absolutely under the control of the individual or the community by means of vaccination, that Heaven born discovery of the immortal Dr. Jenner. I need not hesitate to say that any individual or community that suffers from smallpox, in the light of the experience and knowledge of to-day is guilty of ignorance, carelessness or prejudice. More than 100 years of experience in all climes and countries have demonstrated the reliability of vaccination and to-day we have a far more reliable vaccine than ever before. It would be too long a story to detail the history but we have a great many demonstrations of its efficiency, not only in the case of individuals, classes and communities, but in that of a modern, highly educated, very progressive, populous and commercial nation that for years past has totally extirpated smallpox from its dominions and has no fear of any inroad of this disease, no matter from what source or of what type. I refer to Germany. There the "Powers that be" are intensely practical. They had suffered as do other countries from this plague, but said they, "If vaccination be a preventative it must be thorough" and in their way of doing things, laws were not only made but also enforced, and now, unless occasionally an imported case, there is and has not been any smallpox in Germany. We can do the same if we will, but must follow the same course—make a compulsory law and enforce it.

Conscientious scruples and prejudice though deserving qualified recognition, cannot be so construed by the community, although we may allow the individual the right that every one has, to indulge in smallpox or any disease or extravagance that he may wish or can afford, yet

no person has the right to put in jeopardy the health of another, and conscientious scruples do not, like vaccination protect from smallpox. There is an undisputed law, that the right of the individual must give way to the right of the community, and this right should be as much enforced in reference to disease as it is in reference to property. In strict justice no one has the right to go unprotected or to expect others to go to expense and trouble to protect him from that which can be so easily guarded against. To illustrate: I had a complaint from a man in whose town were cases of smallpox, that the local authorities did not carry out an efficient quarantine, and in consequence he and his family were endangered. My reply was that quarantine was rarely as efficient as it should be and that in any case it was only of temporary benefit, owing to the inability to carry it out in fact as in spirit, but it was of value in calling attention to the presence of preventable disease, tending to prevent its spread until more efficient methods could be installed. I also told him that he had no just claim on the authorities for if he would have himself and family vaccinated they would be immune to the disease, absolutely indifferent to its presence and quarantine would, in so far as he was concerned, be unnecessary. The above case puts the question in a nut-shell. I doubt not but that you will all say, "From an academic point of view we accept your dictum, but what do you propose to do about it?" In answer I would say, if we can not get all we want let us get as near it as we can. I have found that many do not get vaccinated owing to the cost. It would be economy for every town to assume the cost for those unable or unwilling to protect themselves.

In the event of an epidemic we should have the power to quarantine all those who, not being protected, refuse to be, for during such time the unprotected are a menace to the community. I believe that the most radical anti-vaccinationist would prefer vaccination to being restrained for weeks. In regard to personal liberty so-called, we may grant the right to the adult and he must take the consequences as very many have done, but it is a question whether anybody should have the right to refuse to give to his child that protection which the vast majority of people have reason to believe is required—to refuse to give a child personal immunity, as well as to make her or him a safe member of the

community, and this the more, as child vaccination gives a more enduring protection than does adult vaccination.

SUMMARY.

In the unprotected, smallpox is the most painful, loathsome and fatal disease that affects humanity.

Of late years it has been mild in character, presumably due to inherited protection, but liable at any time to break out fiercely.

Vaccination confers protection with small and harmless constitutional disturbance, and is only propagated by direct inoculation.

Over 100 years of experience with vaccination in every clime, with all classes of people has demonstrated its reliability.

A protected community can ignore smallpox and as well, a protected person can travel or expose himself with impunity.

Vaccination of infants gives protection for life, and an immunity for a longer period than in the case of adults. Why should a child be refused this boon?

Smallpox is the only disease over which we have absolute control. Why not control it?

SOME METHODS OF LABORATORY DIAGNOSIS.*

BY

GEORGE PARMENTER, M. D.,
Montpelier.

In presenting a brief paper for your consideration this evening, it is my purpose to urge a more general use of diagnostic methods at our command, rather than to attempt to describe new methods.

I wish first of all to say that this paper is not an attempt to cover the field of laboratory diagnosis, but simply to bring to your attention and offer for your discussion a few of the more generally used methods by which the laboratory may help us in diagnosis.

During the last few years, there have been published in the medical journals many papers protesting against the tendency to accept laboratory findings to the exclusion of clinical findings in making a diagnosis of disease.

*Prepared for and presented to the December, 1911, meeting of the Washington County Medical Society.

It seems to me that this contention is right, but I believe the responsibility for this condition lies with the general practitioner, rather than with the laboratory work. No laboratory man likes to make a diagnosis without a clinical history. It is the general practitioner who seems to want the diagnosis made without effort on his part. But let us not go to the opposite extreme and neglect the aid which the laboratory can give us. We read that in the early years of medical practice, the examination of urine consisted in studying its color, quantity and physical properties.

Bright in 1827 first described the diseases of the kidney, which still bear his name, basing his diagnosis upon the presence of "coagulable urine" boiled in a teaspoon over a candle. His statement that the presence of albumin in urine means nephritis was practically unquestioned for fifty years.

Henle described casts in 1844, and from that time until the early nineties, the presence of albumin and casts in the urine was considered indisputable evidence of nephritis. Since that time, many investigators have shown us that albumin and casts may appear in the urine, either alone or together, without a true pathological nephritis; and on the other hand, that a true pathological nephritis may exist for long periods without the presence of either.

One prominent worker tells us that "the attempt to estimate the anatomical condition of the kidneys by the measurement of albumin and the search for casts is fallacious in the extreme." "The most reliable data about the urine are those most simply and quickly obtained, the twenty-four hour quantity, the specific gravity and the color." In short, the methods of Hippocrates. The same writer also said in emphasizing the value of time in arriving at a diagnosis: "one may have any amount of albumin and casts, yet no nephritis, provided they do not persist. But chronic albuminuria, with cylindruria usually means nephritis. The same is true of many of the other signs of what I call renal insufficiency in their relation to anatomical nephritis. Scanty urine, even anuria, or at the other extreme, great polyuria and low gravity may exist without nephritis. It is their *persistence*, not their *existence* that is serious." We must freely admit these possibilities. We know albumin may occur in urine from a large number of causes, and

from any portion of the urinary tract; that casts may only be found after repeated negative examinations, and then may be found in abundance. To me these facts are the best possible reason for making careful and repeated examinations of the urine in all doubtful cases. Let us not return to the methods of our ancestors simply because urinary findings have been proven unreliable in a comparatively small number of cases; but on the other hand, let us make the most careful chemical and microscopical examination of which we are capable, using all the facts within our knowledge to aid us, and make our diagnosis only after a thoughtful consideration of all these factors.

To determine the condition of the kidneys, sufficiently for practical purposes, it is necessary to have an accurate record of the quantity of urine in twenty-four hours and a careful chemical and microscopical examination of a specimen taken from the mixed urine of twenty-four hours, for several consecutive days. The examination of a single specimen taken at random means absolutely nothing definite in the way of diagnosis. The custom of examining a single specimen before giving a general anesthetic is unsafe. One worker reports some kidney change in 15% to 20% of cases coming for operation, and concludes that the urine should be measured and examined several consecutive days before giving a general anesthetic, and should be measured and examined after the anesthetic, the quantity being the most important. But let us not allow our enthusiasm to outrun our judgment in this work. Those who are writing of physiological albuminuria and who claim to find albumin in the urine of from 4% to 76% of healthy individuals are using exceedingly sensitive reagents in most cases.

A comparison of these methods may be of interest. Heller's Test will show albumin in a dilution of about 1-30,000. The potassium ferrocyanide test in about 1-50,000 while Tanret's and Spiegler's reagents will show its presence in dilutions of 1-200,000 and 1-350,000 respectively.

Spiegler found albumin in the urine of fifty cases of scabies, and wrote that albuminuria was a symptom of that disease. Bright, by boiling urine in a spoon over a candle made a correct diagnosis in every case. Let us not be misled by a trace of albumin shown by some sensitive reagent, or by an occasional cast thrown down

by the centrifuge; but also let us not neglect any of the means at our command for making a diagnosis of diseased kidneys.

Leaving aside the diagnosis of nephritis, there are several other reasons for making a careful examination of the urine.

Glucose may mean true diabetes or a temporary disturbance of metabolism.

Glycosuria may accompany disease of the pancreas, liver or brain; or may follow the use of certain drugs. Cases which persist are usually diabetes.

The presence of acetone and diacetic acid in urine is perhaps of more importance than the quantity of sugar. These tests are simple and may be easily and quickly made by any physician in his office. Acetone may appear in starvation, carcinoma of stomach, after ether or chloroform narcosis, and in certain digestive disorders. Here again persistent. Diacetic acid in urine usually means a grave disorder of metabolism. It appears in the later stages of the conditions which produce acetone. It is very volatile and therefore should be searched for in specimens under twenty-four hours old. Search carefully for glucose in the urine before administering a general anesthetic. Deaths from diabetic coma have followed the use of an anesthetic when the urine had not been examined before operation. Do not take for granted that because the specific gravity is below 1.030 the urine does not contain glucose. Be sure.

The action of the intestinal bacteria upon proteids in food results in the formation of indol, which is also produced by putrefaction of proteids under other conditions. Indol, so formed, is absorbed into the blood and oxidized (possibly by the liver) to indoxyl (indican) which is excreted in the urine. Indican or indoxyl is present in normal urine in minute quantity. The quantity is increased by any condition which permits putrefaction of intestinal contents. It is present in excess in the urine of typhoids, in patients having a gastro-enteritis in any form, and in those having a disturbance of liver function.

I have found Indican in the urine of practically every patient admitted to this hospital, suffering from appendicitis, gall-bladder or bile duct disease; and in the fever patients from whatever cause; and have found it disappearing very quickly after the thorough clearing of the intestinal tract. I therefore feel warranted in

recommending to you the indican test as an index of the condition of the digestive tract.

The diazo reaction has been of use in the early diagnosis of typhoid fever, being present in 70% to 80% of cases in the first two weeks, occurring before it is possible to get the Widal reaction. The intensity of the reaction is as a rule parallel with the intensity of the disease differing from the Widal reaction in this respect.

The fact that the reaction occurs in some cases of lobar pneumonia, acute pleurisy, measles, scarlatina, tuberculosis, does not interfere with its usefulness in most cases of suspected typhoid.

The continued presence of the diazo reaction in persons without fever points to tuberculosis and is also considered a bad prognostic sign.

The value of microscopical examination of urine for crystals, tubercle bacilli and gonococci is unquestionable. I would emphasize the fact that the absence of a suspected microorganism in a single specimen is without diagnostic significance. Persistent search will give us definite results.

The methods of examination of blood have been a sort of mystery to physicians and patients alike. The physicians do not appear to appreciate the value of such examination both to themselves and to their patients, and the average patient looks upon a suggested blood count as he would upon a surgical operation without an anesthetic.

We know the normal number of erythrocytes and leucocytes, the normal percentage of the leucocytes, and the variations which may occur within normal limits. Some blood examination should be made in nearly every severe case of illness, giving us definite knowledge of the blood condition, showing us whether the body is meeting the pathological condition or is failing to do so.

In pernicious anemia we find great variation in size and shape of red cells, the number often below 1,000,000, large nucleated red cells (megaloblasts), leucocytes diminished, with relative lymphocytosis.

The characteristic remissions of the disease are reflected by the improvement in the blood picture. In secondary anemia the blood varies greatly with the cause, duration, etc., but approaches the chlorotic type.

In chlorosis we find moderate reduction of erythrocytes, variation in size and shape, leucocytes usually normal, haemoglobin very much reduced, usually below 40%. In leukemia we have diminished red cells and greatly increased numbers of leucocytes. The myelocytes in the blood of myelogenous leukemia are among the most striking blood pictures we have. We simply mention the early leucocytosis and the lymphopenia of pneumonia, the polycythemia followed by slight anemia, leukopenia and relative lymphocytosis of typhoid, and the eosinophilia of trichinosis. The examination of sputum is largely confined to the search for the tubercle bacillus, but there are other organisms which may be of as much importance to us as physicians.

The presence of tubercle bacilli in sputum is conceded to be proof of tuberculosis. Their absence can have no diagnostic value unless such absence continues through repeated examinations and without physical signs. A knowledge of the presence of pneumococci, staphylococci, streptococci, pus, etc., may be of as much value to us as the presence or absence of tubercle bacilli.

The examination of gastric contents has not been satisfactory in my experience. The difficulty of obtaining the results of test meals prevents a more general use of this diagnostic method. The examination of vomited matter may be of great use, giving us accurate knowledge of the condition of the stomach and the quality and activity of the gastric juice.

Dry test meals have been suggested as being less subject to error than the more generally used formulae, but their use is still in the experimental stage.

A diagnosis of intestinal obstruction by using the stomach tube or by examination of vomited material may be made before the condition becomes inoperable, the diagnosis being made by the finding of fecal matter in the stomach contents.

The examination of stools, while less important in our climate than in tropical regions,

will still give us much valuable assistance in diagnosis.

Nothnagel has said that the study of the feces is of more importance in the diagnosis of intestinal conditions, than the examination of sputum in diseases of the lungs.

The presence of blood, pus, masses of epithelium, mucus, parasites, etc., combined with clinical findings cannot fail to have a definite meaning to the careful observer.

As an index of digestive activity, the stools are of the greatest importance.

In closing, I wish to call your attention to a few points which are more or less likely to be overlooked. You can be of great assistance to your laboratory men, and incidentally receive more help from them, if you treat them fairly. Do not think because the laboratory worker asks you for data that he is trying to get you to make his diagnosis for him. You call him in consultation, why not treat him as a consultant? Give him facts about the case as you know them, accept his help if he is able to aid you, and give him credit if it is due.

Laboratory work is not magic, no royal road to diagnosis without effort; it is hard work, requiring close application, attention to detail, and some good judgment.

If application blanks are furnished you, fill them out carefully; they have a real value else they would not exist.

Use care in obtaining specimens. With urine, measure the twenty-four hour quantity, record it and send at least four ounces in a clean bottle. Dregs of perfume, toilet water, face cream, flavoring extracts, flies and dirt do not make the diagnosis of urine conditions any easier.

In obtaining other specimens use care, follow directions carefully if they accompany the package, and above all, send your specimens to the laboratory as nearly free from foreign substances as it is possible to get them.

Gentlemen, I thank you for your attention.

Following the paper, Dr. Parmenter presented for study a large number of very interesting specimens.

Vermont Medical Monthly.

*A Journal of Review, Reform and Progress in the
Medical Sciences.*

H. C. TINKHAM, M. D.,
B. H. STONE, M. D., }.....*Editors.*

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EDITORIAL.

"TOO MANY DOCTORS."

There are not! At this day and date in this great country, there is a dearth of medical men. Hold on now, don't everybody speak at once! Think of this, there are at present over one hundred thousand fake curists—Christian scientists, osteopaths, nature fakirs, physical culturists, Emanuel movers, herb-doctors, amulet and patent medicine makers, magic workers, back to natureists, etc.—practicing treatment of the sick. Give each of them a pro-rata of at least one hundred misled humans and there are ten million people spending their life and substance on maintaining these birds of prey.

Ten million misled unfortunates if made to understand the broad humanitarian aspect of modern medicine could utilize at least twenty thousand graduates of medicine. A case to illustrate: the writer told the family of a rather poor patient, that their mother had a beginning carcinoma of the cervix and advised consultation with a view to operation. The patient was examined by an excellent surgeon who advised immediate operation. The family as well as the

patient were almost decided on the advised procedure. A kindly (?) neighbor now made her appearance on the scene and after condemning the knife-cager doctors, recommended an herb curist who "had cured a number of desperate cases." That poor family paid close on to one hundred dollars for sixty cents' worth of grass and in ten months the patient died of a general carcinosis. It came to light afterwards that this so kindly disposed neighbor received twenty-five per cent commission on all recommended cases.

Granted there are "undesirables" in the profession who perhaps crowd the conscientious physician and unfortunately do this in localities where the community can least afford to maintain both of them. On the other hand, however, there are localities in the United States, Canada and Mexico, where there is a great need of more medical men. In the personal knowledge of the writer, there are places in the south and southwest covering territory from thirty to fifty miles in radius, having a population of from two hundred to fifteen hundred, where there is either one or no legitimate practitioner. Diseases and emergencies are almost as frequent there as in crowded cities. The fact that these people are compelled to obtain fake relief is due to the unventuresome spirit of graduates in medicine. They are afraid to try these sparsely populated districts. One physician whom the writer met in the mountains of Western Virginia said that he practiced in a territory of thirty-five miles where there were about a thousand inhabitants. He often had to attend to some very sick people but was unable to make all his calls as he had to do these on horseback. He said there was room for two or even three young graduates who would be willing to try and hold out for a little while.

In three small towns in southwestern Texas, visited by the writer, there was an aggregate of two thousand population and six practition-

ers. Three of them were not graduates in medicine, one graduate practiced dentistry besides medicine and kept a drug store, while one of the other two regulars came down there for a lung condition and practiced medicine as the spirit moved him. In time of three months, there were three cases of gun shot injury and one of suicidal attempt, besides a few cases of typhoid, small-pox and spotted fever. Of the ordinary diseases there were plenty. All the gun shot cases died of infection and not of the injury itself.

A public spirited citizen said that he would give a good regular graduate in medicine a free home for a year if such a man should come and practice there.

The discouraging statistics that are held out to a prospective student of medicine and the recent graduate, are gathered from crowded cities and do not give any idea of the real state of affairs. For example in a city like New York there are at least two hundred prominent physicians who take care of more patients than they have a natural right to. Natural right? Yes sir. It is physically impossible for these men to take the proper care of their excessive clientele. They are brilliant men, no doubt. But do they cure? Perhaps some of their cases. Let us see, 200 men employing one assistant makes room for 200 graduates. Two hundred assistants taking the *proper* care of 10,000 "ordinary" cases keep them from going to charlatans and fake curists. It is a fact that the vast majority of people would sooner be treated by a sensible and sympathetic physician than by a fakir. And many of the profession drive many ailing people to the doors of many charlatans, simply by physical inability to take care of the sufferers. A famous stomach specialist in New York sees twenty to thirty patients of a morning. Can you tell me how many of these receive radical attention? That man could very profitably em-

ploy 5 hospital trained men. Sporadically he employs one.

Dispensaries—here I must stop. I choke with rage, indignation, nausea, disgust and sixteen other psychic revulsions. More deserving practitioners are deprived of a legitimate income by many of the so-called dispensaries than are injured by the whole tribe of Christian Scientists and nature cure venders. Don't misunderstand the situation. Dispensaries are not an evil. They are a great benefit to the deserving poor. But here we stop, for two reasons: firstly, half of the deserving poor do not get to the dispensaries and half of the dispensaries are not built for the deserving poor. Rigid laws in reference to dispensaries would make room for many graduates in medicine. May I be venturesome enough to say that a portion of this abuse is carried on in public hospitals? Now, really, would it not be more altruistic and make more room for doctors of medicine if a few more graduates were allowed "in?" And as for some sanatoriums, Lord deliver me! This prayer I mean both literally and figuratively.

Therefore to those that raise the hue and cry of too many doctors—what are the facts?

The Royal Tuberculosis Commission appointed by the Crown to inquire and report with respect to tuberculosis: 1st, to report whether the disease in animals and man is one and the same; 2nd, whether man and animals can be reciprocally infected, and 3rd, under what conditions, if any, transmission of the disease from animals to man, takes place, and what circumstances are favorable and what unfavorable to such transmission, has just issued its final report. This report excludes as a source of danger to man avian tuberculosis, but concludes as in its former reports, that bovine and human tuberculosis are interchangeable. The Commission distinguishes three types of tubercle bacil-

lus, the human, the bovine, and the avian. The exact differentiation of these types is rather difficult and the differences are not permanent and stable, but the human tubercle bacillus can usually be distinguished from the bovine kind, by its more ready growth in artificial media and by the results of inoculation, in rabbits, calves, cats, pigs and goats, its lesions being slighter and less progressive in these animals than those produced by the bacillus of the bovine type. The lesions produced in guinea pigs and monkeys by both germs vary but slightly. The Commission while for obvious reasons unable to make experiments upon man state nevertheless that they have investigated many instances of fatal tuberculosis in man in which the disease was undoubtedly caused by a bacillus of the bovine type and by none other. In pulmonary lesions in the adult, this type of bacillus is rarely found, but in the abdominal tuberculosis especially in children, fifty per cent show the bovine bacillus and that type alone. This report made by men picked out for their distinguished ability and working in a position which would render them absolutely unbiased is of great significance and confirms the conclusions of a like commission appointed by the German government. These facts taken in connection with the knowledge of the high percentage of tuberculosis in cattle in this country, and the oftentime demonstrated fact that milk, butter and cheese, from tubercular dairies almost invariably show the presence of tubercle bacilli, makes this question of bovine tuberculosis one of tremendous importance. Most of our legislation in reference to the tubercular cow has been framed with an idea of saving the cattle from farther inroads of this disease, even the pasteurization law which was passed by the legislature of six years ago to be repealed in two years, pasteurized creamery by-products only! leaving the butter, cream and cheese to be consumed by the human in its unsterilized condition.

The question of eradication of human and bovine tuberculosis we believe to be inseparably connected and any crusade toward the accomplishment of the suppression of this disease should hold this fact firmly in view.

Our knowledge of the cause, vehicles of transmission and methods of prevention of typhoid fever is so complete now that the continued prevalence of this disease is a disgrace to any community. It simply proves careless uncleanness on the part of someone. We are apt to blame the sanitary authorities for any such outbreak and look to them for the prevention of repetitions of the same kind, but in fact the blame can in very few instances be laid at their door. It finally comes back on the stupidity, obstinacy, indifference, ignorance of a few individuals—or as can be cited in a few disgraceful instances—the majority of the community. Shed of all its refinements, every case of typhoid fever means that the victim has taken into his stomach feces of another individual and so long as this condition is possible typhoid fever will occasionally appear. The potentiality of the trouble is apt to lie in filthy conditions along the water supply or milk route, but there is always an individual source, oftentimes entirely blameless in that he has no suspicion of his danger to the community. An interesting case of this kind has recently come to the writer's attention which prompts this discussion on the subject. A certain small village in the state has recently been suffering from a number of cases of typhoid fever all coming down with it about the same time. The fact that these cases all occurred about ten days or two weeks after the spring thaw and an investigation of their distribution eliminated the milk naturally threw suspicion on the water. An inspection of the shed disclosed the fact that several farm houses were so located that they

drained into the water supply, and the further fact that in one of these families there had been a case of typhoid fever about eighteen months previously. This case was in all probability a carrier. When the spring thaw washed the banks, some of the discharges of this convalescent with other filth reached the stream and the result was inevitable. The blame for this occurrence is two-fold. In the first place the community should have safe-guarded its people from the danger of drinking sewage, and secondly the physician who attended this man should have thoroughly warned him of the likelihood of his being a menace to others and instructed him in the methods of so disposing of his discharges as to render them innocuous. This last point, the writer wishes to emphasize most strongly. It has been definitely shown that twenty per cent at least of all convalescents are typhoid carriers for a longer or shorter time. Some of these can be cleared up by the use of hexamethylenamin, but a larger number are resistant to all forms of treatment yet devised. Few of these cases will voluntarily infect others and if the physician will do his part by clearly explaining the facts to the patient, we feel sure that the danger from these individuals can be materially lessened. This does not relieve the community of the responsibility of safe-guarding its people from any contaminated water, but it is oftentimes much easier to impress the individual than the community, and one source of infection removed may mean much. While we should never cease to urge the protection of water and milk supplies from all contamination, we can meanwhile before this much to be desired security has come, do much by taking care of the individual source of infection.

CLINICAL SOCIETY OF NEW YORK POLY-CLINIC MEDICAL SCHOOL AND HOSPITAL.

Meeting of April 1st, 1912.

THREE CASES OF STERILITY SECONDARY TO AD-NEXA DISEASE: CURED BY OPERATION.

Presented by Dr. Henry V. Holcomb.

These three cases were of interest as showing what could be accomplished by conservative work.

The first case was a woman 19 years of age who had had a previous miscarriage in the sixth week of pregnancy, and gave symptoms showing pelvic trouble. Operation by Dr. Child showed both ovaries bound down by adhesions, a cyst attached to the left tube, and the tubes closed. The cyst was evacuated, the adhesions broken down, and the tubes probed with a fine bougie their entire length. Convalescence was uneventful. Four months after the operation she was free from any abdominal symptoms. Menstruation regular. She later showed symptoms of a floating right kidney which was anchored by three silk stitches. Convalescence from this operation was also uneventful. February 2nd, she had her last menstruation, and by the end of March she began to have morning vomiting with swelled breasts, and all the evidences of pregnancy. She had a precipitate delivery of a seven and half months fetus in the following August. The child died but the mother is alive and well.

The second case was somewhat similar. The patient came with all the abdominal symptoms of inflammation of the appendages. Dr. Child found on operation that both ovaries were prolapsed and bound down by adhesions, occluding the tubes. After her operation she returned home well. One month after operation she became pregnant and was delivered of a full time child.

The third case was a woman of 31 years of age who had been sterile for thirteen years. She had a former child and was anxious to have another. She had pelvic pains bilaterally, painful

and profuse menstruation, which had been present for the previous four years. Examination showed a retroverted uterus, and tender appendages. Local treatment gave no relief. Operation in 1909 by dilatation, curettage, followed by laparotomy showed the same adhesions of ovaries, with closed fimbriated extremities as in the other two cases. The same method of treatment was followed and the patient made an uneventful recovery. She gained in weight after the operation, and in the following November was delivered of a normal child.

None of the above three cases came to be operated upon for sterility but Dr. Holcomb laid stress upon the desirable outcome of cases who have primarily adnexal trouble, and in the correction of this secured the desired pregnancy. Dr. Holcomb said that as far as could be ascertained these cases were free from gonorrhoea.

Dr. Child said that the cases reported were very interesting to those who were striving for the correction of sterility where the fertility of the husband was unquestioned. He had felt that it was important to thoroughly probe the tubes in these cases to insure an absolute patency. With the adhesions of the adnexa corrected, malpositions replaced, and the toilet of the uterus complete, he thought that there was field of work open to the careful and discriminating surgeon, which would be effective in overcoming some hopeless cases of sterility.

Dr. Holcomb in closing the discussion said that the tubes were absolutely closed and the fimbria clubbed so that in the ordinary course of events pregnancy would have been impossible.

SPECIMEN OF AN ABORTED RIGHT KIDNEY WITH GREATLY ENLARGED OPPOSING KIDNEY NON-FUNCTIONATING.

Presented by Dr. Chetwood.

Dr. Chetwood illustrated the value of the colorimeter test in measuring the capacity of the kidney function. His patient on cystoscopic examination showed apparently normal ureteral orifices from both kidneys. The left ureter was easily catheterized withdrawing urine of low specific gravity, deficient in urea and a number of leucocytes; pus though present was in insignificant amount. The right ureter was rigid and impossible to catheterize and the cystoscope showed a certain amount of purulent granular material slowly exuding. The patient was

then subjected to the colorimeter test, made by injecting 1 cc. of phenol-sulphone-phthalein, after having previously emptied the bladder. At one and two hour intervals the urine was collected from the bladder. The returned percentage of color was so low that the individual kidneys were tested separately, resulting in an absence of color on the right side and a very low color return on the left.

Operative treatment seemed necessary, and after taking X-ray pictures to rule out the possibility of a calculus, the patient was operated upon. Operation showed a vestiginary right kidney with a ureter entering the bladder but having a sacculated distal end. On the left side which was unsuspected there was a perfectly normal ureter below while above was a large ureteral sac almost as large as the small intestine, which entered the kidney. A large perinephritic pus sac occupied one side of the kidney, and practically no kidney tissue remained even in this organ to secrete. The patient could not possibly have lived as proved by the colorimeter test and subsequently verified by autopsy.

Dr. Sinclair said that in Dr. Chetwood's case there had been a slight previous injury many years ago, but aside from blood in the urine for a few days no recurrent symptoms of any kind had occurred.

Dr. Wyeth said a very interesting phase of the case was the extremely limited excretory area eliminating urea. Considering the good health the patient enjoyed he thought the skin must have employed an important part in the excretion of urea.

NEWS ITEMS.

Gov. Dix has just signed a bill for the sterilization of a certain class of criminals in that State. New York follows in the lead of Indiana in this important legislation.

Dr. W. Wallor of North Troy has located in Lyndonville for the practice of medicine.

Dr. Edward H. Bradford was elected dean of the Faculty of Medicine in Harvard University, March 10, vice Dr. Henry A. Christian.

Dr. and Mrs. C. A. Pease, who have spent the past six months in Europe have returned to Burlington.

Dr. S. Martin has located in Alburg for the practice of medicine taking up Dr. Rogers' practice. Dr. Rogers has moved his family to Vergennes.

Dr. E. Jones has bought out Dr. A. L. Larner's practice in Hinesburg.

Dr. A. V. Cooper has also located in Hinesburg.

On the editorial staff of the *Medical Bulletin*, the official journal of the Harris County (Texas) Medical Society we note the name of Dr. W. Burton Thorning. Dr. Thorning is widely known to many Vermont men, graduating from the College of Medicine of the University of Vermont year 1899, and to many Massachusetts men around Winchendon, where, until recently, he practiced.

A booklet has just been received giving the post prandial exercises on the occasion of the complimentary banquet given by the physicians of Concord, N. H., to Dr. G. P. Conn, in honor of his eightieth birthday. Dr. Conn attended two courses of lectures at Vermont Medical College, Woodstock, but received his degree from Dartmouth. He practiced at Randolph and Richmond in this state; after serving in the war of the Rebellion he located at Concord, where he has resided since. He has been a president of the State Board of Health of New Hampshire since its establishment in 1881; was professor of hygiene at Dartmouth 1894 to 1908 when on his resignation from the chair he was appointed emeritus professor.

Dr. Ralph H. Parker and his wife, Dr. Blanch H. Parker, have moved to Salem, N. H., from Chester, N. H.

Dr. J. S. Roberts has left Nashua, N. H., and is now practicing in Chester, N. H.

Dr. Bertha L. Cameron, Boston University, 1911, has opened an office in Manchester, N. H., her home.

The Court of Appeals of New York has just handed down a decision against the Bureau of Municipal Research in which it was held that no taxpayer could have access to the records of the Health Department unless he showed a personal right or interest in the item to be examined. The bureau thinks that under improper administra-

tion the Health Department would be easy ground for the grafter.

Dr. Henry A. Christian, physician in chief of the Carney Hospital, Boston, has resigned and will go abroad with Dr. Thomas F. Lee, his probable successor. Dr. Christian has recently accepted the position of chief physician of the new Peter Bent Brigham Hospital in Boston.

Dr. G. G. Murray has removed from Orwell, Vt., to Bellows Falls, Vt.

Bellows Falls, Vt., is to have a new cottage hospital. It will open about May 1st, the funds for it were raised by the citizens from various sources so that it is the result of a public sentiment. It is to have ten beds and several private rooms.

Dr. George A. Underhill of Nashua, N. H., died April 1st, suddenly, of edema of the brain. He was born in the year 1857 and graduated from Dartmouth College in the class of 1882 and later from the medical department of the University of New York.

Dr. John B. Murphy of Chicago, President of the American Medical Association, has been secured to give a paper on the More Recent Results in Surgery of the Osseus System, at the Montpelier meeting of the State Society.

The will of the late Lord Lister disposes of an estate valued at \$3,308,330. By it Lord Lister gives \$50,000 each to the Royal Society, the King Edward Hospital, and the North London University College Hospital, on the condition that his name shall not be associated with the bequests. The sum of \$100,000 is also bequeathed to the Lister Institute for Preventive Medicine, London.

Because of the danger of an epidemic of measles in some of the small dormitories used by the freshman class at Yale University, the university authorities recently sent seventy members of the class to their homes. A number of cases had developed within a very few days in the immediate vicinity of the dormitories.

The Utah State Board of Health has issued an order abolishing quarantine against smallpox. Houses in which smallpox patients are under treatment are to be marked with a flag but its other inmates are to be allowed to move about

freely. It is maintained that quarantine against the disease is ineffective and harmful in so far as it gives the public a false sense of security, discouraging resort to actual preventives.

All of the eight hundred enlisted men and fifty-two officers in the Fifth New Jersey Regiment, at Paterson, N. J., will shortly be vaccinated against typhoid fever, the vaccine being supplied by the medical department of the U. S. A.

Friends of the late Dr. A. O. J. Kelly, assistant professor of clinical medicine in the University of Pennsylvania, have presented the sum of \$1,000 to the trustees of the university as a permanent memorial of Dr. Kelly's services to the university, the income from which is to be given annually as a prize in clinical medicine.

The entire staff, consisting of ten physicians of the Municipal Hospital for Tuberculosis of Lawrence, Mass., has resigned. The trustees of the hospital have also retired, the action of all being taken because of the decision of the director of public health in determining that the hospital should come under the direction of the city physician and his staff.

Dr. W. C. Klotz, who for over three years has been superintendent of the Vermont Sanatorium at Pittsford, has resigned to go to Douglass, Ariz., and take up the practice of medicine privately. His successor has not yet been appointed although, it is understood, that the board of trustees have interviewed applicants for the place. Dr. Klotz will remain at Pittsford until someone is secured to fill the vacancy. The present superintendent began his duties at the sanatorium in March, 1909. He was associated for some time previous to that with Stonywood Sanatorium in the Adirondacks and was engaged in the treatment of tuberculosis at Saranac Lake, N. Y., before that.

The annual meeting of the American Editors' Association will be held at Atlantic City, N. J., on June 1st and 3rd with headquarters at the Marlborough-Blenheim Hotel. Dr. Thomas L. Stedman, editor of the *Medical Record*, will preside and an attractive programme is being prepared. The annual banquet will be held on the evening of June 3rd. Every editor and those associated in medical journalistic work will find this meeting worth attending.

U. S. EXPERT SENT TO CONGRESS AT ROME.

Washington, April 5.—It has just been learned that the United States Agricultural department is to take a prominent part in the Seventh International Congress Against Tuberculosis, which will bring together delegates from all the nations at Rome on the 14th of this month.

It has long been known among the students of this plague that the most important work in identifying bovine tuberculosis as a common source of human tuberculosis has been done by one of the experts of the Agricultural department, who confuted the great German, Dr. Koch, the discoverer of the germ of tuberculosis, when he (Koch) in 1901 advanced the supposition that bovine and human tuberculosis were not related as cause and effect.

This American expert, Dr. E. C. Schroeder, working quietly at the agricultural experiment station at Bethesda, Md., made numerous discoveries and demonstrations which have formed the basis for the now accepted decision of science that bovine tuberculosis does cause consumption in human beings, being transmitted in milk, butter and cheese, as well as in meat, and that the infection may be prevented by pasteurizing the dairy products.

Now it is learned that Secretary Wilson, appreciating the importance of Dr. Schroeder's great work, has quietly dispatched him to Rome, with credentials constituting him an official representative of the government, by appointment of the President. When the commission, appointed in 1908 to deal with the Koch supposition, makes its report to the congress, Dr. Schroeder will be there in person to give witness to his demonstrations, instead of allowing the British delegates to reap the glory of settling this issue that is of such vast importance in the prevention of tuberculosis.

The senior delegate from this country is Nathan Straus, the philanthropist who has been fighting for twenty-one years to prevent tuberculosis by pasteurization, and the medical profession is represented by Dr. E. G. Otis, of Massachusetts. Recently six delegates were added to the list commissioned by the President. These are the representatives of the National Association for the Study and Prevention of Tuberculosis, headed by Dr. H. B. Jacobs, of Baltimore and Dr. Livingston Farrand, of New York, the secretaries of that association.

AMERICA URGES WORLD TO PREVENT TUBERCULOSIS.

Rome, April 5.—Urgent pleas for the absolute prevention of consumption were made to-day before the seventh international congress against tuberculosis by Nathan Straus, the New York philanthropist, who by appointment of President Taft is senior delegate from the government of the United States to this congress in which experts from forty nations are planning to extend the warfare against the great white plague. Mr. Straus said:

The message with which I am charged by the government of the United States is:

“Prevent tuberculosis. Stop it at its sources.”

My government, as the result of twenty years' investigation, believes that the disease can be checked, controlled and finally practically eradicated. Smallpox, yellow fever and the bubonic plague have been stamped out in America, not by mere treatment of the victims, but by scientific preventive measures that went to the origin of the infections.

MILK A CONSIDERABLE FACTOR.

Pointing out that America had spent \$14,500,000 the past year in combating tuberculosis and was maintaining 1,526 associations and institutions whose work was chiefly to alleviate, not to prevent, the dreaded disease, Mr. Straus cited the investigations by the United States government that demonstrated that “the milk from tuberculous cows is a real and considerable factor in the persistent increase of tuberculosis among human beings.”

He said these demonstrations had been corroborated by the British Royal Commission on Tuberculosis, that Dr. Park, of New York, had estimated that ten per cent. of all children dying in infancy from tuberculosis were victims of milk infection. After showing the wide extent of bovine tuberculosis, Mr. Straus cited the Public Health Service, the American Medical Association and Rockefeller Institute of Medical Research as urging the necessity for pasteurizing milk so as to prevent its being a vehicle for the transmission of the plague. He added:

There is little that America can add to the knowledge of methods of preventing the infection of the well by tuberculous human beings, but there is much that America can say to the nations out of its experience and official inves-

tigations as to the importance of considering the other great cause of tuberculosis—the use of milk and other raw dairy products from tuberculous cattle. And this is the message that I bring from my government:

“Pasteurize and thereby prevent tuberculosis.”

THE ONLY GUARANTEE OF SAFETY.

Officially the American government and the American medical profession contents itself with recommending the pasteurization of milk not from tuberculin-tested cattle. Personally I go farther.

Several years ago the milk produced under the certification of the New York County Medical Society by one of the most famous dairy farms in the state showed an increase in bacteria, tuberculosis was found in the herd, and it developed that from the unknown date of the invasion of tuberculosis into the herd to its discovery, customers, who were paying twenty cents a quart for this milk to be safe from tuberculosis, were in reality using tuberculous milk without suspecting their danger. Pasteurization would have protected them.

It is from twenty-one years' practical experience that I speak when I commend all efforts to produce clean milk from healthy cows, but recognize that there is really no such thing as raw milk that can be depended upon to be clean and pure and free from disease day after day, even though it be produced with such elaborate precautions that it costs three times as much as the ordinary market milk and is out of reach of all except the wealthy.

PREVENTION THE WORD.

Describing the new work of the Tuberculosis Preventorium for Children near Lakewood, N. J., Mr. Straus added:

Both in this work of taking children from tuberculous surroundings and in pasteurizing the milk supplies so as to stop the infection of the babies with tuberculosis, we have in America methods of prevention that we are earnestly endeavoring to commend to our own people and to the other nations of the world, for we feel that in these measures we have the means by which tuberculosis can be overcome.

What pasteurization has done wherever tried it will do in a larger way when resorted to more generally, and the forty per cent. drop in tuber-

culosis in New York city, when only part of the milk supply was pasteurized, will be paralleled and outdone, and we will make headway against the great white plague instead of allowing it to destroy our civilization and our race.

Prevention is the word that I took to Berlin and that I now bring to Rome, and prevention means pasteurization. Upon this the health agencies of the United States government are agreed. This stand is indorsed by the National Association for the Study and Prevention of Tuberculosis and by the American Medical Association, and my message is confirmed by the dean of the American medical profession, Dr. Jacobi, in the words, "Use no raw milk."

ANALYST (MALE).

May 22, 1912.

The United States Civil Service Commission announces an examination on May 22, 1912, at the places mentioned in the list printed hereon, to secure eligibles from which to make certification to fill vacancies in the position of analyst as they may occur in the Bureau of Mines at Pittsburgh, Pa., at salaries ranging from \$800 to \$1,020 per annum, and vacancies requiring similar qualifications as they may occur, unless it is found to be in the interest of the service to fill the vacancies of reinstatement, transfer, or promotion.

The duties of this position will consist in making routine analyses of coal, calorimetric experiments, and analyses of ores.

Men only will be admitted to this examination.

The examination will consist of the subjects mentioned below, weighted as indicated:

<i>Subjects.</i>	<i>Weights.</i>
1. General chemistry	30
2. Analytical chemistry (inorganic)	30
3. Physics	15
4. Training, experience, and fitness	25
	—
Total	100

An educational training equivalent to two years' collegiate work in science, which must include courses in physics and chemistry, laboratory work in inorganic analytical chemistry, and at least one year of collegiate mathematics, is a prerequisite for consideration for this position.

Applicants having degrees from technical correspondence or night schools and having pursued the courses indicated above will be admitted to this examination provided that they can offer two years' experience in chemical work in an analytical or research laboratory of good repute.

Applicants who have had satisfactory training and experience of the kind indicated above will be given a rating of 70 per cent or over in that subject. Those whose training and experience is not sufficient to entitle them to a rating of at least 70 per cent will not be admitted to the examination.

All statements relating to training, experience, and fitness are subject to verification.

Applicants must have reached their eighteenth but not their fortieth birthday on the date of the examination.

Applicants will be admitted to this examination regardless of their place of residence, but under a recent act of Congress only those who are examined in the State or Territory in which they reside and show that they have been actually domiciled in such State or Territory for at least one year previous to the date of the examination, will be eligible for appointment to any vacancy which may occur in the apportioned service in Washington, D. C. Those who are examined in a State other than that in which they reside, or who have not been actually domiciled in the State in which they reside for one year previous to the examination, will be eligible for appointment only to vacancies which may occur in the field service; that is, to vacancies in positions with headquarters outside of Washington, D. C. As there is frequently occasion to transfer men from the Pittsburgh laboratory of the Bureau of Mines to the Washington office, applicants should endeavor to meet the requirements as to residence and domicile which have been mentioned, in order that they may also be eligible for transfer to the apportioned service in Washington, D. C.

This examination is open to all citizens of the United States who comply with the requirements.

Applicants should at once apply either to the United States Civil Service Commission, Washington, D. C., or to the secretary of the board of examiners at any place mentioned in the list printed hereon for Form 1312. No application will be accepted unless properly executed and

filed with the Commission at Washington. In applying for this examination the exact title as given at the head of this announcement should be used in the application.

As examination papers are shipped direct from the Commission to the places of examination, it is necessary that applications be received in ample time to arrange for the examination desired at the place indicated by the applicant. The Commission will therefore arrange to examine any applicant whose application is received in time to permit the shipment of the necessary papers.

Issued April 18, 1912.

BOOK REVIEWS.

PHYSIOLOGY.—A Manual for Students and Practitioners. By A. E. Guenther, Ph. D., Professor of Physiology in the University of Nebraska, and Theodore C. Guenther, M. D., Attending Physician, Norwegian Hospital, Brooklyn, N. Y. New (2nd) edition, thoroughly revised. 12mo, 269 pages, illustrated. Cloth, \$1.00 net. The Medical Epitome Series. Lea & Febiger, publishers, Philadelphia and New York, 1912.

Like others of this epitome series this little book makes no claim for originality but is offered as a means of quickly reviewing the essential features of the subject. This 2nd edition has been thoroughly revised and will be found eminently useful for the purpose for which it was intended.

THE TREATMENT OF SHORT SIGHT.—By Professor Dr. J. Hirschberg, translated by G. Lindsay Johnson, M. D., F. R. C. S., with twelve illustrations. New York. Rebman Company, 1123 Broadway.

This is a lecture delivered by Professor J. Hirschberg in Professor V. Leyden's clinic, published by request of his colleagues.

INFECTIONS OF THE HAND.—A Guide to the Surgical Treatment of Acute and Chronic Suppurative Processes in the Fingers, Hand and Forearm. By Allen B. Kanavel, M. D., Assistant Professor of Surgery, Northwestern University Medical School, Chicago. Octavo, 447 pages, with 133 illustrations. Cloth, \$3.75 net. Lea & Febiger, Philadelphia and New York, 1912.

At first thought one is constrained to wonder what can be found in the discussion of the infections of the hand to fill 450 pages of this book, but a perusal of the pages fails to show any chaff. It merely seems to emphasize the wonderful extension of our knowledge in all branches of medicine. The author has done

much original experimental and anatomical investigation which puts him in a position to speak as an authority on the subject and we have no hesitation in saying that this book contains the last word on the subject of infections of the hand.

NEW AND NON-OFFICIAL REMEDIES.—Price, Cloth, \$0.50; Paper, \$0.25; pp. 298. Chicago: American Medical Association, 1912.

This book contains descriptions and a statement of the actions and uses of all articles which have been examined and accepted by the Council on Pharmacy and Chemistry prior to Jan. 1, 1912, for inclusion in the list of New and Non-Official Remedies.

The book is unique. The work of the Council during its seven years of existence and the reports of the Propaganda Department of *The Journal A. M. A.*, have convinced the physician that in the prescribing of proprietary remedies he must be more careful in his selection of those which he directs for his patients. Nowhere else can the physician or the pharmacist turn for reliable, unbiased information concerning the new remedies. This book enables the physician to make such selection and the careful pharmacist to know the character of the remedies he dispenses. It should be in the hands of every one of them.

SURGICAL OPERATIONS.—A Handbook for students and practitioners by Prof. Friedrich Pets-Lendden, chief surgeon to the University Surgical Clinic and chief of the University Surgical Policlinic in the Royal Charity Hospital of Berlin. Only authorized English translation by Faxton E. Gardner, M. D., New York; six hundred and eight illustrations. New York: Rebman Company, 1123 Broadway.

The author has in the volume brought together the work which he has been giving students in practical course and theoretical lectures. The work therefore is intended primarily for students and general practitioners but contains much of usefulness to the surgical specialist.

The technique is clearly described and the description is illuminated with an abundance of illustrations. The description of post operations is especially good. In short the entire work is written with characteristic German clearness.

THE INTERNATIONAL MEDICAL ANNUAL.—A year book of Treatment, and Practitioners' Index. 1912. Thirtieth year. E. B. Treat & Company, 241-243 West 23rd Street, New York.

This work is too well known to need any introduction to our readers; covering as it does all that is new in scientific and practical medicine during the year and presenting it in a form to be readily found and utilized, it is invaluable to the medical man in any branch of the profession. The volume contains 650 closely written pages, embellished with plates which make the text more lucid. The contents are arranged in encyclopedia manner and are thoroughly indexed and cross-indexed. One might as well try to keep up with the times without reading the medical journals as to get along without the Medical Annual.

CASE HISTORIES IN MEDICINE.—Illustrating the Diagnosis, Prognosis and Treatment of Disease, by Richard C. Cabot, M. D., Assistant Professor in Clinical Medicine, Harvard Medical School. Second edition revised and enlarged. W. W. Leonard, publisher, Boston.

The phase of Cabot's book is absolutely original. The warm reception of the first edition has testified to the success of such a method. The work gives one an intimate insight into the methods of reasoning used by the premier of diagnosticians. An extremely useful book to the teacher and diagnostician.

TEXTBOOK OF OPHTHALMOLOGY. in the form of clinical lectures by Dr. Paul Roemer, Professor of Ophthalmology at Grufswold. Translated by Dr. Matthias Lanckton Fester, Member of the American Ophthalmological Society; Member of the American Academy of Ophthalmology and Otolaryngology, with 186 illustrations in the text and 13 colored plates. Rebman Company, 1123 Broadway, New York.

This firm is to be commended for making available to the American physician, the work of the best German specialists. This is a thorough and clear discussion of the subject put into an attractive form and well illustrated.

THORNTON'S MEDICAL POCKET FORMULARY.—New (10th) edition. Containing over 2,000 prescriptions, with indications for their use. In one leather-bound volume. Price, \$1.50 net. Lea & Febinger, publishers, Philadelphia and New York, 1912.

This little volume is too widely known to need description. The fact that this is the 10th edition is ample guarantee of its popularity.

BLAIR'S POCKET THERAPEUTICS.—A Practitioner's Handbook of Medical Treatment. By Thomas S. Blair, M. D., Neurologist to Harrisburg, Pa., Hospital; Author of "A System of Public Hygiene," "Blair's Practitioner's Handbook of Materia Medica," Mem-

ber of the Harrisburg Academy of Medicine, American Medical Association, etc.; 373 pages, special Bible paper; bound in limp leather; price, \$2.00. Published by The Medical Council Co., Forty-second and Chestnut streets, Philadelphia, Pa.

This book goes considerably farther than the ordinary pocket formulary. An intelligent, thorough condensed discussion of the treatment of the various diseases is given and the remedies and methods of administration suggested. The diseases are divided into related groups each group occupying a chapter. A very complete index renders the contents readily accessible. Pocket works of this kind which form a ready aid to the memory of the doctor, which must be surely tried, every possible help will always be popular.

THE TAYLOR POCKET CASE RECORD.—By J. J. Taylor, M. D., 252 pages, tough bond paper; red limp leather, \$1.00. Published by The Medical Council Co., Forty-second and Chestnut streets, Philadelphia, Pa.

The object of this book is to encourage more accurate observation and study of cases by supplying a convenient form for a condensed record of each important case, in pocket size, so that the practitioner can have it always with him, and so arranged that the necessary data can be written down in the briefest possible time—preferably while the examination is actually being made.

Thoroughness of examination is encouraged by means of a Syllabus, detailing all the points that should be considered in each case.

The blank for the first thorough examination, diagnosis and treatment is followed by spaces for sixteen subsequent visits.

The book provides for 120 cases.

OPERATIVE OBSTETRICS.—Operative Obstetrics, including the Surgery of the Newborn. By Edward P. Davis, M. D., Professor of Obstetrics, Jefferson Medical College, Philadelphia. Octavo volume of 483 pages, with 264 illustrations. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$5.50 net.

The surgery of the pregnant woman has developed greatly within the last decade and the advance in the work of the author justifies his work. The book is divided into four parts dealing with the surgery of pregnancy, The surgery of labor, The surgery of the puerperal period, and the surgery of the newborn. Each one of these subjects is thoroughly treated. The operative technique is illuminated with a large number of illustrations, many pathological repro-

ductions. A bibliography is given after the treatment of every subject.

NERVOUS AND MENTAL DISEASES.—The new (7th) edition. By Archibald Church, M. D., Professor of Nervous and Mental Diseases and Medical Jurisprudence in Northwestern University Medical School, Chicago; and Frederick Peterson, M. D., Professor of Psychiatry, Columbia University. Seventh edition, revised. Octavo volume of 932 pages, with 338 illustrations. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$5.00 net; half morocco, \$6.50 net.

The seventh edition of this popular work has been thoroughly revised without seriously altering the arrangement with which the many users of the book have become familiar. The chapters on mental diseases have been entirely re-written, embodying all the more recent changes in classification. We are sure that this edition will continue to be favored with the cordial reception that its predecessors have enjoyed.

A MANUAL OF PATHOLOGY.—Second Revised Edition. By Guthrie McConnell, M. D., Professor of Pathology and Bacteriology, Temple University, Medical Dept., Philadelphia. 12mo of 531 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1911. Flexible leather, \$2.50 net.

The popular little manual has been thoroughly revised without departing from the original purpose of the author to give in a concrete form the essentials of pathology. It will always be a favorite with the student who needs to get the salient point of the subject rid of all the superfluous discussion of mooted questions.

PRACTICAL TREATMENT, Volume III.—A Handbook of Practical Treatment. In three volumes. By 82 eminent specialists. Edited by John H. Musser, M. D., Professor of Clinical Medicine, University of Pennsylvania; and A. O. J. Kelly, M. D., late Assistant Professor of Medicine, University of Pennsylvania. Octavo of 1095 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Per volume: Cloth, \$6.00 net; half morocco, \$7.50 net.

This work, the character of which is guaranteed by its distinguished editors is a series of monographs written by men eminent in their respective specialties. Among the list of contributors we find a large number of the best known physicians of America and its pages contain a perfect fund of the latest ideas on treatment. The volume deals with constitutional diseases of the digestive system, the urinary system, the nervous system, the muscles and the mind.

MICROSCOPY, BACTERIOLOGY AND HUMAN PARASITOLOGY.—By P. E. Archinard, A. M., M. D., Bacteriologist, Louisiana State Board of Health and City Board of Health, New Orleans. New (2nd) edition, thoroughly revised. 12mo, 267 pages, with 100 engravings and 6 plates. Cloth, \$1.00 net. The Medical Epitome Series. Lea & Febiger, publishers, Philadelphia and New York, 1912.

This concise epitome of microscopy and bacteriology has been broadened to include some of the more important protozoa increasing its value to the student and practitioner. A list of questions following each chapter calls to the attention of the student the important points of the discussion. It is a very valuable little volume.

WASSERMANN'S REACTION IN CHILDREN.

Francioni and Menabuoni (*The British Journal of Children's Diseases*) after practicing this reaction in many cases, found it positive in the first few days after birth before objective symptoms were present. It was invariably positive in hereditary lues and continued so for many years, being little affected by treatment. It had, however, a limited value as proof of indirect hereditary influence on the offspring. They cautioned against regarding a positive result as an absolute indication for active treatment, since the reaction remained positive after repeated and energetic treatment.

Spolverini asked if the authors had practiced the cuti-reaction to tubercle when they had found Wassermann's reaction positive in children under one year without symptoms of syphilis. It had been asserted that in syphilitic adults the cuti-reaction was more marked than in those suffering from tuberculosis.

Cacioppo had found Wassermann's reaction positive in children with clinical symptoms, but not constant during the period between birth and the appearance of these symptoms—a period of the greatest importance as regards early diagnosis and prophylaxis.

Francioni, in reply, said he had made no special observations as to the relation between Wassermann's test and cuti-reaction.

AN INSANE CLASSIC.

A penniless lawyer of Chicago, hopelessly insane, who was an inmate of the hospital at Dunning, died a few years since, leaving nothing but the following prose poem, in the form of a

will. It will outlive many a learned treatise, destitute of imagination, fancy or sentiment; and even many a bit of verse illuminated by the glow of true poetic feeling. Incidentally it illustrates the kinship which often subsists between talent and mental observation, and may serve and correct certain current misconceptions with reference to the nature of insanity.

I, Charles Lounsberry, being of sound and disposing mind and memory, do hereby make and publish this, my last will and testament, in order, as justly as may be, to distribute my interest in the world among succeeding men.

That part of my interest, which is known in law and recognized in the sheep bound volumes as my property, being inconsiderable and of none account, I make no disposition of in this my will. My right to live, being but a life estate, is not at my disposal, but these things excepted, all else in the world I now proceed to devise and bequeath.

Item: I give to good fathers and mothers in trust for their children, all good little words of praise and encouragement, and all quaint pet names and endearments, and I charge said parents to use them justly, but generously, as the needs of their children shall require.

Item: I leave to children exclusively, but only for the term of their childhood, all and every, the flowers of the fields, and the blossoms of the woods, with the right to play among them freely according to the customs of children, warning them at the same time against thistles and thorns. And I devise to children the banks of the brooks and the golden sands beneath the waters thereof, and the odors of the willows that dip therein and the white clouds that float high over the giant trees. And I leave to children the long, long days to be merry in, in a thousand ways, and the night, and the moon, and the train of the milky way to wonder at, but subject, nevertheless, to the rights hereinafter given to lovers.

Item: I devise to boys jointly, all the useful, idle fields and commons, where ball may be played; all pleasant waters where one may swim; all snowclad hills where one may coast; and all streams and ponds where one may fish, or where, when grim winter comes, one may skate, to have and to hold these same for the period of their boyhood. And all meadows, with the clover blossoms and butterflies thereof; the woods with their appurtenances, the squirrels and birds and

echoes and strange noises, and all distant places which may be visited, together with the adventures there found. And I give to said boys each his own place at the fireside at night, with all the pictures that may be seen in the burning wood, to enjoy without let or hindrance, and without any incumbrance of care.

Item: To lovers, I devise their imaginary world with whatever they may need, as the stars of the sky, the red roses by the wall, the bloom of the hawthorne, the sweet strains of music, and aught else they may desire to figure to each other the lastingness and beauty of their love.

Item: To young men, jointly, I devise and bequeath all boisterous, inspiring sports of rivalry, and I give to them the disdain of weakness and undaunted confidence in their own strength. Though they are rude, I leave to them the power to make lasting friendships, and of possessing companions, and to them exclusively, I give all merry songs and brave choruses to sing with lusty voices.

Item: And to those who are no longer children, or youths, or lovers, I leave memory, and I bequeath to them the volumes of the poems of Burns and Shakespeare and of other poets, if there be others, to the end that they may live the old days over again, freely and fully without title or diminution.

Item: To our loved ones with snowy crowns, I bequeath the happiness of old age, the love and gratitude of their children until they fall asleep.
—*Ill. Institution Quarterly.*

IODINE STERILIZATION.

Leedham-Green (*British Medical Journal*) says:

I was now wishful to learn how the iodine preparations compared with the mercury ones. For the purpose of comparison I selected, as the result of early experiments, an alcoholic solution of mercury perchloride (1 in 1,000 of 70 per cent. spirit) as representing the most powerful mercury preparation suitable for clinical use, and tested it side by side with the 70 per cent. tincture of iodine, the officinal tincture of iodine and 1 in 1,000 aqueous solution of mercury perchloride. The result was that the 70 per cent. sublimate alcohol proved superior in bactericidal power to the 70 per cent. tincture of iodine, and still more to the officinal tincture. The aqueous

solution of sublimate was hopelessly outclassed, never sterilizing the test object within the half hour. Taking the average of a large number of tests with different non-spore-bearing septic micro-organisms:

Sublimate spirit (70 per cent. alcohol) sterilized in two and one-half minutes.

Sublimate spirit (70 per cent alcohol) sterilized in seven minutes.

Tincture of iodine (officinal) sterilized in ten and one-half minutes.

Aqueous solution of sublimate sterilized never under thirty minutes.

On several occasions both the iodine and the sublimate alcohol were compared with plain alcohol of a like strength.

The result of these tests, briefly stated, was as follows:

The simple spirit proved to be decidedly inferior to the iodine and sublimate alcohol. These two clearly showed themselves to be powerful skin disinfectants. A true sterility of the skin was, of course, never obtained, but both methods always greatly reduced the infectivity of the area, even when it had been previously grossly contaminated. When both skin and silk thread were dry, the result was distinctly good, the majority of the tubes remaining sterile. But when the thread was wet, and still more when the skin was tested after being moistened with sterile saline or albuminous fluids, the results were disappointing. In an unpleasant proportion of cases the skin proved to be still surgically infective, and this was so when it had not been previously artificially infected. Neither of the two methods can be said to guarantee sterility, and the skin, which had proved to be practically sterile directly after the process of disinfection, gradually became more and more infective as, under the influence of fluid, the hardened epithelium became loosened.

Up to the present (for the experiments are still going on) sublimate alcohol has given the better results. There was a slight superiority even when it was merely painted on the skin like the iodine; when it was freely rubbed on, as in the usual method of alcohol disinfection, the superiority was more marked and at times pronounced.

TREATMENT OF PLEURISY.

The indication for puncturing a pleural exudate may be vital or it may be determined by the amount or character of the fluid or the chron-

icity of the case. The so-called primary pleurisies with effusion can be evacuated in almost any stage without doing harm, while greater care is necessary in the case of exudates complicated with pulmonary tuberculosis, when the small operation should be postponed as long as possible. The early puncture of a serous exudate may shorten the disease and prevent the formation of pleural thickenings. It is impossible to lay down any definite rules as to the time for puncture, as in some cases the pleura is already considerably thickened after 3-4 weeks. One disadvantage of early puncture, according to H. Arnspurger, is the formation of adhesions between the inflamed pleural surfaces, but this can now be prevented by the insufflation of air. Marked thickenings are often seen in cases treated by means of autoserotherapy. In this method 1 to 3 cc. of the fluid are drawn off and injected under the skin of the patient, if necessary every second or third day. The value of this method has not yet been definitely decided. It is a well-known fact that many exudates will disappear rapidly without treatment and that others, again, will become absorbed if a small amount of fluid is withdrawn. It is therefore by no means settled that the reinjection of small amounts of the exudate under the skin will add something to the body which will assist the cure. This treatment is, however, perfectly justified, since it is very simple and certainly harmless, and the thickening of the pleura can usually be prevented by injecting air. The simplest method of introducing air is to remove the fluid by means of aspiration, then to disconnect the needle and to let the patient take deep inspirations. A pneumothorax will result, but the air will slowly be absorbed, while the actual pleuritis subsides. It is better still to use warmed and filtered nitrogen and to employ a special apparatus, so that the volume of gas can be controlled (300 to 400 cc.). A novel method consists in the introduction of a cystoscope into the pleural cavity, which allows of an inspection of the pleura. A weighted ureteral catheter is then passed through the tube to the diaphragmatic surface. In this way remnants of fluid can easily be aspirated. The entire process of aspiration and insufflation of gas can be easily controlled with the fluoroscope. Autopsies witnessed by the author prove without doubt that the insufflation of gas is a sure way of preventing the formation of adhesions, thickenings and other

disagreeable signs of chronic pleuritis. In empyema, resection of the ribs is to be preferred, though good results have been seen from aspiration in tuberculous empyema with pulmonary tuberculosis. Hemorrhagic exudates should not be aspirated too early, but after expiration the insufflation of air is also indicated. It is probable that the introduction of air will also do good in the severe types of dry pleurisy.—*Merck's Archives*.

SALICYLATES IN RHEUMATIC AFFECTIONS.

A. F. Voelker, in a paper on the limitations to the successful employment of salicylates in rheumatic affections, said that it had become a habit to treat all rheumatic affections with the salicylates. Certain of them responded admirably, but there were also quite a number of undoubtedly rheumatic manifestations in which the salicylates proved useless. The most striking benefit of the salicylates was shown in their influence on joint pains, and persistence of pain after adequate administration should always suggest the possibility of the arthritis being gonococcal or septic in nature, or to the pain being due to an anterior poliomyelitis. The pain of acute rheumatic arthritis ought to yield within twenty-four hours to the administration of 10 grains of sodium salicylate with 20 grains of sodium bicarbonate given every two hours for three doses and then every four hours. Pains about fibrous structures after an acute arthritis were often intractable to salicylates, but yielded to local applications of oil of wintergreen or to potassium iodide internally. The pain of pleurisy and of pericarditis was uninfluenced. Joint effusions when aggravated by movements proved intractable, even when they contained the *Diplococcus rheumaticus*. The pyrexia of acute polyarticular rheumatism was generally controlled within three days, but in the rheumatic state there was often a pyrexia ranging through two degrees, which continued even for weeks, and was unaccompanied by any obvious manifestation of rheumatism. Such pyrexia was often influenced by the salicylates, though it might yield to salol. The employment of the salicylates in rheumatic hyper-pyrexia was waste of valuable time. The cutaneous manifestations of rheumatism were uninfluenced. Neither the various

forms of erythema, purpura, nor erythema nodosum appeared to be influenced, and these manifestations had occurred while patients were actually taking the drug. The subcutaneous nodules described by Barlow and Warner were undoubtedly rheumatic in nature, but they were quite uninfluenced by the administration of the salicylates. He had failed to find any successful treatment for them. The similarity of their structure to that of the inflamed valves of the heart in rheumatism, as pointed out by Cheadle, was a powerful argument against the utility of the employment of salicylates in endocarditis or pericarditis. The danger of upsetting the stomach with the irritant salicylates must be borne in mind in the treatment of all heart affections, as also must the risk of acidosis.—*Brit. Med. Jour.*, May 20, 1911.

ALCOHOL FOR HAND DISINFECTION.

Tchumburg in the *Deutsche Medizinische Wochenschrift*, says that washing the hands with strong alcohol is a most effective means of removing all infection and rendering any bacteria innocuous. He says that 200 c. cm. of alcohol applied with a pledget of cotton-wool are sufficient to disinfect the hands to the extent of 99 per cent. or more of all bacteria present. Ordinary methylated spirit is quite effective. From experiments in the medical department of the Prussian Ministry of War it appears that washing with soap and water combined with even prolonged scrubbing with a brush does not remove the microbes, the soap softening the skin and making the bacteria more adherent. Alcohol, on the other hand, by hardening the skin, causes the bacteria to become rapidly detached. To secure proper disinfection with alcohol the preliminary use of soap and water must be dispensed with, the reasons given being that the residual moisture, even after drying, dilutes the alcohol, and further that the softening of the skin by water causes it to contract too strongly when the alcohol is applied, and by rendering it rough and scaly encourages the transference of bacteria from the surgeon's hands to the wound. Inasmuch, however, as the wearing of gloves for operations has been now so generally adopted, disinfection of the hands has not the same importance that it once possessed for the success of aseptic surgery.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

SANITATION AT PANAMA.

W. C. GORGAS, Ancon, C. Z. (*Journal A. M. A.*, March 30), describes the conditions at Panama and gives the history of former conditions when the Isthmus was considered the most unhealthy spot in the world. During the construction of the Panama railroad the mortality was so great that the construction work had to be stopped several times. At one time the construction company imported 1,000 negroes from Africa, who all died within six months, and the same fate occurred to 1,000 Chinamen. One of the stations on the road was named Matachin and the tradition is that this name is derived from the Spanish words *mata*, "killed," and *Chin*, "Chinaman," because this was the place where the 1,000 Chinamen were housed and where most of them died. Mortality rate was similar during the French work on the Isthmus, and Gorgas estimates that they lost 40,000 laborers by death during that period. He admits that we could do no better now without the better information we possess as to the cause of tropical disease. The mortality at the present time is 7.50. Malaria, from a maximum of 821 per 1,000, has been reduced to 187 per 1,000 morbidity; but, best of all, yellow fever has been completely banished. The general death-rate has been reduced during six years from a maximum of 49.94 per 1,000 to a rate for the year of 1910 of 2.18 per 1,000, which compares favorably with many parts of the United States. Gorgas notices the work of two sensational syndicate writers who have attacked the Isthmus sanitation on the ground of its expense, claiming that the sanitation has cost some two million dollars per year and if the methods were applied in this country it would cost us twelve hundred million per annum. The expenses of sanitation on the Isthmus, he says, have amounted to about \$365,000 per year, and he compares it with the health department of Chicago, whose appropriation this year is \$600,000, though their work does not cover either foreign quarantine or mosquito work, which constitute a large bulk of the expenditures on the Isthmus. For the purposes for which the Chicago health department spends \$600,000, \$50,000 is spent on the Isthmus every year. Applying the figures to the whole United States, Gorgas makes out that the sanitary authorities on the Isthmus spend one-tenth more per capita than would be spent in the whole United States for the same purpose. This, he thinks, is not extravagant when the difficulties to be met have to be considered. He refers to the address of a high railroad official in the United States recently quoted to him. It stated that the sanitary expenditures on the Isthmus would have been 5 per cent. of the total cost when the whole work was finished. How much more emphatic might he have been if he had known that instead of costing 5 per cent. of the total appropriation the work had actually cost less than 1 per cent. of the total appropriation for all purposes. What Gorgas particularly wishes to emphasize, however, is that while the great work done of late years in tropical sanitation has enabled the sanitary department on the Isthmus to take a vital part in the building of the canal, it is not the greatest good that is hoped and expected will flow from this conspicuous object lesson. He hopes that our success at Panama will induce other tropical countries to adopt the same

measures and thereby redeem the tropics and make them a suitable habitation for the white man. Such statements as made by the writers referred to above and given wide circulation by syndicate letters for leading newspapers should not be allowed to pass uncontradicted.

PSYCHOLOGY IN MEDICINE.

After mentioning the strides made of late years in medical education, S. I. FRANZ, Washington, D. C. (*Journal A. M. A.*, March 30), says that psychology has, within the last few years, attained a place in the scheme of medical education, though mental states are discussed often under different names. He points out that psychology is a science independent of physiology and, no matter what branch of medical practice is considered, mental states must be taken into account by the practitioner. Many of the so-called nervous diseases are really mental, and a more intimate acquaintance with the facts of psychology and psychotherapeutics is needed. While this is specially true in mental disorders properly so-called, it is also of value in the treatment of other diseases, but many practitioners still hold inadequate ideas on this point. It is also not sufficiently appreciated as yet in relation to medical research. He thinks that the time given to pathology and pathologic anatomy in institutions for the insane and defectives is still rather out of proportion to the psychologic investigations which should be made. The exact kind of psychologic work to be done is questioned by some and he thinks it appears that the ideal proposed is that it should be a hybrid between the present laboratory psychology and medical practice, but the type that is needed is one that can be used practically by persons who may not be thoroughly trained investigators. Much of the success of the followers of Christian Science, mind cures and other fads has been due to their recognition of the psychologic factors in mental life reached by unscientific individuals without special training. Those who have charge of medical education must see to it in the future that the qualifications of their graduates have at least an elementary knowledge of mental processes.

PSYCHOLOGY IN PSYCHIATRY.

ADOLPH MEYER, Baltimore (*Journal A. M. A.*, March 30), considers the relations of psychiatry to psychology, holding that as psychiatry has to deal with the mental facts presented by the patient, it is desirable or even essential that we should use such methods and standards as will be recognized in the scientific observation of mental facts generally. The chief facts to-day, he says, are that the division between psychoneuroses and insanities has become less marked among the students of mental disorders, and psychopathology has become the scientific definition of psychiatry generally, thus recognizing the importance of psychology, though a number of workers are inclined to underestimate the laboratory methods. Meyer wishes to bring the two types of study on to a common cooperative ground. To physicians psychopathology and psychology call for a use of the biologic settings and a definite setting up of the mental dynamics, and also of the non-mental dynamic factors. To his mind, he says, psychopathology and psychology have to study mental events and their settings and their effects in terms of activities or

behavior. There are many lines of psychologic research which the medical student will learn to take up with interest. As long, however, as he makes it a rule as far as possible to record events together with their underlying conditions and their results, sizing up the time and influences needed for a readjustment of a state of balance, the worker is on the safe side and sure to record valuable material, no matter how complex the facts may be when subjected to detailed analysis in terms of structural psychology. His view is that psychology will become a much more real issue when it aims to guide students in the correct and critical recording of the plain facts of conduct and behavior and the mechanisms at work; when it puts the emphasis on what shows objectively as well as subjectively, namely, the conditions, types and results of mental activity; "when it trains the student to see, in the special psychologic methods, methods of accuracy and greater comparability; but, above all, when the data can be formulated in terms of adaptations of a living functioning organism with the system of mental integrations—the conditions and structure of which are becoming increasingly better understood. The student should learn that psychology is the study of a certain type of reactions, of the conditions under which they occur, of what they do and how they can be modified and kept from miscarriage. How to use the reactions either as mere signs of broader disorders or as dynamic factors must be learned in the study of cases and by experimentation." He objects to the teaching of abstract systems of psychology to the medical student illustrated by parade cases of the literature and leaving them with dyspepsia when confronted with our plain hospital cases. It is equally needless to describe psychopathology as "applied psychology." It can be a legitimate and fruitful field for psychology at its best. "On this ground it would seem desirable to have a member of the staff in psychopathology add to the course on physiology an outline of psychology of normal life, and to the course in pathology an outline of psychopathologic fundamental experiments and reaction-types, so that when psychiatry is introduced the student has a first-hand experience with the fundamental facts and methods."

ACUTE LYMPHATIC LEUKEMIA.

Three patients with acute lymphatic leukemia, all dying within thirty days from the time the disease was diagnosed, are reported by W. H. BODENSTAB, Bismarck, N. Dak. (*Journal A. M. A.*, March 30). They were all young patients, aged respectively 10, 16 and 11 years. The symptoms and blood-findings were in all three in a general way similar, but there were individual differences. In one case the enormously enlarged spleen and liver suggested a myelogenous leukemia, but the blood examination showed the predominance of large mononuclears without granulation.

PSYCHOPATHOLOGY.

E. E. SOUTHARD, Cambridge, Mass. (*Journal A. M. A.*, March 30), in discussing the question, how shall research psychology and research medicine come together, on what ground and to what ends, says that he wishes to insist strongly on the unique value of the pathologic method, not merely for the diagnostic and therapeutic purposes of medicine, but for biology

as a whole and for the most vital of biologic sciences—psychology. He also wishes to point out how pernicious in research may be the dogmatic insistence on the doctrine of psychophysical parallelism in medical or premedical courses in psychology—pernicious, he says, because it prevents the free interchange of structural and functional concepts and the intercourse of workers in the several sciences. He wishes to show that psychology and physiology have more in common than either has with structural sciences like anatomy and histology and that the main common element of mental and cerebral processes is the time element as against the space element of the structural sciences. Hence he holds that the mind-twist and brain-spot hypotheses for the explanation of certain forms of mental diseases are consistent with each other, each dealing with the same facts from a different angle, and, above all, he says: "Let us not divide up the tasks of research as we divide up the tasks of teaching, since research looking to the future defies the compartment of the past." He quotes from W. James as to the better understanding we have of a thing's significance by considering its exaggerations and perversions and its other relations and equivalents, and the advantage that the study of insane conditions, as isolating special factors of the mental life, for the study of the psychologists. The use of abnormal material often gives a short cut to the explanation of normal processes. He considers the school tendencies born of the doctrine of psychophysical parallelism as especially dangerous. Function and structure are closely related to each other and should be studied together, not as by an absolute interactionist, because we do not know thoroughly the factors that interact. We should let the facts, however, lead us wherever they tend and recognize the common aspects of brain changes and mind changes so far as they exist.

THE NEW PSYCHOLOGY AND THERAPEUTICS.

Normal psychology as taught in the curriculum has not, in the opinion of MORTON PRINCE, Boston (*Journal A. M. A.*, March 30), any particularly close relation with the problems of medicine, particularly psychotherapy. He does not say it is useless, but for the most part it does not clear up the medical problems included in pathologic processes and practical therapeutics. In order to make psychology applicable to medical problems, it should explain the facts, give the why as well as the how and what. The processes which are involved in pathologic disturbances, Prince says, are just those which have been neglected in normal psychology. The psychologic teaching has left to the unprofessional psychologist, the physician the task of searching out the mechanisms concerned in the abnormal manifestations with which the physician has to deal. He gives the idea of what sort of psychology should be taught to meet the requirements of medicine, and particularly of the therapeutics, as follows: "1. A study of the subconscious (whether regarded as psychical or physiologic) in all its relations. This embraces the content of the subconscious as the storehouse of conserved experiences, the influence and mechanism of the subconscious in determining conscious and physiologic process; its incubations; its automatic manifestation—motor and sensory; its syntheses, dissociations, etc. 2. The phenomena of hypnosis and allied conditions. 3. Suggestion and its phenomena. 4. Memory as a process (as distinguished from its content and

phases) and the part played by this process in conscious and subconscious activities. 5. Amnesia and its mechanism. 6. Fixed ideas, conscious and subconscious. 7. The dissociations and syntheses of "personality" and their mechanisms. 8. The emotions and feelings as forces which determine conscious and subconscious processes, dissociations, syntheses and activity, and which control the visceral functions of the body. 9. The emotional instincts as impulsive forces which determine mental activity and conduct. 10. The sentiments as complexes of ideas and emotions, and the part played by them in determining so-called personality and reactions to the environment. 11. Phenomena of repression, resistance, conflicts, inhibitions, etc. 12. The mechanisms of thought. 13. Complex formation. 14. The influence of complexes as conscious and subconscious settings or contexts in determining judgments, attitudes of mind, point of view, the meaning of perceptions, etc. 15. Associative processes and reactions, including word and galvanic reactions. 16. Habit processes. 17. Automatisms. 18. The mechanism of dreams. 19. The influence of the mind on the body. 20. Fatigue." This, he says, is a rough and incomplete summary of the psychologic knowledge which, in his opinion, should be included in the medical course, but it will do for a beginning.

PSYCHOLOGY FOR MEDICAL STUDENTS.

J. B. WATSON, Baltimore (*Journal A. M. A.*, March 30), says that psychology is ceasing to be a purely academic science, but a good deal of the recent research work is not of special practical value for the medical man. Still, psychology has not been given the credit which is due it, and the methods used by Freud and Jung have certainly been borrowed from psychology. The psychoanalyst of to-day is too apt to assert his independence of psychology and is using methods in a rather crude and unsatisfactory way. He believes that normal psychology can offer to medicine tools which its students can fashion to suit their special needs and a satisfactory common terminology. He points out certain difficulties in the way, the disparity in the psychologic training of the medical men and the way in which anatomy, and especially neurology, and physiology are taught in the schools. There must be some change in the ideals which will make the student feel his need of psychologic training. He would have a course with three periods each week, two laboratory periods of two hours each and one lecture, the course to continue for one full year and represent the minimum devoted to psychology in the medical schools. He specifies the different courses in sensation and mental tests to be followed by the study of the normal processes of association, memory and retention. The course should also contain a few lectures and several experiments on normal reaction time, and with this foundation he thinks we may safely turn the medical student interested in psychopathology and psychoanalysis over to the psychiatric clinic. He believes that a manual dealing especially with this line of study for the medical student will be forthcoming, though none now exists.

SOLUBLE DIGITONIN.

R. A. HATCHER, New York (*Journal A. M. A.*, March 30), discusses the arguments and evidence of a recent paper by B. Moore (*Brit. Med. Jour.*, Jan. 13, 1912, p. 60), on the soluble digitonin which is the proprie-

tary preparation known as "digalen." His criticism is detailed and rather lengthy and his conclusions are directly opposed to those of Moore. It is not impossible, he says, that digalen may have a place in therapeutics, but in the present state of our knowledge its usefulness will be very limited. Moore's statements would tend to give the general practitioner an altogether too high opinion of digalen and a correspondingly poor opinion of digitalis and its preparations, and nothing but disappointment can result from its use under such misapprehension. Hatcher's own conclusions from his study of the substance and the literature concerning it are quite different from those of Moore. It is safe to anticipate that the proprietors of digalen will use Moore's publication and it would not be at all surprising if the article were extensively circulated in the form of reprints or liberal abstracts in medical journals. It is to give what he considers the more correct view that his criticism is published.

TRACHOMA.

L. W. CRIGLER, New York (*Journal A. M. A.*, March 30), describes trachoma as a disease of the conjunctiva in which there is a characteristic connective-tissue hyperplasia and a proliferation of lymphoid cells. The follicles formed by this proliferation tend to degenerate and become encapsulated by the new connective tissue. They become distended with fluid, push their way to the surface of the conjunctiva, degenerate and break down and the conjunctiva is replaced by scar tissue. As a result of the chronic inflammatory process other changes take place leading to a general atrophy of the lid. There is no question as to its contagiousness, but its etiology is still unknown. He speaks of the work that has been done on the so-called trachoma corpuscles or trachoma bodies, in regard to which the consensus of opinion is that they have some pathologic significance in relation to this disease, though it seems they have been found in other conditions. He especially emphasizes the fact that the disease is a chronic one, the acute malignant cases being the exception, and says it is greatly to be deplored that there is no diagnostic character to distinguish it to the general practitioner from chronic follicular conjunctivitis. We have to wait until the second or hypertrophic stage before we can make a sure diagnosis and that is often only after months. Follicular conjunctivitis tends to spontaneous recovery, leaving a normal conjunctiva. Trachoma never does. The medical treatment has not advanced during the past decade, but it cannot be said that the remedies are without effect. The treatment with nitrate of silver and copper sulphate is painful and the patient discontinues them as soon as a little relief is obtained. Relapses then occur and the disease progresses. While a good many cases of true trachoma have been arrested, Crigler thinks a too large number are so credited and that all cases that respond to expression should never be called trachoma though they present the picture of this disease for a time. He speaks of the importance of the surgical treatment, which he considers the most successful means of combatting the condition. He describes the technic of combined excision and the cases in which the removal of the tarsal cartilage of the upper lid together with the overlying conjunctiva and retrotarsal fold and tarsal resection alone are indicated. The former combined method has in his experience been most satisfactory.

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THERAPEUTIC NOTES.

A NEW AND PROMISING AGENT FOR THE TREATMENT OF RHEUMATISM.—An announcement that is certain to cause widespread interest among the profession is being made in a large number of American medical journals in behalf of Rheumatism Phylacogen. The new product is a bacterial derivative originated by Dr. A. F. Schafer, of California. The term "Phylacogen" (derived from two Greek words—the equivalent of "a guard" and "to produce") means "phylaxin producer," phylaxin being a name that is applied to a defensive proteid found in animals that have acquired an artificial immunity to a given infectious disease.

Rheumatism Phylacogen (Schafer) is a sterile aqueous solution prepared from a large variety of pathogenic bacteria, such as the several staphylococci, *Streptococcus pyogenes*, *Bacillus pyocyaneus*, *Diplococcus pneumoniae*, *Bacillus typhosus*, *Bacillus coli communis*, *Streptococcus rheumaticus*, *Streptococcus erysipelatis*, etc. The basic Phylacogen is a "polyvalent" preparation, since the organisms are obtained from cultures made at frequent intervals and from a variety of sources. To this basic material is added an equal amount of the filtrate obtained by similarly growing and treating the *Streptococcus rheumaticus* of Poynton and Paine. The product is indicated in all cases of rheumatism, acute and chronic, not due to gonorrhoeal infection. It is marketed in sealed glass vials of 10 cc. capacity and may be administered subcutaneously or intravenously, the former method being preferred except in cases in which quick results are demanded.

Rheumatism Phylacogen, which is the first of a series of phylacogens originated by Dr. Schafer and about to be offered to the medical profession, has been thoroughly tested clinically in many of the leading hospitals, as well as by competent specialists and other scientific men in various parts of the country, and is said to have shown brilliant results in a large percentage of cases. With the co-operation of Dr. Schafer, and in accordance with his methods, it is prepared by Parke, Davis & Co., in whom are vested the sole rights of manufacture and sale. Physicians who are interested in this new treatment for rheumatism, and every general practitioner ought to be, will do well to get descriptive literature on the subject. It may be obtained by addressing the manufacturers at their principal laboratories in Detroit, Michigan. Ask for the "Rheumatism Phylacogen pamphlet" and mention this journal.

CONVALESCENCE FROM THE EXANTHEMATA.—The first two or three months of the year are usually characterized, in the experience of the family physician, by the occurrence in his practice, of a crop of cases of the contagious diseases of children, especially scarlet fever, measles, German measles, etc. This is accounted for by the readiness with which contagion is spread in the schools, when ventilation of the school room is the least perfect and the closer housing of school children during school hours favors the distribution of communicable diseases. As the diseases in question are self-limited in nature, expectant and symptomatic treatment, together with precautions as to isolation, etc., is about all the physician is called upon to direct. It is well known,

however, that in all but the mildest cases, the adolescent subject of scarlatina, or measles, is usually more or less debilitated or devitalized, when convalescence is established. Special care should be taken to avoid the administration of any tonic or reconstructive which is likely to disturb the child's digestion or, by inducing constipation, to minimize the appetite or desire for food.

Pepton-Mangan (Gude) is the ideal reconstructive tonic for these young patients, because it is pleasant to the taste, easily tolerable by the stomach and readily assimilable by blood and tissue and promptly efficient in restoring appetite, strength, color and general well-being.

COUGHS, COLDS AND CATARRHS.—In all but the most equable of climates, a very large proportion of the population suffers more or less from coughs and colds during the Winter months. Many individuals who, at other times, are apparently in excellent health, contract a cold almost as soon as the cold weather commences, and are scarcely convalescent before another attack occurs, until a sub-acute or more or less chronic naso-pharyngeal catarrh is established which is not thrown off until the Spring opens. The frequency of such respiratory affections during the Winter months is no doubt mainly due to surface chilling from frequent exposure to changes of temperature and the general lack of adequate ventilation of artificially heated houses, stores, offices and schools. Insufficient oxygenation, the longer "housing up" of the individual and the indisposition to open air exercise in cold weather undoubtedly serve to reduce the general vitality and the respiratory mucous membrane becomes less resistant and more readily subject to infective and catarrhal influences. When (as is usually the case) the patient cannot correct the unhygienic conditions referred to, it is the part of wisdom to tone up the general vitality of the patient and thus render his respiratory tract more resistant to morbid influences. This can best be accomplished by prescribing Pepto-Mangan (Gude) as soon as the more acute symptoms have disappeared. A thorough course of treatment with this efficient blood builder and general tonic reconstructive very frequently places the patient in a position to successfully ward off further catarrhal attacks.

PLASMODIAL ANEMIA.—In spite of the modern theory of the etiology of malaria and malarial affections (mosquito-borne infection) this plasmodial disease continues to be rife in certain sections of the country and bids fair to be, like "the poor," "always with us."

Every physician of experience appreciates the principles which should guide him in the treatment of the various acute manifestations of paludal poisoning, i. e., the destruction of the plasmodial hosts which have invaded the blood and which, if not eliminated, consume and destroy the red cells, the vital element of the circulating fluid.

When this purpose has once been accomplished the patient is but partly cured; the damage done to the red corpuscles must be repaired and the vitality of the blood restored, if re-infection is to be avoided. If there is any one condition in which direct hematonic or blood-building therapy is positively indicated, it is in Post-Malarial Anemia. As soon as the febrile period has passed, iron, in some form, should be

given in full dosage. Pepto-Mangan (Gude) constitutes the ideal method of administering this essential blood-building agent in this as well as in any anemic condition. Both the iron and manganese in Pepto-Mangan are in organic combination with peptones and are therefore easily and promptly absorbed and assimilated without causing digestive derangement or producing constipation.

PREPARE THE BABIES FOR HOT WEATHER.—During the month of June it is not a bad plan for the physician to take mental "stock" of the babies under his care, especially such as are bottle-fed, with the general idea of recommending such treatment as will tone up and vitalize those whose nutrition may be below par, so that they may enter the trying summer months in the best possible condition to ward off or withstand the depressing influences of extreme heat or the prostrating effects of the diarrheal disorders of the heated term.

Careful attention to feeding is, of course, a *sine qua non* and the details of the infant's nourishment should be carefully investigated and regulated. But this is not all. Many bottle-fed babies are below standard from a hematologic standpoint. The marasmic anemic baby deserves special attention in the way of building up and restoring a circulating fluid which is deficient in red cells and hemoglobin. In the entire *Materia Medica* there can be found no direct hematic quite as suitable for infants and young children as Pepto-Mangan (Gude). In addition to its distinctly pleasant taste, this hemic tonic is entirely devoid of irritant properties and never disturbs the digestion of the most feeble infant. Being free from astringent action, it does not induce constipation. A few weeks' treatment with appropriate doses of Pepto-Mangan very frequently establishes sufficient resisting power to enable the baby to pass through the hot summer without serious trouble, gastro-intestinal or otherwise.

TWO EXCELLENT THERAPEUTIC AGENTS.—Two most excellent therapeutic agents, that have many meritorious qualities, are commented upon below, and as a rule the physician will greatly benefit his patient by prescribing them as a "first" choice, when the pharmacological conditions indicate their use.

Liquor Ferri Albuminata, N. F.

The Solution of Albuminate of Iron contains approximately two-thirds of one per cent. of metallic iron in the form of albuminate. The average dose is 8 cc. (2 fluidrams), representing 4/5 gram of metallic iron. It is flavored with Aromatic Elixir, and contains 22 per cent. of Alcohol.

The Solution is prepared by the action of oxychloride of iron on egg albumen. It is quite clear, palatable, of a rust-brown color and has a faintly acid reaction. It may be given in milk.

Many practitioners consider this Solution the most readily assimilable of iron preparations, but our present knowledge of the pharmacology of iron would indicate that all the different forms of the metal, organic or inorganic, have the same fate in the body; that is, they behave chemically and physiologically alike. The preparation is, however, one of the least irritant to the stomach.



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Hence the administration of iron is useful only in those conditions in which the normal income or the assimilation of iron is deficient. According to the above correct theory, which is that of Tartakowski (1903-1904), it is therefore *practically useless for the physician to employ any of the numerous specialties or special secret compounds of iron in the treatment of disease. Nothing can possibly be gained, and their employment only adds to the patient's expense for the benefit of the manufacturer.*

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Betanaphthol is an efficient, safe and powerful antiseptic and parasiticide; internally in such ailments as typhoid fever, chronic diarrhea, etc. Externally, in two to ten per cent. ointment in parasitic skin diseases. Average dose, 0.25 Gm. (4 grains). Formerly called Naphthol.

It is a monatomic phenol occurring in coal-tar; usually prepared from Naphthalene. It occurs in colorless, pale buff-colored or yellowish-white, shining crystalline laminae or powder, with a faint phenol-like odor, and a sharp, pungent taste. Insoluble in water. Give in dry form, powder, capsules or cachet.

Our readers will note in this issue for the first time the artistic advertisement of Palpebrine, the safe and reliable remedial agent in all external inflammation of the eyes. This product is manufac-

tured by the Dios Chem. Co., who have, during the last quarter of a century, manufactured exclusively for physicians, Diouviburnia, Neurosine and Germileum, the reliability of which is generally recognized.

No new and untried drugs enter into the composition of these specialties and their formulae have always been communicated to the profession. Palpebrine will fill a long felt want of the general practitioners, who can themselves treat with this product, safely and successfully, external inflammation of the eyes.

The Dios Chem. Co. of St. Louis will mail free, trial bottle of Palpebrine on application.

THE CONSERVATION OF NERVOUS ENERGY.—The choice of a remedy that will prevent a continued dissipation of nervous energy, is a matter of large importance, for there is a possibility, in one's eagerness to use a drug which is therapeutically active, but insidious in its effect, to select one that is habit-forming. If this happens, no substantial gain has been made. A preparation which possesses potent therapeutic powers, and yet is free from danger, is PASADYNE (Daniel's Concentrated Tincture of Passiflora Incarnata). It exerts a markedly calmative influence in all exalted states of the nervous system, and is clearly indicated when the need for agents of its class arises. A sample bottle will be furnished if application be made to the Laboratory of John B. Daniel, Atlanta, Ga.

THE THERAPEUTICS OF RACHITIS.—Among remedial agents promising benefit in rachitis, cod liver oil, as exhibited in Cord. Ext. Ol. Morrhuæ Comp. (Hagee) is worthy of prominent mention. It not only has abundant value as a tissue nutrient, but its contained phosphorus makes it particularly potent in this condition. There is an urgent indication for this latter agent, which is admirably met by the administration of Cordial of the Extract of Cod Liver Oil Compound (Hagee).

A SIMPLE MEANS OF REMOVING PLASTER APPARATUS.

In spite of the use of special instruments, the removal of apparatus containing plaster-of-paris is often troublesome, and in the case of a recent fracture may cause injury. Methods of softening the plaster by water, either alone or with the additions of salt, are rarely successful, as the apparatus becomes coated with a layer of grease which prevents their action. Satisfactory results will be obtained by moistening the line of section with vinegar applied on a cotton tampon. After a minute the plaster will be found completely softened so that it may be easily divided with a pocket knife or ordinary scissors—a procedure easy for the surgeon and painless for the patient. By this method a plaster case for fracture of the femur, consisting of 80 turns of bandage, may be removed in about a minute and a half.—*Medical Fortnightly*.

A NEW VACCINE AND A NEW METHOD OF GIVING IT.

Charles H. Duncan, New York, advances the view that in cases of sepsis, vaccination can be accomplished by administering by mouth to the patient a small amount of the discharge from his own wound. The author cites as an example of Nature working by this method the fact that animals lick their wounds and that they never have septic wounds except on the head where they cannot lick them. Autogenous vaccination by the mouth tends to be curative in all stages of sepsis, but is especially prompt in the earliest stages when the germs have not become virulent, and in the later stages when the infected area has been well walled off. The author has used this method for two and a half years with good results. He believes it is the simplest, oldest, and most natural method of curing wounds. It may be used for preventive purposes. The author describes the method of preparation, the dosage at various periods of infection, and illustrative cases treated by him.—*Medical Record*.

SALICYLATE TREATMENT OF RHEUMATISM.

Barrier writes that since the action of sodium salicylate depends solely on the salicylic acid which is liberated on the surface of the inflamed tissues, it would appear logical to use free salicylic acid as recommended by Stricker, the founder of salicylic treatment. Having regard to the sensitiveness of the digestive tract to salicylic acid it is preferable to use the substitutes for this acid which are more readily tolerated, while they have the same action. Diplosal has the valuable advantage of remaining undecomposed until it reaches the intestine (hence it is tolerated exceedingly well by the digestive canal); further, it causes no profuse sweating like aspirin. For these reasons it is undoubtedly preferable to the latter. The effect of diplosal in acute cases of rheumatism may be said to be truly wonderful, both in its action and in the promptitude with which the latter sets in. With regard to the action of diplosal in chronic cases, though less energetic, it is still a valuable aid, and on the whole superior to earlier methods of treatment. E. Merck's Annual Report, Vol. xxiv.

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 B. Siegfried, Zofingen, Switzerland, will soon come
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 Floats down the tube digestive, fold on fold,
 Frail though they seem, yet show a giant's
 strength
 When strong men bow themselves to loose their
 hold.

Ophidian head, square and tenaculate
 Too small to harbor but a single thought—
 To let the host all else evacuate
 But cling forever to the gut it caught.

Those unrelenting hooks which never yield
 When once upon the shrinking gut they seize
 Know not defeat on any hard-fought field—
 Can bring to earth a bellowing Hercules.

For naught the stricken bowels buck and strain,
 Expulsive frenzies pass in sighs away.
 They can not end the grim usurper's reign,
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High on the right a solemn sentry stands,
 Old Hepar rears in might his curving pile,
 And at the monster prone among the glands
 Discharges broadsides in a squirt of bile.

On it in vain digestive torrents pour,
 In vain the liver's well-directed squirt,
 The stupid, pelted head but clings the more,
 The body answers with a scornful flirt.

All men its mark or be they small or great,
 The laborer delving in the stifling sewer,
 The sovereign ruler of the Church or State,
 Mayhap a Nell Gwinn or a Pompadour.

The flesh it melts, the ardent blood it cools,
 The maiden's cheek grows wan, 'tis said for
 love.

But tell-tale links discovered in the stools,
 Show trouble unromantic up above.

Insatiate glutton, those pale segments there
 Know but one purpose, which is to be fed.
 All things alike it never knocks its fare
 Be it a kingly dish or beggar's bread.

The fairest fruits are gathered for its feed,
 The richest wines are cellared for its thirst,

The toil of many a one of Adam's seed
 Goes to the nurture of this worm accurst.

Replete with food the languid cestode sleeps
 Its rippling folds the chymous juices lave,
 And o'er its length a soft contentment creeps
 As undulates the peristaltic wave.

The days go by, the seasons come and wane,
 The host reluctant waxes old, forsooth,
 The parasite with never-ending chain
 Keeps an immortal youth.

Nay, it also, with all that's born must pass,
 Those pallid folds like banners must be furled,
 What time a stagg'ring dose of filix mas
 Shall thrust it gasping on the outer world.

Its reign is ended and its empire lost,
 Its cysticerci scattered wide and far
 This haughty monarch with vain hooklets
 crossed

Lies coiled forlornly in a Mason jar!

BERNARD WOLFF, M. D. in *Journal-Record of
 Medicine*.

TREATMENT OF AMEBIC DYSENTERY.

Albert F. R. Andersen, of Brooklyn, N. Y., writes that amebic dysentery is not infrequent in temperate climates, and that every practitioner should be able to recognize and treat it. The ameba may remain for years in the intestine without doing any harm until the patient's vitality is sapped by some other disease, such as tuberculosis or pneumonia. This organism is found in water or green vegetables that have been contaminated with human excrement, and may cause a colitis characterized by the presence in the bowel of small ulcerations that seldom perforate, and by the presence of frequent stools with mucus and blood, tenesmus, tenderness over the colon, and general weakness. Gastric symptoms are absent. The best curative treatment has been the use of daily large doses of ipecac given in salol-coated capsules which will not dissolve in the stomach. A preliminary cathartic is given, light diet is ordered, and the ipecac is continued in reducing dosage for about three weeks.—*Med. Record*, Nov. 18, 1911.

SODIUM CITRATE IN ACIDOSIS.

Lichtwitz advocates sodium citrate in place of sodium bicarbonate for the treatment of acidosis. He claims that sodium citrate is practically tasteless, and may be added to food and also given dissolved in water, with the addition of lemon juice. When given in this way it makes a very pleasant drink. Sodium citrate causes much less disturbance to the digestion than sodium bicarbonate. He has given sodium citrate up to 50 gm. a day; it has not caused diarrhea, that sometimes results from large doses of sodium bicarbonate. He also adds that it is theoretically possible to give sodium citrate solution by subcutaneous injection, while the strong alkaline reaction of sodium bicarbonate solution prevents its use subcutaneously. However, he has had no personal experience with subcutaneous injections with sodium citrate.—*Progressive Medicine*, Dec., 1911.

RED CROSS SEALS.

If expectations for the sale of Red Cross Seals this year, as announced by the National Association for the Study and Prevention of Tuberculosis today, are realized, one hundred million of the holiday stickers, or a million dollars' worth, will be sold. Postmaster-General Hitchcock has approved of the design of the seal. Owing to the fact that many people last year used Red Cross Seals for postage, the Postoffice Department has given orders that letters or packages bearing seals on the face will not be carried through the mails. This will be the third year that the seals have been sold on a national basis. In 1908 over \$135,000 was realized from the sale; in 1909, nearly \$225,000, and in 1910 nearly \$310,000.—*Medical Record*.

SALVARSAN IN MALARIA.

Iversen And Tuschinski (*Deutsche Med. Wochenschrift*) have investigated the action of salvarsan upon the malarial parasite. The first report was based upon five cases of tertian fever, in which they had given 0.4 gram of salvarsan intravenously with excellent results. In the present report, the authors summarize their experience in 61 cases, presenting a great variety of malarial affections in persons of various nationalities. The remedy was given intravenously,

as well as by the combined method; namely, by following the intravenous injection two days later by an intra-muscular injection of an alkaline solution. The dose given intravenously was usually 0.5, while intramuscularly 0.3 was injected. The following conclusions were reached by the authors as the result of their experience: Salvarsan, when introduced in a single dose of 0.5 intravenously, produces a specific action upon every variety of malarial parasite. In tertian fever, the parasites usually disappear after from 12 to 48 hours. The attacks cease. It is impossible to say, however, whether or not this effect is permanent. It is best to combine the intravenous administration of salvarsan with the intramuscular. In quartan fever the action of the remedy does not last even after a dose of 0.8 gram. In the tropical form, doses from 0.5 to 0.8 can only produce a temporary disappearance of the ring-forms from the blood. The crescent form does not disappear, although it may become temporarily modified in shape and staining properties. In some cases of tropical malaria, a so-called contrary effect was noticed. After a temporary lowering of the temperature, a diminution or complete disappearance of the ring-shaped parasites from the blood, there takes place a distinct turn for the worse in the patient's condition, with a reappearance of rings and crescents in large numbers.

TREATMENT OF PRURITIS IN THE AGED.

Alderson, in a recent article, discusses the treatment of senile pruritis. When the cause is not discoverable, the author confesses that the condition is often stubborn. Remarking that the innumerable remedies offered are generally attended by signal failure, the author remarks that he has found useful a 2 per cent. salicylic acid ointment. Good results have also followed the use of a 10 per cent. solution of spirits of peppermint in equal parts of water and glycerin. Some of the aged patients have been offered thyroid substances in 12 centigram doses. During its administration, he insisted on rigid supervision by the nurses. Where stimulation was necessary, hot and cold douches have been found valuable. Relief for simple cases has sometimes been gained by supplying a substitute for the natural oil. The use of a simple ointment has relieved the condition. Needless to say, the cleaning of the intestines is not passed over without being emphasized.—*California State Med. Jour.*

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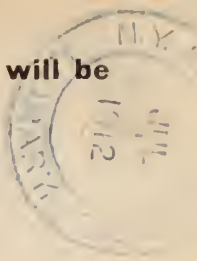
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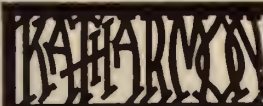


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PRACTICAL EUGENICS.

From Chicago comes the announcement of a definite step in the direction of the control of marriage, the dean of the cathedral of the Protestant Episcopal Church in that city having declared that henceforth no marriages shall be permitted in the cathedral unless both the man and woman are able to present certificates of health from a reputable physician to the effect that they are normal physically and mentally, and are not suffering from an incurable or communicable disease. This step, the dean announces, has been taken only after months of study of the situation, and it is believed that the stand will meet with the approval of the clergy generally, all of whom must have long felt the undesirability of being a party to the marriage of persons who, because of their physical condition, should never be allowed to enter the married state. The innovation has resulted at least in much discussion of the subject, the approval of many being freely given, and the practicability of the plan only being called into question.—*Medical Record.*

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ORIGINAL ARTICLES.

"THE DIAGNOSIS AND MANAGEMENT OF EPIDEMIC VARIOLA."*

BY

CHARLES S. CAVERLY, M. D.,
President Vermont Board of Health.

My title is quoted from your program.

The expression "epidemic variola" might possibly lead to the inference that there was a form of variola that was not epidemic. With many of our infectious diseases, a case, or a few cases, in a community are not generally considered an epidemic. A single case, however, of variola may give rise to all the uneasiness and public disturbance of a true epidemic, hence variola must always be considered an epidemic disease, even when we have but a single case in the community.

It is (unfortunately for medical education) impossible to bring cases of these contagious diseases before a class for clinical purposes. The consequence is that most of our medical students graduate without ever having seen a case of smallpox. It probably is true that a majority of the practicing physicians in this state have never had this experience.

DIAGNOSIS.

It is one thing to diagnose a typical case of contagious disease and quite another to diagnose the atypical and mild case. This holds true not only of smallpox, but of most of our contagious diseases. The typical case, which the text books describe, is usually easily and early detected. The walking, atypical case frequently taxes the diagnostic ability of the most experienced.

The history of the mild type of smallpox, which has prevailed in this country during the last twelve or thirteen years, is a striking illustration of the truth of the above statements. This disease has been mistaken for chicken-pox, "Cuban itch," and various other diseases, real and fancied, by expert diagnosticians all over this country.

*Read at the May meeting of the Burlington and Chittenden County Clinical Society.

The disease was undoubtedly imported from Cuba soon after the close of hostilities in 1899 and prevailed for some time before it was even suspected of being true variola. It is perhaps not to be wondered at that this was the case, inasmuch as the variola, with which we had been familiar, was a much more severe and fatal type of disease.

This mild type was mild in every particular. The patients were frequently not ill enough to be in bed and the mortality was practically nothing. In the absence of exact knowledge of the etiology of variola, we have no sure test by which we may recognize the disease. The mild cases, often lacking some of the time-honored landmarks of the disease, are especially misleading. The case must usually be viewed from all angles and all possible surrounding circumstances must be considered. The importance of an early and accurate diagnosis in variola is obvious. It is vital to the community as well as the patient.

SYMPTOMS ON WHICH A DIAGNOSIS MUST REST.

First. The existence of the disease in a community will of course furnish a clue to the diagnosis of suspicious cases.

Second. The incubation period. If it is known that a person has been exposed to variola, the onset of symptoms some eleven or twelve days later would make a diagnosis comparatively clear.

Third. Absence or otherwise of vaccination. In cases of a suspicious eruptive disease, if the patient has a distinct vaccination scar, the chances of the case being one of variola are appreciably diminished. If there are two or three good scars on the individual, the chances of the diagnosis being one of smallpox are correspondingly lessened.

Fourth. Age. Variola does not show a preference for any age. Children, adults and old people are alike susceptible to the disease. The disease for which variola is oftenest mistaken is varicella. The latter disease is distinctly a disease of childhood and youth. Cases of chicken-pox after twenty years of age are rather rare and after twenty-five or thirty years so rare as to be considered curiosities.

Hence if a disease is prevailing to any appreciable extent among adults, or is attacking old and young in a community, the strong presumption is that the disease is true smallpox.

Fifth. Initial fever. Even the mild form of the disease of which we are especially speaking at this time has usually distinct symptoms at the start. A case, which subsequently may prove to be very mild, as far as the extent of the eruption and the febrile symptoms are concerned, will have quite pronounced initial symptoms.

The initial fever in smallpox is usually a distinct entity and lasts three days. The subsidence of this fever and the accompanying symptoms are apt to be followed immediately or within a few hours with the appearance of the eruption. Abrupt febrile symptoms occurring especially in a community where there are cases of variola should therefore receive careful attention. The positive diagnosis of smallpox from the initial fever alone is of course an impossibility in the absence of exact knowledge of the etiology and pathology of the disease. Cases during this stage of illness are apt to be mistaken for the grippe, rheumatism, hard colds and other vague diseases. The practitioner should be on his guard, if there is reason to think the disease exists anywhere in the neighborhood.

Sixth. Appearance of the eruption.

It not infrequently happens that the initial fever in smallpox subsides and the patient and friends, and occasionally the physician, think the case is well. It has even occurred to some of us that we have discharged such cases as well, only to be summoned a few hours later to explain an eruption.

The eruption of smallpox appears at the termination of the initial fever on the third or fourth day, but there is sometimes an interval of several hours between the termination of the initial fever and the appearance of the eruption.

The eruption usually begins on the forehead and exposed surfaces of the body.

First it is a macule, soon passing into the elevated papule.

Seventh, uniformity in the different stages of the eruption.

The eruption in smallpox in the course of ten or twelve days goes through a regular succession of stages. The papule soon becomes a

vesicular and the vesicle becomes umbilicated and the serum changes to pus, which in turn dries up and forms the scab. We have then the following distinct stages of eruption, macule, papule, vesicle, pustule and scab.

It is the rule that the eruption should be at the same stage all over the body at the same time, i. e., you should find the body covered with vesicles or with pustules or with scabs. The apparent exceptions to this order of things are due to external influences, especially finger nails and possibly also to vaccination. The eruption is sometimes a little further advanced on the exposed surfaces of the body than on the parts that are later affected. The rule, however, which makes the various stages distinct from each other, enables us to distinguish with greater certainty between this disease and chicken-pox.

Eighth. Greater abundance of the eruption on the head and extremities. The preponderance of the eruption as a rule in this disease is on the head, neck and extremities, i. e., the eruptive points are most numerous on these surfaces. This is another distinguishing characteristic between smallpox and chicken-pox.

In chicken-pox, as you are aware, the eruption is thickest on the trunk.

Ninth. Secondary fever. The appearance of secondary fever in the mild form of the disease, which we are considering, is exceptional. A small percentage of the cases reach a secondary fever, though this is usually mild, its entire absence is not unusual.

The greater or less abundance of pustules on the body does not seem to measure accurately the amount of secondary fever in this disease. This is especially true of these mild cases, which we now see. A large surface, thickly stuffed with pustules and even occasionally confluent will frequently occur with almost no secondary fever. So many of these cases, however, have a slight eruption and correspondingly few pustules that the absence of secondary fever is not significant in making the diagnosis.

Of course it is usually to be expected that a diagnosis in an individual case will have been made before the stage of secondary fever arrives.

DISEASES FROM WHICH SMALLPOX SHOULD BE DIFFERENTIATED.

First, the grippe. The "initial fever" of this disease simulates very closely the well known

symptoms of the grippe. The head and back ache and fever are all characteristic of both diseases. It is not an unusual mistake to make, neither is it remarkable that such a mistake should be made, as to confuse these two diseases. I know of no way in which a sure differentiation can be made. The catarrhal symptoms of the upper air passages are of course generally lacking in variola. Given a case of variola, however, in a community, grippy symptoms should be carefully scrutinized.

Second. Measles and scarlet fever. The prodromal rash we occasionally find in variola has some of the characteristics of each of these diseases. It should, however, seldom be difficult to distinguish between these two diseases and variola, on account of the site at which the eruption appears. The rash that might be mistaken for either measles or scarlet fever appears most frequently on the thigh and lower abdomen or on the axilla. And if we remember the site of the appearance of the eruption in measles and scarlet fever, we should make no mistake of this sort. The measles eruption appears about the ears and hair and that of scarlet fever on the chest and back.

Third, impetigo contagioso. It has been said that this skin lesion has occasionally been mistaken for smallpox or vice versa. The fact that impetigo is distinctly a local infection should be remembered in this connection.

Fourth. A pustular syphilide. Pustular syphilide may of course in any special case resemble as to the appearance of the individual pustules smallpox pustules. The distribution, however, of the skin lesion, and the failure or otherwise to get a smallpox history should decide the diagnosis of these cases.

Fifth, drug eruption. It is quite conceivable that bromism or iodism might under very exceptional circumstances be mistaken for variola. The points that should be considered in deciding between these should be the clinical history of the case in question together with the presence or otherwise of the disease in the community.

Sixth, chicken-pox. Chicken-pox of severe type may easily be mistaken for the mild form of variola. A mistake of this kind is not at all unusual and has frequently led to serious embarrassment to all concerned.

Variola has prevailed in some of our Vermont communities for weeks and even months under the innocent title of chicken-pox. The differential diagnosis between these two diseases is of the highest importance and every resource should be exhausted in cases of doubt, inasmuch as so much depends upon the result.

All considerations, social and commercial, as well as the public health, demand that physicians should exercise the greatest care in regard to the differential diagnosis between variella and variola. The points that are of importance in deciding between these two diseases are:

a. Age. Chicken-pox is essentially a children's disease. The strong presumption is when we meet a case of one of these diseases in an adult that the diagnosis is variola. As I said before, cases of chicken-pox in a person over twenty are occasionally met but over twenty-five or thirty are exceedingly rare.

b. Initial fever. The initial fever in chicken-pox is transitory and seldom lasts more than twenty-four or at the outside forty-eight hours, while that of smallpox almost always lasts three days.

c. Appearance of the eruption. The appearance of the eruption in chicken-pox is within twenty-four hours of the beginning of the initial symptoms usually and that of smallpox comes on the third or fourth day.

d. Site and sequence of the eruption. The eruption in chicken-pox begins first and is thickest on the trunk; that of smallpox begins first and is thickest on the head and extremities.

e. Eruptive stages. The smallpox eruption follows a quite uniform and regular series of stages. In the papular stage the eruption is papular all over the body. During the vesicular stage the eruption is vesicular and during the pustular stage, each spot is a pustule.

The eruption in variella is almost never uniform. We get the papule, vesicle and occasionally a pustule mixed up haphazard on the same surface. It is occasionally suggested that the eruption in chicken-pox is not found on mucous surfaces and thereby a diagnostic point between these two diseases may sometimes be of value. In my experience this is a mistake, inasmuch as we frequently find the vesicles of chicken-pox on the mucous membranes. The same is also occasionally true of the palms of the hands.

A careful consideration and weighing of the different points suggested should make a diagnosis between these two diseases usually possible. I hesitate to go so far as to say that such a differential diagnosis is invariably possible. This is certainly not the case.

If we consider the clinical picture presented by an individual case, taking this in connection with the extraneous circumstances which may usually be offered in a community, a diagnosis between these two diseases can usually be made with reasonable certainty.

There is one point with reference to the diagnosis of smallpox that we ought not perhaps to wholly pass over and that has to do with the so-called "Shotty feel." This symptom is frequently mentioned in the text-books and we all remember to have heard it in our college days. During the early stage of the eruption, in passing the fingers over the skin and pressing somewhat firmly thereon, small nodular masses were sometimes felt rolling under the finger like shot. I am frequently faced with the statement that a given case under consideration has never presented this shotty feel and in my experience with these mild atypical cases, which are so important to us nowadays, this so-called "shotty feel" is very rarely observed. I have now and then been able to make this out over the flat bones of the skull, but I believe it is not a symptom which should be relied upon in making a diagnosis.

MANAGEMENT OF AN OUTBREAK (PROPHYLAXIS).

The prophylaxis of smallpox is infinitely more important than its curative treatment. This prophylaxis depends upon these propositions.

First. Diagnosis. The identification and accurate diagnosis of the disease in its incipiency is of the highest importance and on this depends very largely the success or failure of all prophylactic measures.

Second. After the disease is recognized as smallpox, our first concern should be with those who have been exposed. A careful list should be made by the physician or the health department of all those who have by any possibility been exposed to the sick person. This list should be used by the health authorities to the extent of putting up the bars as far as possible to prevent these exposed persons from unwittingly spreading the infection until after the period of incubation has passed with them.

Third. Vaccination. To the end of effectively controlling the infection in a community, all those who have been exposed to the disease, should be vaccinated. After vaccination, such persons may be allowed their freedom for a week, when they should be seen by a physician daily during the succeeding fortnight.

Varioloid, or smallpox modified by vaccination, may of course produce the true disease by contact, hence, even if the vaccination "takes" in a given individual, that individual may have the modified form of the disease after the regular incubation period.

In case any exposed persons decline or refuse to be vaccinated, they should always be put under strict quarantine for three weeks. This is to cover the extreme limit of possible incubation.

Fourth. Official notification, isolation and terminal disinfection.

Sanitary regulations everywhere require a notification of smallpox like all other contagious diseases. This notification is made of course to the health officer. The health officer immediately "gets busy" in rounding up all those who have been exposed to the disease and isolating or quarantining those sick.

Quarantine, or isolation of the case, consists in confining the poison of the disease or the infection, as we call it, within the narrowest possible limits. In case of smallpox outbreaks, the surest and safest way to accomplish this isolation is by means of isolation hospitals. A community that can have every case early moved to an isolation hospital can thereby rid itself of this infection more safely and surely than would be the case, if every case was treated in its own home. In the latter instance, each individual case is a center or focus of infection. When the community has an isolation hospital, it has but a single such center of infection.

The terminal disinfection after smallpox is considered by most authorities as an essential in its prevention. It is not necessary to discuss here the infectiousness of the desquamated scab in this disease, or of the discharges from mucous surfaces. It has always been considered a necessary feature of the prophylaxis of smallpox that the apartments, and especially the apartments occupied by the sick persons, together with all furniture, clothing and other articles should undergo a careful cleansing and disinfection before further occupancy or use.

There is very strong circumstantial evidence in favor of the infectiousness of the desquamated skin and scabs from this disease, but in the absence of exact knowledge of the cause of this disease, it does not behoove us to enter into any serious discussion of the point of exit of the contagion from the human body or the vehicle by which it is conveyed.

A reasonable regard for public safety demands that apartments and things that *may* be infected, shall be thoroughly disinfected before they can do injury to other persons.

On these four propositions depends quite largely the prophylaxis of this disease.

TREATMENT OF THE CASE.

The treatment of smallpox need not detain us. It is purely symptomatic. There is no known specific treatment and can of course be none until we know more of its cause. We may alleviate the febrile symptoms and the discomfort caused by the cutaneous eruption and irritation in the usual manner by baths, lotions and ointments and we may look out for the nose, throat and eyes and we may give our attention to the exhaustion that accompanies the secondary fever in severe cases. There is, however, no specific and nothing which general principles will not cover.

VACCINATION.

A word in regard to vaccination. I do not need to enter into any defense of vaccination before this audience. Every physician, and I may truthfully say, every reasonable person, who has investigated in an impartial way the benefits of this operation to the human race, can never for a moment doubt its prophylactic value in smallpox.

Of vaccination in general I can only say that the German practice of vaccination in infancy, to be repeated about the tenth or twelfth year of life, is probably the best practice and it is regrettable that such a practice cannot become absolutely universal.

In the prevention of smallpox, however, it is effective if practiced within two to three days after exposure to the disease. The prophylactic value of vaccination is probably realized on about the eighth day after it is done. The incubation period of smallpox is usually at least eleven days. Hence a vaccination done three days af-

ter exposure should protect against the disease; done later than this during the incubation period, we are very apt to get a vaccination sore running its course with the other eruption of the disease. A well vaccinated community can never have smallpox.

THE TOWNE METHOD FOR DRUG HABITUES.

BY

WILLIAM F. WAUGH, A. M., M. D.,

Professor of Therapeutics, etc., Bennett Medical College, Chicago, Ill.

Dr. Wasson's paper in your issue of March is one that should not pass without comment. In it he takes up the Towne treatment for alcohol and drug addiction, and advocates it with the intolerance of the neophyte. Despite the peril of being adjudged by Dr. Wasson a "crank," "jealous," etc., I must rank myself among those who criticize the Towne treatment, albeit not rancorously.

My first objection to Dr. Wasson's paper is that it ignores the work that has been done along this line by the medical profession. Such men as Crothers, Erlenmeyer, Regnier and Jennings, have devoted their lives to this class of diseases, and have accomplished much, as everybody knows who has taken the trouble to look up the literature of the subject. The Towne advocates ignore this, and accept the formula of a non-medical quack, who has made public the method he hitherto exploited as a secret. We are all tolerably familiar with the methods of these people, who, sublimely ignorant of man, his functions and their disorders, and of remedies and their properties, are yet able to cure cancer, consumption, epilepsy, and all other diseases, which the medical profession has found beyond their art. Wonderful indeed, are the ways of Providence, which endows with such power over diseases of man only those who know nothing of either disease or man. There is an Association for the Study of Alcoholism and Drug Habits, which meets yearly, and comprises many of the most prominent therapeutists in America. Many of its members have spent their lives in this study—and yet Mr. Towne has discovered the miracle that eluded them all!

I am not saying he hasn't; I merely ask, is it probable? How many of the quacks who have made extravagant claims have made good? During the early years of my study of the drug habits I investigated many quack methods. One I quote as a type, with scarcely an exception. A physician wrote me that I ought to investigate the method of an advertising party, who had a remedy that really removed the craving for opiates. I replied that the remedy must be morphine. My friend wrote that he had sent to the party for a sample and tested it but found no morphine. I had him secure a sample from a patient who found it really removed the craving for opiates; he did so, and *that* sample contained morphine!

Another man claimed to cure the morphine habit in two days. He purged his patients tremendously, and after two days informed them that as all the morphine was out of their systems they were "cured." He was honest in his claims for he knew no better. His record of cures (500) was twenty times longer than Dr. Wasson's (25), for, curiously enough, he had hit upon the correct method of treatment—elimination. He who reads the Proceedings of the Association above-named will find that elimination has been fully discussed during the past few years, and recognized as the basis of treatment.

We will now discuss Mr. Towne's treatment, and in doing so will try to eschew "rancor." The basis of the method is purgation, as with that of Mr. Hyers of Akron, the man who cured 500 cases in two days each. Both use the U. S. P. compound cathartic pill—and where can one find a better cathartic? But do we have to go outside our own ranks to learn its uses? It is very good treatment, but Mr. Towne can lay no claims to originating it, or to being the first to apply it to the treatment of alcohol or drug habits.

As above said, Mr. Hyers claims to do more by catharsis alone than Towne does with the aid of his specific; so that our inquiry is as to whether the latter adds anything to the value of elimination. This specific consists of a mixture of belladonna, hyoscyamine and xanthoxylon, a set formula, not varied for sex, age or condition, applied not to meet a recognized condition but as a specific, just as we give mercury for syphilis or *calx sulphurata* for gonorrhoea. This is the old way of making prescriptions, but not in accord

with modern ideals of the scientific application of remedial agencies. These simply ask that the physician shall recognize the departure from health, from the harmonious operation of the bodily functions, and shall so apply his remedies as to correct the trouble and restore harmony. What is the disorder for which this remedy is given? What does it do?

We may get at the answer by studying the remedy. Belladonna is atropine; hyoscyamus a mixture of atropine (hyoscyamine) and hyoscyine, about balanced in therapeutic power, sometimes one predominating, sometimes the other. We have therefore a predominance of atropine, modified by hyoscyine. These are antagonistic as regards sleep, synergistic as regards the antispasmodic action and power of relieving pain. The directions show the dosage to be gauged solely by the atropine effect, which is pushed to the toxic point.

Xanthoxylon is not utilized by regular medicine. It is one of those native American drugs for which remedial virtues are claimed by the Thompsonians and their descendants, but of which no real trial has been made by us. It contains berberine, an alkaloid ranked as a bitter tonic, and believed by me to have the specific power of contracting relaxed connective tissue. Xanthoxylon does more—it promotes all the digestive secretions and the perspiration, and elimination generally. The Eclectics also praise it as a nerve tonic, useful in states of vital depression where elimination is also needed. A remedy that is an eliminant, nerve tonic, and restores the digestive powers, is well calculated to be useful when one is being relieved of alcohol or drug addiction.

The use of hyoscyine as a cure for morphinism is well known. I have always objected to it as based on a false principle. It is employed to stupefy the victim until the "ordeal" is past, and this is on a par with a French suggestion, of avoiding sea-sickness by taking chloral enough to keep one unconscious until the voyage is done. It is no way to cure a sick soul, to restore self-control and self-respect to a human being long dominated by a drug.

What, then, is the net value of the Towne method?

Elimination, *plus* xanthoxylon as above estimated, *plus* the powerful effect of atropine and hyoscyine upon the nervous system, and especially the *psyche*, and *plus* novelty and confident asser-

tion. The latter is by no means a small element. Exaggeration has its uses, as witness Dr. Wasson's remark: "Wonderful indeed is the transformation that takes place within three or four days. A shaking, tottering, sniffling object, whose only thought is for opiate, becomes a being content and peaceful and *with no desire for drugs!*" The type of opium-habitue developed in Vermont seems somewhat different from that presented in Philadelphia and Chicago. In twenty years' care of drug habitues I have never had such a case apply to me—and some of my patients come from New England.

The Towne treatment has merit. It is succeeding, and will until the novelty wears off and failures multiply. The elimination basis is sound and will endure, for the cause of the suffering in the withdrawal period is toxemia. But the method is not as good as elimination suited to the patients, many of whom cannot safely endure the rigor of the Towne method, with the addition of such treatment as is indicated by the conditions presented in each case. To illustrate: If the patient's pupils are dilated, he is sure to be worse when any of the mydriatics is administered, whereas physostigmine contracts the pupils and at the same time relieves the neurotic and psychic conditions with a completeness that leads the patient invariably to assert that he has received morphine. Dr. Wasson says nearly all his cases require strychnine in maximum doses to combat any possible weakness of the heart. Waiving the objection that strychnine is not specifically a heart- tonic, I would say that there are cases that can not bear strychnine in any dose. When vascular tension is relaxed it is useful, but in some cases we find a pulse tense as a taut fiddle-string, and any tensor like strychnine will accentuate the suffering to an unbearable degree.

When the early enthusiasm has worn off Dr. Wasson and the rest will find, first, that there is nothing in Towne's treatment that was not already well known to those who have made a study of these cases; and second, that neither this nor any other method of treatment will relieve the doctor of the necessity of studying his cases, and suiting his treatment to the conditions displayed in each case—no two of which are precisely alike. But I am bound to add, the public demands the nickel-in-the-slot system, and puts more faith in mystery and assertion than in open scientific truth. If one wants to attract patients he should be mysterious and assertive.

A FEW POINTS GAINED FROM THE USE OF THE CYSTOSCOPE.*

BY

W. BURTON THORNING,

Houston, Texas.

Mr. President and Gentlemen:

I desire particularly to call your attention to the title of this paper, "A Few Points Gained from the Use of the Cystoscope."

The point I wish to emphasize is, that it is not written from the viewpoint of the expert cystoscopist, but from the viewpoint of the general surgeon, using a cystoscope as an aid in diagnosis of surgical conditions of the genito-urinary tract.

It is quite probable that only the expert cystoscopist can fully realize and thoroughly appreciate the extreme degree of refinement in diagnosis made possible by the expert use of the cystoscope, but anyone among us by observing and becoming familiar with its use in actual everyday practice will, I believe, soon learn to value it very highly.

It is not my purpose in this paper to attempt to present the technical or theoretical side of this question, but to try to illustrate by actual cases taken from my case records, some of the benefits I have derived from cystoscopy and ureteral catheterization, discussing each case as it presents itself with the hope that they may be of some interest, and that from the discussion which will follow we may all gain some point in diagnosis or treatment.

CASE I.

Woman—47; married; six children.

Family history, negative. Personal history, negative, until ten months ago, when she was thrown from an automobile, striking heavily on shoulders and back. Four hours later voided bloody urine, and once again during the night. Following day had some muscular lameness, but was otherwise well and was up and about the house attending to some of her usual duties.

Three months ago began to lose appetite and feel run down. After two or three weeks consulted her physician, and under tonics, etc., felt some better, but continued to lose weight and also discovered that she had a slight elevation of temperature every evening.

*Read before the South Texas District Medical Association.

At this time she was referred to my partner—an internist—for examination and diagnosis.

She had no complaints except that she had lost fifteen pounds in weight, appetite poor, and had a tired, languid feeling generally. No indigestion, bowels slightly constipated but regular, no pain, no cough, no chills, no sweats, no bladder symptoms.

Physical examination shows a short, very stout woman weighing 170 pounds, somewhat pale, heart and lungs normal, nothing abnormal could be palpated in the abdomen. Blood examination showed hemoglobin 70 per cent, red cells 3,600,000, whites 10,000, polynuclears 75 per cent, no plasmodia. Urine, quantity in 24 hours, 36 ounces; slight cloudiness, acid, faint trace albumen, no bile, no sugar, no red blood cells, a few hyaline and granular casts, pus cells numerous. Tuberculin reaction negative.

Briefly, then, here was a woman 47 years old with negative family and personal history, with no symptoms except loss of appetite, flesh and strength, in whom a most careful, painstaking examination failed to reveal anything abnormal except a moderate anemia, possibly a slight leucocytosis, a slight daily rise in temperature and pus in the urine.

It would seem, then, that our problem was to discover the origin of the pus.

Pus in the urine, being careful to exclude discharges from the vagina, comes from the urethra, cystitis, new growth in the bladder, bladder calculus and from the kidneys. In the male we must include the prostate and seminal vesicles. We must also remember the rare instances where an abscess external to the genito-urinary tract, for instance, a psoas, or tubal abscess, perforates and empties into the bladder.

When it persists without symptoms in spite of the appropriate treatment by drugs, irrigations of bladder, instillations of silver nitrate, etc., etc., it is safe to assume, in the great majority of cases that it is coming from the kidney, and calls for a cystoscopic examination.

In this case, catheterizing both ureters showed a perfectly clear normal urine coming from the left kidney, while that from the right seemed lessened in amount and was very cloudy from admixture of pus. Our diagnosis of stone in the renal pelvis was verified by X-ray and following a pyelolithotomy the woman made a prompt recovery to her former good health. The

stone in this instance was single, smooth, and large, weighing 166 grains.

Another point in this case, besides illustrating the value of the cystoscope, is the fact that not so very infrequently we meet with a case where kidney stone produces neither pain nor hematuria, although it is quite probable that repeated examinations of the urine would have at some time shown blood cells, for I believe the absence of this symptom is much more infrequent than the symptom pain.

CASE II.

A man of 48 had suffered for several years with bladder symptoms supposed to be due to an enlarged prostate.

This man was a friend and neighbor, but had never been my patient. One of his favorite pastimes, however, was to come over and sit on my front gallery and tell me his troubles, but he would always terminate the conversation by saying, "You will never operate on me, doctor; look what you did to Joe Smith." His friend, Mr. Smith, on whom I had previously performed a prostatectomy, had suffered a loss of sexual power in consequence.

However, after an unusually prolonged and severe exacerbation he finally called me in to examine him. Without going into details his symptoms were those of an enlarged prostate, with some residual urine, with little or no obstruction, greater frequency by day than by night, and evidently more than the ordinary amount of pain. Digital examination through the rectum revealed what I took to be an enlarged middle lobe, irregular in outline, and of stony hardness. The lateral lobes could be palpated with difficulty, but so far as I could make out appeared to be normal in size and consistency.

Up to this time I had removed two carcinomatous prostates, in neither of which had I made that diagnosis previous to operation, but in this case I was certain of it and congratulated myself that my tactile sense was becoming educated.

After a consultation with his family physician we advised a prostatectomy with the hope of affording temporary relief from his distressing symptoms. Accordingly he was removed to the hospital and without further examination was prepared for a supra-pubic operation. On opening the bladder we discovered that our carcinoma of the prostate was a calculus firmly imbedded

in a diverticulum, just anterior to the inter-ureteric bar, and the prostate entirely normal. The stone was removed piecemeal, as the surrounding edema made any other method quite impossible. The point in this case is, that had we cystoscoped him I should have been spared the humiliation of this gross error in diagnosis. Fortunately for the patient, it made no difference, as any operative procedure other than suprapubic cystotomy would have been inadequate.

CASE III.

Woman—72; wife of farmer.

Family history negative, except that one sister died in early life of tuberculosis. Personal history, negative up to age of puberty. Menstruation always painful; mother of six children, all delivered with instruments. Hysterectomy for fibro-myoma at 50. After operation was in good health and worked very hard, doing a great deal of outdoor labor. Six or eight years ago began to get up once or twice every night to urinate. This has gradually increased in frequency until for the past year she passes water about every hour in the daytime and every two hours at night. About one year ago noticed that she was passing bloody urine, which lasted three or four days. After this attack the urine cleared up and remained clear for about a month. Then another attack of bleeding, followed by a shorter period of relief. Since then the intervals between attacks have gradually grown shorter and for the past three months she thinks there has been no day without some blood and many times small, black, or very dark colored clots. Urine has never been offensive to smell and has never scalded or given pain on passing. Complains of lack of appetite, constipation, loss of strength and weight, all of which she attributes to an extra amount of hard work, her husband being crippled with rheumatism.

Examination of a 24 hour specimen of urine showed total amount 40 ounces; alkaline, sp. gr. 1.012; color, a dark reddish-brown; albumen, a trace; no sugar, no bile. Under the microscope the sediment showed a large amount of fresh blood, a few pus cells, and a few hyaline and granular casts. Blood examination, red cells 4,000,000, white 6,700, hemoglobin 75 per cent, otherwise normal. Physical examination was practically negative. A woman of large frame but showing an evident loss of flesh. Lungs normal, heart apparently normal, no enlarge-

ment, no murmurs. Blood pressure 165 m. m. mercury. Abdomen showed an operation scar in median line below umbilicus, otherwise normal; no tenderness anywhere, and neither kidney palpable. Vaginal examination entirely negative; X-ray of kidneys and bladder also negative.

The essential features of this case, then, are a woman of 72, who has been losing flesh and strength for a year with the passing of bloody urine as practically her only symptom.

It is not the object of this paper to attempt a complete differential diagnosis of hematuria, but it may be profitable at this point to consider briefly some of the principal causes.

Omitting traumatism, we have as causes of hemorrhage from the genito-urinary tract, acute and chronic nephritis, kidney stone, the various neoplasms of kidney origin, tuberculosis of the kidney, cystic kidney, crystals of calcium oxalate, acute cystitis, bladder stone, new growths of the bladder, either benign or malignant, tuberculosis of bladder, acute prostatitis, prostatic hypertrophy, and occasionally a case we have to classify as of unexplained or unknown origin.

This list of the causes of hematuria is doubtless incomplete, but contains, I believe, the principal ones which give us trouble in making a differential diagnosis.

Some other causes may be frequently seen, but usually accompany some underlying condition, which is perfectly obvious and explains the hematuria. I refer to the hemorrhagic form of some of the infectious diseases such as smallpox, septicemia, typhoid, etc., also the blood diseases such as leukemia, pernicious anemia, hemophilia, purpura hemorrhagica, etc., etc. There are a few of the poisonous drugs also which are capable of producing hematuria, and should be borne in mind when we are arriving at our diagnosis by a process of exclusion.

To return to the case reported, then, the time it has persisted and the fact that she has taken no medicine, enables us to exclude drugs as a cause. The blood examination and inspection of the surface of the body excludes hemorrhagic diseases. The absence of fever and other symptoms excludes any of the acute infectious diseases; examination of the urine excludes calcium oxalate crystals, and we should hardly expect an acute cystitis to produce hemorrhage over so long a period. This leaves, then, as a possible cause, nephritis, renal tumor or stone,

genito-urinary tuberculosis and malignant disease or stone in the bladder, and I know of no method of making an absolutely positive diagnosis without the aid of the cystoscope.

Without its use we might, by a still further analysis, rule out with considerable certainty a renal origin and reduce it to a question of malignancy or stone in the bladder.

Acute nephritis, in the absence of infection or poisoning, is practically never seen at the age of this patient. That it is not a chronic nephritis we can be less certain, as the blood pressure (165) is suggestive, and we know that hemorrhage does occur in chronic nephritis suddenly and unexpectedly as "a bolt from the blue," being the first symptom sometimes to attract our attention, but in a case covering this period of years we should certainly expect some enlargement of the heart, and as further evidence against it, the urine was not what we should expect in either the acute or chronic form.

Genito-urinary tuberculosis remains a possibility, but it is exceedingly rare at this patient's time of life, and we should not expect the blood so constantly in such large amounts, while on the other hand we should expect much more pus. Furthermore, she has no temperature and the tuberculin reaction is negative. If she had a new growth in the kidney we should expect it to be palpable before this time. As against the diagnosis of kidney stone, the X-ray was negative, and while this is not positive evidence, we know that the large stone is seldom missed, and the small one, which is frequently missed, quite as frequently causes pain, and she has had no pain.

So, then, if our deductions are correct up to this point, we have left only bladder stone and malignant disease, and of the two malignant growth seems much more probable, for I have never known a case with stone in the bladder to experience so little discomfort as this woman has apparently suffered.

The cystoscope verified our diagnosis of malignancy by revealing multiple, pedunculated, papillomatous growths, undergoing malignant degeneration. Infiltration of the bladder wall was so extensive that any operative interference was entirely out of the question. The woman continued to fail and died seven months later.

CASE IV.

Seen in consultation and from her attending physician I obtained the following history:

Woman—28; married ten years; three children. Family and personal history, negative. Three previous pregnancies, normal; now between seven and eight months pregnant with fourth child. On February 4, (four days previous) when arising in the morning was suddenly seized with nausea and vomiting and severe cramping, abdominal pain, which seemed worse on right side; was faint and dizzy and had to return to bed. Hot fomentations seemed to afford some relief, but about an hour later had a severe chill and sent for her physician. On his arrival four hours after the attack began her temperature was 103 F., pulse 124, respiration 30. Had vomited three times, bowels had been moved by enema. Abdominal wall showed marked resistance on both sides, more marked on the right. He made a diagnosis of acute appendicitis, but in view of the stage of her pregnancy, advised temporizing with it, and accordingly gave a hypodermic of $\frac{1}{4}$ gr. morphia, ordered absolute rest in bed, with total abstinence from food and drink. In the afternoon, four or five hours later, he found her temperature 104, pulse 136, and had again vomited copiously.

In view of the fact that she was getting worse very rapidly he advised appendectomy, which was done about 5 p. m.

The following day (February 5) pain seemed less severe but constant, no vomiting, no chills, urination very frequent, temperature 100 to 101.5, pulse 100 to 112. February 6 temperature varied from 101 to 104, pulse 110 to 130, pain constant though not severe, two moderately severe chills, persistent nausea with some vomiting, desire to urinate almost constant. February 7 temperature 100 to 104.5, pulse 125 to 145, nausea and vomiting continued, as was the pain, several slight chills, with some sweating, but the discomfort in the bladder was the most troublesome symptom. On this day the urine was for the first time examined and found to contain a quantity of pus.

On the morning of the 8th, when I saw her, she looked markedly septic, had a temperature of 104.5, pulse 144, and all other symptoms con-

tinued. Operation wound in good condition, but abdomen was so distended that together with the pregnant uterus made palpation entirely negative. Blood examination showed red cells 4,000,000, white 23,000, polynuclears 92 per cent, no plasmodia. Urine, sp. gr. 1016, acid; trace albumen; no sugar, no bile, microscopically no blood cells, a few granular casts, and many pus cells. Later in the day a cystoscopic examination (which was possible only after cocainizing the bladder) showed a moderately severe cystitis, clear urine coming in normal spurts from the left ureter, and cloudy, turbid urine, slowly dribbling from the right ureteral opening, which appeared somewhat swollen and congested. With considerable difficulty—owing to pressure from the enlarged uterus—I finally succeeded in catheterizing the right ureter and evacuated from the kidney pelvis 80 c. c. of a very foul smelling mixture of urine and pus. I then irrigated the pelvis with warm boric acid solution, and followed with one ounce of a 25 per cent solution of argyrol, which I allowed to remain. Hexamethelene in ten-grain doses was ordered four times daily with copious draughts of water, also daily irrigations of the bladder. The following day there was complete relief from pain, temperature dropped to 100, pulse to 110, no vomiting or nausea, and no more chills. She continued about the same for four days, when on February 12 she had another rise of temperature to 102.5. I therefore again irrigated the right pelvis and again allowed the argyrol solution to remain. This time, however, it would only hold 20 c. c., without causing pain. Following this the temperature promptly dropped to normal, and all other symptoms disappeared.

Unfortunately, no culture of the organism was made, but there is probably no doubt that the infection was due to the colon bacillus. The woman made a good recovery and was eventually delivered of a healthy baby, but she unfortunately developed a large ventral hernia at the site of the incision.

The diagnosis in this case was of course an acute pyelitis of pregnancy instead of appendicitis. The differential diagnosis of these two conditions, however, is not always so easily made

as might appear on paper. The attack in each is usually sudden and accompanied by nausea and vomiting, with general abdominal pain, a rather sharp rise in temperature, and rapid pulse. The leucocytosis is usually sharp but does not help us to distinguish one from the other. Furthermore, while the pyelitis may occur in either kidney, or be bilateral, it is more frequently seen in the right. The books tell us that in pyelitis a tumor is usually *easily* palpated. This may be true in the case of the men who write the books, but in my experience, which I admit has been limited, I have never been able—owing to the resistance of the overlying muscles and the size of the uterus—to satisfy myself beyond reasonable doubt as to existence of a tumor. These points I have observed, that the pain in a right sided pyelitis is usually higher than in the ordinary appendix case, that the location of extreme tenderness is not exactly at McBurney's point, that the lumbar muscles are always rigid in pyelitis, and may or may not be in appendicitis, that in pyelitis there is a point of exquisite tenderness at the costo-vertebral angle, that frequency of urination is invariably present in pyelitis and that symptoms of cystitis usually supervene in from 24 to 72 hours. Frequency of urination occasionally occurs as a symptom in appendicitis, but is not accompanied by cystitis; furthermore, it usually comes in the cases where the appendix lies partly or entirely over the pelvic brim, in which case the pain is lower down. While remembering this we should also remember that occasionally all the pain of a pyelitis is referred to the bladder.

The above case emphasizes the importance of an examination of the urine before operating for acute appendicitis, especially in a pregnant woman.

The cases reported above are in no way remarkable, but are likely to occur any day to any man in the active practice of medicine. They will, I hope, serve to bear out my assertion that the cystoscope can be of service to any of us in our daily work, even though we are not experts, but limited to a practical working knowledge of a few of its many uses.—Bulletin Harris County (Texas) Medical Society.

ENGLISH TRANSLATION OF THE SECONDARY EFFECTS OF SALVARSAN.*

BY

PROF. DR. ERNEST FINGER.

Gentlemen:—

Allow me, above all, to express my sincerest thanks to your presidency for having given me, a guest, the privilege of presenting to you my point of view, as of one who makes a special study of syphilis, upon a question which most vividly interests the syphilitic specialist, also of taking part in this discussion. I cannot begin my statements without repeating to his excellency, Dr. Ehrlich, that admiration which during the last year, he has heard again and again from every side; for I from my own experience, most highly admire his work, a work which has been accomplished, not empirically, but through the conscientious, systematic research of many years. This admiration for him, will be in no degree lessened if, in the course of my remarks, I shall unfortunately, have to take the position, that Ehrlich's magnificent work, as every work of man, is not free from defects.

So far I have administered Salvarsan in my clinic to more than 500 patients. My use of it has been in the clinic exclusively for I have not yet made an application of it in my private practice. Until December, 1910, as long as the remedy was not on the market, I refused its application outside the clinic, as I considered the use of a remedy, which was not obtainable by all physicians, as an unfair competition, and one unworthy of our profession. After the remedy was commercialized, unpleasant experiences which I had, restrained me from recommending it for general use. I am of the opinion, that only clinical observation, namely, that in a hospital can interest us here, for only the observation of a patient by several physicians simultaneously guarantees the necessary objectiveness. Conclusions, when reached by a physician in his private practice are open to doubt, for he may have been unintentionally led astray by autosuggestion. Moreover, the material in a

hospital is more accessible for continuous observation than that in private practice.

The original expectation of a "Therapia Magna Sterilisians" not being fulfilled, I had to find out the extent of the efficacy of the remedy, and, since a combination of Salvarsan with the old approved remedies, mercury and iodine, would only conceal the true value of Salvarsan, I have used it, so far, alone.

Concerning the excellent symptomatic effects of Salvarsan, the judgment is so unanimous that I need not say anything further about it but can turn at once to my subject, "The Secondary Effects of Salvarsan," especially those with reference to the nervous system. I wish to emphasize that these symptoms, which I intend to discuss appear the same, regardless of the method of the remedy's application. Lately I have administered it only by intravenous injections, according to Ehrlich's recommendation.

In order to arrive at an understanding of the secondary effects of Salvarsan, according to my opinion, it is necessary to observe all its manifestations simultaneously, and to compare them with each other. Then we see, to be sure, in a minority of cases, the organism reacts hardly, or not at all following the subcutaneous and intravenous injection of the remedy. But in a majority of cases, immediately following the injection, appear symptoms which in clinical form, as well as intensity, are subjected to very considerable oscillations, but nevertheless show much that is typical. To these symptoms belong rigor, fever up to 40° C. and over, general indisposition, prostration, headache, vertigo, glittering before the eyes, nausea, vomiting, colics and diarrhea, icterus, loss of appetite, acceleration of pulse, oppression of the heart, dryness and scratching in the throat and pharynx, dyspnea, psychical and motor restlessness, feeling of fear, tremor of the knees, urinary disturbances, temporary paralysis, albuminuria, cylindruria, profuse sweating, conjunctivitis, salivation with salty taste in the mouth, urticaria, erythema, herpes zoster, and temporary melanosis.

In another small group of cases the clinical picture is somewhat different. Soon after the injection, or immediately after in some cases, the following symptoms appear: edema and cyanosis of the face, dimness of consciousness, vomiting, diarrhea, dyspnea, spasm of the diaphragm, tonic and clonic contractions of the muscles of the extremities and severe collapse. The intensity of

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this clinical picture as mentioned above, is exceedingly variable, and is considered by the majority of authors, with whom I agree, to be an acute arsenical intoxication. Only Neisser and Kuznitzky consider these symptoms, "as the manifestation of the direct influence of arsenobenzol upon the spirochaetes," that is to say, a "general specific reaction upon the spirochaetes, causing the destruction of a great number, and the setting free of endotoxines." I myself, cannot agree with this opinion. On the one hand, the clinical picture, the symptoms of the stomach and intestinal canal, heart, skin, and mucous membrane, show too plainly the characteristics of acute arsenical poisoning; on the other hand, it varies, as Géronne emphasizes, in a certain proportion to the height of the dose. However, in consequence of the intensity of the toxic symptoms, several deaths have been observed, among them are the cases of Doblin, Schottmüller, Jorgensen and Hoffman, in which the autopsies proved arsenical poisoning. A case belonging to this class occurred with us in Vienna, the history of which together with the report of the autopsy, I owe to the kindness of Hofrat Prof. Weichselbaum. We had to deal with a patient suffering from gummous ulcers of the larynx, who received an intramuscular injection of Salvarsan, and a month later, when the ulcers had for the most part cicatrized, an intravenous one. A few hours later the patient had dyspnea, and suffocation, to which he succumbed 18 hours after the injection, in spite of tracheotomy and artificial breathing. The autopsy showed stenosis of the larynx, following the cicatrices resulting from gummous syphilis, a syphilitic ulcer on the right lateral wall of the trachea immediately below the wound of the tracheotomy which was beginning to cicatrize, gummae in the liver, acute enteritis with edematous swelling of the mucous membrane, and punctiform hemorrhages, enlarged kidneys which were dark reddish brown, necrosis in both glutei muscles following the first Salvarsan injection, and edema of the brain. The histological findings in the kidneys were: parenchymatous degeneration with severe swelling and beginning necrosis of the epithelium, especially in the proximal convoluted tubules, severe hyperemia and dilatation of the blood vessels. The diagnosis of the pathologist is acute arsenical intoxication, as no other cause of death could be found. However, similar symptoms following the injection have also

occurred in the treatment of non-syphilitics with Salvarsan, as in cases of psoriasis and leprosy, for which Neisser's explanation cannot be of any value.

Lately Wechselmann tried to explain these symptoms following the injection, through the circumstance that the water which is used for the intravenous injections, or respectively speaking, for the preparation of the physiological salt solution, contains numerous micro-organisms which may be destroyed through sterilization, but lixiviated by the water-furnish toxic substances. As far as our cases are concerned I cannot agree with this explanation of Wechselmann. The water used by us does no more stay "for weeks in factories and pharmacies," than our physiological salt solution contains "crumbs of bread." The distilled water is always freshly prepared in our laboratory, collected sterile, and the stock is always used up after a few days. It is even before sterilization—as we have convinced ourselves—almost free from germs; besides intravenous infusions of physiological salt solutions, which have been prepared in quantities up to a litre, and with water of the same origin for other indications in our clinic and other clinics of the "Allgemeine Krankenhaus," never were followed by any analogous symptoms, as answers to inquiries upon this special point addressed to other doctors in these clinics, have assured us.

Moreover, analogous symptoms also occur in case of intramuscular and subcutaneous injections of Salvarsan in which the water cuts no figure; besides, patients injected with the same solution do not universally show the symptoms mentioned above.

Simultaneously with these symptoms of reaction, and also in cases where these symptoms are lacking occurs at the individual manifestations of syphilis, the primary affection or the exanthem, a peculiar symptom, which we specialists of syphilis call "Jarisch-Herxheimer Reaction." This symptom may be compared to the reaction of tubercular foci after the injection of tuberculin. The individual foci become intensely red, edematous, more succulent and prominent, and even an exanthem which was not visible clinically until then, can appear a few hours after the injection, and remain permanent.

However, so far, no one has given attention to a principal difference between the effects of

mercury and Salvarsan. Mercury, so far as we know, causes this reaction only in pathological processes of a syphilitic nature, and its intensity is dependent upon the number of spirochaetes in the syphilitic focus, namely, it is less in cases of late foci than in those of recent luetic ones. Then the supposition seems justified that the endotoxines, which are freed from the bodies of the destroyed spirochaetes, cause the inflammatory reaction.

Salvarsan, however, produces this reaction in the eruptions of both old and freshly acquired syphilis, and with equal intensity, but it also produces this reaction in cases of pathological foci of non-syphilitic diseases;—for instance, psoriasis vulgaris, lichen ruber, and lupus vulgaris. Consequently the specific effect peculiar to mercury is absent, and the question is open as to whether this reaction of syphilitic and

symptoms, and who shows severe nervous disturbances a few weeks after the injection. In December of last year I called the first attention to these symptoms. My assistant, Mucha, recently reported in the *Vienna Clinical Weekly*, over 47 cases of "Nervous Relapses" in about 500 patients treated with Salvarsan. I can refer you to the publication.

Ehrlich has placed before the Neurological Congress at Frankfurt statistics which are to prove the frequency of Nervous Relapses, or respectively speaking, their relative rarity (0.8%) and in the discussion he referred to the number of relapses in my clinic which is alleged to be extraordinarily large, compared to other observations. I cannot accept the correctness of these statistics, or the deductions drawn from them. May I be permitted to quote from the table only the following statements:

Author	Cases treated	Nervous Relapses	%
Finger	500	44	9.
Herxheimer	900	9	1.
Weintraub	1500	13	0.9
Wechselmann	2800	10 (+ 2 Herxheimer-Reaction)	0.37

other infiltrations may not be traced back to that effect of the arsenic, which in greater quantities causes increased decay of the tissue elements, since, as is emphasized by Hans Horst Mayer and Gottlieb the destructive effect of the arsenic goes hand in hand with that effect which propagates new tissue growth in most cases. These two effects depend upon the individual resistance and vital force of the different cells. To be sure the rapid increase of weight, which is not seldom, depends doubtless upon the effect of the arsenic.

And now I wish to speak about those conspicuous symptoms, which nowadays stand as "Nervous Relapses" ("Neurorezidive"), and are now in the foreground of our interest. These are those of a patient who has been treated with Salvarsan because of any syphilitic

Now Zimmern, who collected Herxheimer's material (*Berlin Clinical Weekly*, No. 34, 1911) states, that at Herxheimer's Clinic, among 900 cases treated, only 125 could be continually observed, among which were 9 "Nervous Relapses"; consequently he estimates the frequency of "Nervous Relapses" to be $7\frac{1}{2}\%$.

Géronne and Gutmann (*Berlin Clinical Weekly*, No. 11, 1911), who reported the nervous relapses at Weintraub's clinic, stated the number of their continued observation to be about 300 cases, and they say: "If now, in about 300 cases of syphilis treated with Salvarsan, which we may use in our statistics, they having been long enough observed, we have seen 13 Nervous Relapses, and if furthermore, these affections mostly appear as soon as 4 to 5 months after the infection, and 6 to 8 weeks

after the Salvarsan injection, then it is absolutely clear that we have to deal with a new proposition in the pathology of syphilis, which must be associated with the Salvarsan treatment." Consequently, from these statements of Weintraub's material, there is a 4.3% of Nervous Relapses.

Wechselmann (Berlin-Otological Society, February 17th, 1911) speaks of "a whole series of Nervous Relapses of all sorts of cranial nerves," while, in his answer to the circular note of the Medical Clinic (No. 45, 1910), he admitted to have reexamined only a part of the patients treated by him. All these are statements which should have been commented upon in giving objective statistics.

If I now consider my own statistics, which state 44 Nervous Relapses among 520 cases, and do not include 3 cases (2 cases Pick-Zumbusch, and one case Zechmeister) which, although observed by us, do not belong to our material, a conspicuous accordance with Herxheimer's material is the result.

But the statements of Zimmern, with only 125 cases being continually observed, out of 1,000 cases, and Géronne and Gutmann, who out of 1,500 cases, subjected to continued observation about 300, only prove what I know to be a fact in other places, namely, that numerous observers were able to watch only a small number of their patients sufficiently long, because of different circumstances, for instance patients coming and going, among whom are a great number of strangers applying for treatment, leave the city soon after the injection, in this way making a treatment impossible. Consequently I come to the conclusion, that the relatively greater number of Nervous Relapses which we have seen, are, above all, connected with the circumstance that we have been fortunate enough to watch 75% of our patients continually, from the beginning of the treatment until the present time.

As regards the time of the appearance of these symptoms, the statement that they always occur during the first months after the infection, namely, during the time in which the organism is invaded by the greatest number of spirochaetes, is not to be taken literally. This is often but not always the case. For instance I wish to cite four of my cases, in two of which the Nervous Relapses were general symptoms,

headache, vertigo, severe forgetfulness, in the other two acoustic disturbances were present, although the patients were treated in the primary stage of syphilis, and showed only a primary affection and multiple glandular swellings, and, although the age of the syphilis (5-6 weeks after the infection) as well as the negative Wasserman-reaction, speak against a strong dissemination of the virus. In my cases the Nervous Relapses occurred most frequently, four (10 cases), five (7 cases), and eight (8 cases) months after the infection; on the other hand, among my cases Nervous Relapses occurred in older ones; four cases one year old, one case two, one six, and one twelve years old, consequently of periods in which it cannot be the question of a strong dissemination of the virus, but on the contrary, in which the latter appears to be limited to small local foci.

As far as the clinical pictures which these patients show is concerned, they are, properly speaking so manifold, that the term Nervous Relapses does not sufficiently characterize the symptoms.

For instance, we observed in a group of seven cases, more general symptoms, disturbances of nutrition, faintness, exhaustion, headache, vertigo, and especially conspicuous, extreme forgetfulness; these symptoms did not disappear after the antiluetic treatment. The above symptoms were particularly conspicuous in the case of a pastry-cook apprentice, who five weeks after two intravenous Salvarsan injections, forgot all his cooking receipts; collapsed into an apathetic, depressed condition with loss of memory. These did not improve even after he was treated with 30 inunctions of 5.0 Ung. Cinereum.

The number of acoustic disturbances was very great. We observed 18 cases among which were two patients who, as mentioned above, were still in the primary stage of syphilis. In five of these 18 cases, the acoustic affection had the character of a Herxheimer reaction, i. e. it appeared immediately after the injection, but disappeared spontaneously soon afterwards. Of the remaining 13 cases, the affection disappeared in 8 cases under the antisiphilitic treatment, while in 5 cases, severe disturbance of the ear remained permanent.

We observed six cases of monoplegia of other cranial nerves, three affecting the facialis, two

the abducens, and one the motor oculi. All cases were cured, four spontaneously; three of these were examined afterwards, two of which showed arsenic in the urine.

Conspicuous are three cases of epileptiform attacks. These attacks appeared a few weeks after the injection, otherwise the nervous systems were perfectly intact. In two cases they apparently disappeared spontaneously, while in the third case, symptoms of a polyneuritis cerebri followed.

After the Salvarsan injection in two syphilitic cases of six and twelve years' duration, the symptomatic picture of spastic spinal paralysis was developed rather acutely. One of these showed a distinct improvement with mercury and iodide treatment, while the other became much worse after the continuation of the Salvarsan therapy.

In five cases of optic neuritis, one was complicated by paresis of the motor oculi and facialis nerves; the optical neuritis was cured by immediate, energetic antiluetic therapy; however, the motor oculi paresis remained. In a second case, a bilateral neuritis of the optic nerve, in spite of various kinds of treatment, developed into atrophy with marked diminution of the field of vision. The following case also ran a peculiar course; a young girl received two intravenous Salvarsan injections because of freshly acquired syphilis; two months later, severe iridocyclitis of right eye; repeated injection of Salvarsan intravenously; the iridocyclitis of right eye improved, but an optic neuritis developed in the left; further intravenous injection of Salvarsan, after which appeared an optic neuritis of the right eye that still remains.

In the case of a female patient, who, because of the relapse of syphilis of six months, received Salvarsan intravenously, there developed two months later, an optic neuritis of the left eye and, in spite of six injections with salicylate of mercury, also in the right eye. Headache, vertigo, and finally hemiplegia of the right side with aphasia appeared, in spite of continued treatment with mercury and iodine. Two Salvarsan injections produced an improvement; however, permanent, severe disturbances of mobility, speech and intellect remained.

Another patient having freshly acquired syphilis received two Salvarsan injections;

iridocyclitis and acoustic disturbances appeared six weeks later. After a further Salvarsan injection these symptoms disappeared, to be sure, but the patient was in a pitiable condition; headache, vertigo, and uncontrollable vomiting, causing extreme emaciation; five weeks after this third Salvarsan injection the patient had an apoplectic attack and died. The autopsy showed several larger and smaller hemorrhagic foci of softening and thrombosis of the vessels of the cerebral cortex, acute meningitis of the convexity as well as the base of the brain, and syphilitic arteritis of the arteries of the base.

Beyond doubt all these symptoms called "Nervous Relapses" are connected with the Salvarsan treatment. This is proved by the frequency of their occurrence in cases treated with Salvarsan, and by the typical regularity of the appearance of the symptoms, from 6 to 8 weeks after the Salvarsan treatment. The fact of this connection cannot be doubted even though all the symptoms mentioned, at times also appear when patients are treated with mercury, or receive no treatment at all. Their frequent and early occurrences in such great numbers, is an absolutely new proposition. This will be corroborated by every experienced specialist in syphilis. In 1885 I was the first following Neisser's example to introduce in Austria the extended intermittent treatment of syphilis, and through which I had the opportunity to treat and observe systematically, thousands of syphilitics for two to three years following the infection. Consequently I am able to estimate the rarity of these symptoms based upon my own experiences and not upon "Correspondence and Medical Literature," as Mr. Benario does. So, for instance, during the last year, in which naturally these symptoms were observed with more attention, we had among 500 cases treated with Salvarsan, 44 Nervous Relapses, compared to 5 Nervous Relapses in four times as many cases treated with mercury and iodine, among which the fresh secondary stage was the most frequent.

When Mr. Benario distributed two tables of statistics at the Frankfurt Congress of Neurologists, one on "Nervous Relapses after Salvarsan," the other on "Nervous Relapses after Mercury treatment," both "collected from the same sources, Medical Literature and corre-

spondence, and covering the same periods of time," we cannot attribute any value to that sort of statistics; for, although Mr. Benario knows, perhaps, to how large a number of cases treated with Salvarsan, the 194 Nervous Relapses refer, he does not know to how many cases of syphilis, the 122 Nervous Relapses after mercury treatment refer. Yet, this is the most important thing, if one wants to prove that Nervous Relapses are not more frequent following Salvarsan, than those following mercury.

Now, if one compares with the above, statistics, such, as for instance Mauriac's, one arrives at an utterly false conclusion. In one place in his text book Mauriac reports that out of 168 cases of cerebral syphilis, 53 occurred in the first year after the infection, but he does not state to how many cases of syphilis these 168 cases refer. However, a judgment, which permits an estimation, is obtained by considering the fact that Mauriac published these statistics in 1890, i. e. after nearly 30 years' experience as a clinician with material of more than 1,000 syphilitics a year. At another place in his book he states the frequency of syphilitic nervous diseases to be 1.7%; therefore the number 168 refers to 10,000 syphilitics. However in 500 cases of syphilitics treated with Salvarsan, I have seen in one year as many early cases of syphilis of the nervous system, as Mauriac had the opportunity to observe among many thousands of patients in 30 years' experience.

I cannot agree with Ehrlich's explanation of these symptoms. His conception is that we have to deal with isolated spirochaetes in unfavorable localities; for instance, in canaliculi of a bone, with complete sterilization of the remaining organism. Especially is this supposition of the almost complete sterilization of the organism not proved by anything, but, on the contrary it is refuted through our observation of 44 patients; of these 44, so far twelve, either after or simultaneously with the nervous symptoms have shown very extensive relapses of the skin and the mucous membrane. Also the supposition of an isolated nervous affection in a canaliculus of a bone cannot longer be maintained. The clinical picture, the transition of the disease upon the adjoining nerves of the same side, the accompanying meningeal symptoms, the occurrence of hemiplegia, as in two

of our cases, result of the post mortem in one, seem to corroborate the fact that we have to deal with the well known proteus-like picture of cerebral syphilis on the base of a "Heubner" arteritis, which latter, although a rare occurrence, complicates the course of a newly acquired syphilis. Now the cerebral syphilis alone offers a very unfavorable prognosis. According to Fournier, of 100 cases, 22 are cured, 19 die, and 59 remain in a chronic condition with permanent disturbances. Consequently I believe that the prognosis of patients who once suffered from nervous relapses, even though these relapses are cured, is not too favorable. My opinion is strengthened because lately I have observed in several cases the reappearance of apparently cured Nervous Relapses. That we have to deal in the majority of cases with cerebral syphilis is also proved by the success of the antiluetic therapy; and in this connection I should like to say that the Nervous Relapses following Salvarsan therapy, do not react so promptly with other antiluetic remedies as otherwise, especially Heubner's form of cerebral syphilis usually does.

The undoubted frequency of these symptoms of patients treated with Salvarsan can be traced back only to Salvarsan. As, according to Hans Horst Meyer and Gottlieb, all symptoms of the chronic arsenical intoxication are to be traced back to a primary poisoning of the capillary vessels, this intoxication is apt to render those places less resistant, which then become the point of attack for the syphilitic virus.

But I should like to call attention to another clinical experience which we had.

Two patients, apparently well, and so proven by clinical examination, a few weeks after a Salvarsan treatment, fell ill with severe cerebral affections, which caused their death. The autopsy showed in both cases quite freshly acquired tubercular basilar meningitis, starting from softened bronchial glands. As Herxheimer was able to observe in a case the softening of a tubercular cervical gland directly under the influence of Salvarsan, so it is not out of reason to suppose that a connection also exists here; likewise in another case in which a child of seven years who suffered from an old purulent otitis media, received a Salvarsan injection, and developed an acute purulent lepto meningitis four weeks later and died.

Whether or not the conception of the Nervous Relapses as syphilitic relapses is correct for all cases, without exception, I, for the present time, leave the question open.

Consequently we see that Salvarsan treatment, it is true, favorably influences the luetic manifestations of the skin and mucous membrane, but it also has an unfavorable effect upon the course of syphilis by frequently and early provoking diseases of the nervous system. If now, Wechselmann and Haike, who admit this indirect influence of Salvarsan, as well as Mat-tauschek, console themselves in the fact that this happens only in places where the spirochaetes are collected, "which consequently would produce the same symptoms at a later time without the stimulation of the arsenobenzol," this consolation is without foundation if one considers the vast difference it makes to a patient whether he becomes ill with severe nervous affections in earlier or in later years; and if one further considers that perhaps by a systematic treatment with mercury, the spirochaetes, which are collected at these places, could have been destroyed and the patient thereby protected altogether from the later "Nervous Relapses."

The "Nervous Relapses" of our patients were distributed in the following manner: of 102 patients in the primary stage, 4, (4%); of 322 patients in the secondary stage 39, (12%), and of 56 patients in the tertiary stage 2 (4%); so one may come to the conclusion that the secondary stage, especially the early one, is not suited for Salvarsan treatment.

CHEAP DOCTORING.

Cheap doctoring, says the *Pharmaceutical Journal* (England), like everything else that is cheap, is apt to be nasty—sometimes very nasty. Those who doubt this should read the signed letter of a medical man which appeared in the *Times* of last Saturday. Therein it is related that a doctor with a large contract practice had a surgery in which were five casks, each with a tap and an open top for ready filling. One contained solution of Epsom salts; another, infusion of quassia; a third, decoction of logwood; a fourth, soapy water; and a fifth, general rins-

ings. Other medicines (!) had he none. All his patients were dosed from one of those five! Asked by a brother practitioner how his conscience could allow him to trifle with the lives of men he said: "Well, you see, it is a simple case of 'diamond cut diamond'; the clubs think they are doing me, and I do them instead—that's fair." Another had nothing in his surgery but rows of showy empty bottles on the shelves and three or four cheap and almost worthless drugs in brown paper bags for all his club patients. The correspondent also relates the following incident: "A club doctor was dispensing in his surgery when the following dialogue took place with his temporary assistant: Assistant—What shall I give this man? Doctor—Oh! some little thing—it doesn't matter. Assistant—But what's the matter with the man? Doctor—I don't know; I'd no time to make a diagnosis. Whereupon he shook out a few grains of carbonate of soda into the palm of his hand and gave it to the assistant. It was put into the bottle, which the messenger had brought, the bottle filled with water, labeled, not corked—and that was all." Doctors in a hurry might with advantage adapt to their private practices a method which is said to have been practiced in our hospitals a good many years ago. In his interesting "History of the London Hospital," Mr. E. W. Morris tells us that there was a time when a receiving-room officer would enter the room and call out, "All with coughs stand up"; "Now all with stomach-ache stand up." Mr. Morris also gives an instance of a patient who diagnosed her own case: An old woman who obviously had never been in a hospital before enters the waiting room; after glancing nervously around the crowded room, the dear old soul appeals anxiously to the sister-in-charge to know, "Where do yer sit for tumors?" A little thought, if one had time to think, might suggest other time-saving devices. The object of the *Times* correspondent in turning the limelight on doctors' surgeries is to show what may happen under the insurance scheme. It is not for us to quarrel with his methods, for he has published some excellent reasons why doctors should not dispense, not the least weighty of which is that if they ceased to dispense they would have "time to make a diagnosis." It is possible that examples of the kind mentioned could be added to considerably.

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EDITORIALS.

HISTORY APROPOS PHARYNGEAL INSUFFLATION.

Certain procedures, which now occupy a definite place in medicine, have gone through quite a series of cycles, before becoming thus established. Some of these began their career in antiquity. Such an apparently recent thing as S. J. Meltzer's work on resuscitation of presumably dead animals (Pharyngeal Insufflation. A Simple Method of Artificial Respiration, *Journal Amer. Med. Association*, May 5th, 1912) has been tried over a hundred years ago, and by no less a personage than Jno. Hunter. The following is verbatim from Jno. Abernethy's lectures. (Lectures on Anatomy, Surgery and Pathology, including observations on the nature and treatment of local diseases; delivered at St. Bartholomew's Hospital by Jno. Abernethy, F. R. S., Vol II, Boston, Benjamin Perkins & Co., 1828):

"There is a curious thing with respect to the heart, showing its sympathies with the lungs. This is one of the curious experiments that have

been made. If an animal be pithed, the medulla spinalis divided high up, he dies, because the lungs want energy, and the diaphragmatic nerve has its function abolished, and he dies for want of breath. But let him be pithed, and respiration kept up by mechanical means, the inflation kept up, life will go on. Now this is the experiment of John Hunter, on inventing a pair of bellows for drowned animals. He says, the nearest dependence of the heart is upon the lungs, for 'when I left off blowing my bellows,' said John, 'the heart left off its action, and when I began again to blow into the lungs, the heart recovered its power of action, at first feebly, but after a little, more strongly.' I use the words exactly as Mr. Hunter uttered them."

In a series of several human beings, and fifteen dogs, in which Anton von Haen (Royal physician to the Royal Krankenhause at Vienna—*Therapeutic Measures* Bd. vii. Editor's notes by Mr. D. Ernest Platner, professor at Leipsic, 1783) tried the same experiments (July to August, 1769) the results were uniformly unsuccessful but it must be mentioned that all the experiments of von Haen were conducted on drowned subjects.

STATE BOARD STATISTICS FOR 1911.

The last number of the *Journal of the American Medical Association*, May 25th, contains the State Boards' statistics for 1911. These figures are extremely interesting as showing the actual success of the graduates of one hundred and twenty-eight medical colleges of the country, before the various State Board examinations. These tables show that of the one hundred and twenty-eight medical colleges of the country, forty-six sent fifty or more candidates before the various boards for examination. The standing of the University of Vermont as shown by these figures, is naturally of interest to our readers. An analysis of the tables shows that sixty-one

applicants from this college appeared for examination in seven states, and that of this number three and three-tenths per cent failed to pass. Of the forty-six colleges mentioned above, only seven had a percentage as good or better than this, the average percentage of the whole number being twelve and one-tenth per cent. Another table (Table H) includes the colleges (forty-seven in all) having less than ten per cent of failures for State Boards in 1911. The University of Vermont appears in this table with its three and three-tenths per cent. An analysis of this table shows that there are twenty-four colleges having a percentage as good or better than this figure, but that only four (Johns Hopkins, Harvard, Medico-Chirurgical, Philadelphia, University of Pittsburg) of these sent as many applicants up for examination, and that only nineteen in the whole list took this examination in as many states. These results are naturally gratifying to Vermonters and alumni of the University of Vermont in all states.

It would be an interesting study in connection with the progress of medical knowledge to determine whether the advancement in medical knowledge had brought a corresponding increase in confidence in physicians.

The practice of medicine is very materially changed from what it was. Progress in medical knowledge has eliminated much that was found to be worthless and has established principles of treatment based upon scientific investigation of disease. The knowledge of medicine has passed from a condition of mere empiricism and theory to the application of scientific knowledge in regard to disease.

The physician is no longer shrouded in the mythical mystery of the primitive "medicine man" nor is he accorded the veneration that was given the "priest healer" of olden times. Mystery

and Divine Agency in medicine, so far as physicians are concerned, have been replaced by scientific knowledge—the application of known remedial agents to meet known conditions of disease.

What influence if any has this more positive knowledge of disease had on the relation of physicians to their patients? Do people trust physicians as implicitly as they did when medicine was largely a theory and the cause of disease was shrouded in mystery? If they do not what has brought about the change of feeling?

It is true that the practice of medicine to-day is very unlike what it used to be. Preventive medicine has established measures for preserving the public health that may be annoying to individuals and consequently cause unpleasantness between the physician and his patients or their friends—more likely the latter. For instance, I think it is a fair assumption that quarantine regulations are not accepted in the best of spirits by the average patient and physicians are, of course, considered to be directly or indirectly responsible. People are slow to see that as individuals they have any responsibility in preserving the public health or that in safeguarding the public health there is individual protection from disease.

The duty of the physician, however, is to the public as well as to the individual even though the individual should be offended. A century ago physicians won the love and esteem of their people by the ministrations upon disease that they did not know how to prevent, and their kindly sympathy for the sorrow caused by the dispensations of an all wise providence that did not interfere with their individual liberty of prejudice, while today physicians incur widespread criticism and disfavor by enforcing sanitary regulations that save hundreds of lives and prevent untold suffering but which may cause some individual inconvenience.

There are other influences which have arisen to stir up prejudice against physicians. The various cults have exerted every possible influence to disturb the confidence of the public in the work of physicians. There are also a number of organizations composed of disaffected people which have been formed to oppose various health measures because these measures interfered with some personal prejudice they have. They seem to feel that no imprecation is too bad for the measures or their authors—the doctors.

It is not strange that these influences should produce a spirit of distrust among a certain class of people but it does seem strange that intelligent and well informed people should discredit the scientific work that is being done in medicine today by the best trained men of the world.

On the other hand, are physicians doing their part in the changed condition of things? Do they come into the home with as much charity, do they bring as much honest sympathy and enduring friendship as did the large hearted men who practiced medicine under the difficulties that existed a century ago? Or has the positive and scientific knowledge of disease and the treatment of disease transformed the physician of today into the scientist at the expense of the Three Graces?

Has the higher standard of medical education necessitating an increased expenditure of both time and money together with the evidently increasing sentiment among physicians to acquire a financial competency infected the medical profession with a spirit of commercialism? Is the spirit of human kindness being forgotten?

If the medical profession are to have the confidence of the public they must meet their patients in a way to inspire confidence. Physicians come into the family in a time of trouble and anxiety and in addition to professional skill they should have the spirit of charity and kindness,

a spirit that impels them to render help because help is needed. A physician who practices medicine with no other motive than the exchange of fifteen minutes of professional service for two dollars will never win the confidence and esteem of the public.

The scientific advance in the knowledge of medicine is most desirable in every way and most welcome. Physicians cannot have too much scientific knowledge in regard to medicine but they should also have the spirit of charity and human kindness.

Physicians should also consider their financial condition and expect reasonable remuneration for their services but God forbid that the time ever come when the practice of medicine shall become the application of the scientific principles of medicine for revenue only and the physician become an exemplification of professional commercialism who knows nothing of the milk of human kindness.

PREVENTIVE MEDICINE.

Preventive medicine has developed so rapidly and has come to occupy such an important place in the general subject of medicine that it seems to be the logical time for this department of medicine to be considered a part of the work of the general practitioner. The prevention of disease is certainly much more important than the treating of disease.

The work in preventive medicine up to this time, so far as its application is concerned, has been done almost entirely by Boards of Health. The general practitioner has assumed that there was little if anything for him to do until he was sent for. This assumption is not altogether due to the fault of the doctor, it conforms to the popular sentiment and the general custom which has existed for centuries. The condition of medical knowledge at that time made it the function of doctors to give medical services when

they were asked to treat disease, there was no thought of trying to prevent disease.

This sentiment both on the part of the physician and the public is a relic of the period before the cause of any disease had been discovered or the fact that disease could be prevented was known.

From the viewpoint of medical knowledge today this sentiment is as absurd as are many of the ideas of medicine which existed one hundred years ago and which have long since been discarded.

It is not in keeping with the principles of preventive medicine for the physician to be content to treat disease only, it should be his ambition to prevent disease so far as he can, neither is it in keeping with the progressive ideas of modern medicine, for the trained physician to be obliged to wait until someone totally untrained in diagnosis has discovered disease before he can ethically suggest the advisability of treatment or offer his services. It should be the duty of the family physician to have the general oversight of the health of the family and direct treatment when he finds conditions which require it.

It is evident, however, that general regulations for preventing disease must be made and administered by Boards of Health as they are given authority to enforce such measures but there is much that does not come within the province of Boards of Health that should be done by the family physician.

The large majority of people, especially those living outside of the cities, know nothing of the principles of sanitation, they do not appreciate the sources or dangers of pollution of water used for domestic purposes or the dangers to health that come from impure food. The two subjects of pure water and clean milk would furnish a large field for work for physicians, and when the public can be taught the importance of these two things in connection with health,

typhoid fever will practically be a disease of the past and the tremendous percentage of mortality of infants will be decidedly lessened.

How much greater would be the service to the public in the prevention of disease that comes from these two sources only, than the kind of professional services physicians now give in simply treating disease.

In the general medical supervision of the health of the household the physician should look after the condition of each member of the family and direct such treatment as may be required. Trouble with the eyes or ears or throats of children should not be left for the medical inspector of schools to discover, it is a part of the logical work of the family physician. The early recognition of these troubles with proper treatment may save permanent damage to sight or hearing. How many cases of deafness might have been prevented if conditions which caused it had been recognized early and had been given proper treatment.

The importance of the throat, particularly the region of the tonsil, is recognized as a fertile source of infection of cervical adenitis. How much better it would be to have adenoids and infected tonsils looked after before the cervical glands became infected. Tuberculosis must be acquired very largely through nose and throat infection and if the children were kept under observation and these sources of infection were looked after carefully by the family physician or a specialist it would materially reduce the number of cases of tuberculosis.

The number of cases of blindness which might have been prevented are appalling.

Medical supervision of the family, however, is not of service only to the children, there are many chronic diseases in adults whose onset is so insidious that the patient does not become aware that there is any trouble until the disease is far advanced. The family physician should

make such examinations from time to time as are necessary to determine the presence of these diseases, if they exist, long before they would be noticed by the patient. How many cases of carcinoma that now come to the surgeon so far advanced that they are hopeless might have been recognized in time to have been cured if the case had been under the supervision of a physician. How many cases of chronic nephritis and diabetes that now come to the physician too far advanced to be cured might have been arrested if they had been recognized early and given the proper treatment.

These are only a few of the many ways in which the family physician can be of the greatest service if he could be given the medical supervision of the family.

What an illogical thing it is when considered from the viewpoint of health that the physician who is trained in the various ways of preventing disease should be unable to use this knowledge ethically until his services are deemed necessary by someone who has absolutely no knowledge of medicine. In cases of accident or in acute diseases where the symptoms of serious trouble are unmistakable the need of a physician would be apparent to anyone, but in the chronic conditions which form such a large percentage of diseases the symptoms are only to be found by the most careful examination.

We wish to repeat that the ethics or sentiment that relegates a doctor to his office until he is sent for is antique and absurd. It is not in keeping with progressive medicine, it is a dangerous relic of the ethics of the past. Preventive medicine demands that the trained physician should use his best endeavor to prevent disease and that he, not the family, should be the one to recognize the need for medical treatment in all except emergency cases.

Viewed from the standpoint of health there can be no question in regard to the advantages

of medical supervision of the family over the present method of medical service. The practical question is, Is it feasible to have the family physician have the medical supervision of the household? It seems to be perfectly feasible and most practical.

The first question that probably would be asked by the public is, How much would it cost, rather than how much sickness could be prevented?

It is unfortunate that financial questions should be so important in deciding a question of health, but people have become so accustomed to paying a doctor to get them out of trouble instead of paying him to keep them out of trouble that the question of paying a physician when they were well would seem absurd.

Physicians, too, have become so accustomed to associate sickness with their income that they might stop to consider how the preventing of sickness would influence their income.

Strange and absurd as it may seem the financial side of this question must have an important bearing in deciding it.

But this is not a new idea; it has been in general practice in China for a long time. There they pay the physician so long as he keeps them well but if they get sick the physician's pay stops until they are well again.

It may not be bad logic to pay a physician to keep one well instead of paying him when one is sick, but it does not seem necessary in this country to question the honesty of purpose of the physician by stopping his pay when sickness comes. Physicians as a class are as thoroughly interested in the public health as any class of people, yes, more so, it is through them that the large part of the health suggestions and health measures come, and physicians would be as thoroughly interested in trying to improve the conditions of health of the household by medical supervision as they are now in trying to bring

about a cure when they are called to treat disease.

Let us consider the financial side of the question just a little. There are now in this country between five and six hundred people to every physician. The income of the majority of the general practitioners would probably be between \$2,500 and \$5,000. This would mean that to provide such an income each individual would have to pay from \$5 to \$10 per year for all medical services, allowing five hundred people to each physician. But as quite a percentage of physicians are doing special work and as the number of people to each physician is over five hundred, even this small amount would be reduced considerably.

It is evident that medical supervision of the family can be put into general practice without entailing any great expense on the people. Such a supervision would materially lessen sickness and suffering. It would bring the practice of medicine up to the standards outlined by the progress which has been made in medical knowledge. Preventive medicine must become the most important part of the practice of medicine and medical supervision of the family is the next step forward.

NEWS ITEMS.

It is announced that after an unbroken service of forty years as chairman of the Boston Board of Health, Dr. Samuel Holmes Durgin is soon to retire from his official position.

The annual meeting of the Connecticut River Valley Medical Association was held at Bellows Falls May 8th. Dr. A. L. Miner of Bellows Falls was elected president.

Dr. Verne M. Rogers of Quechee, Vt., who has been seriously ill with nervous prostration for several months, has returned from an extended vacation at his former home at Ashland, N. H., to resume practice.

Dr. C. W. Milliken has resigned as resident physician to the Hillsboro County Hospital at

Grasmere, N. H., and intends to practice in Goffstown, N. H.

The annual expense to the State of New York for the care of foreign born insane patients is \$3,450,000.

The Louisiana State Medical Association has urged the State legislature to enact a law to provide for the sterilization of male and female habitual criminals. A number of the members of the legislature have pledged themselves to support such a measure.

The annual meeting of the Franklin County Medical Society was held in St. Albans, May 29th. The sessions were held in Eagles' hall. Following is the program: Arterio-Sclerosis; Its relation to the Intestinal Tract, Dr. John Gibson of St. Albans; Arterio-Sclerosis; Its Relation to the Kidneys and Heart, Dr. C. H. Beecher of Burlington; Old Age Deferred, a review, Dr. H. L. Pierce of Swanton; Dr. J. Reynolds Patton of Fairfield is the president, and Dr. E. A. Hyatt of St. Albans, secretary.

Dr. E. J. Melville of St. Albans, who has been spending three months in Scotland, is expected home this week.

Mrs. J. P. Gifford, wife of Dr. Gifford of Randolph, is in Boston taking a course in bacteriology and other laboratory research work.

Mr. Willis Chandler, who recently died in Randolph, Vt., before his death provided for the equipment of a laboratory for histological and bacteriological work. It is to be a part of the Randolph Sanatorium.

Jacob P. Schaeffer, a graduate of the University of Pennsylvania, has been appointed professor of anatomy at the Yale Medical School.

At the Atlantic City meeting of the American Medical Association, which occurred June 3-7, the following officers were elected: President-elect, Dr. John A. Witherspoon of Tennessee; first vice-president, Dr. Philander A. Harris of New Jersey; second vice-president, Dr. John L. Heffron of New York; third vice-president, Dr. H. M. McClanahan of Nebraska; fourth vice-president, Dr. Harry D. Fry, District of Columbia; secretary, Dr. Alexander R. Craig, re-elected, of Illinois; treasurer, Dr. William Allen Pusey, re-elected, of Illinois. The next meeting will be held at Minneapolis.

On Wednesday, June 26th, the College of Medicine, University of Vermont, graduated forty-six men, this being the entire senior class.

Proceedings have been brought in the courts of New Jersey to test the sterilization law of that state. The law is attacked on constitutional grounds in that it inflicts cruel, inhuman and unusual punishment.

At a joint conference of the School Committee and Board of Health of Boston recently, Dr. Thomas F. Harrington and Dr. James Galvin said that "the real solution in governing disease and sickness among school children lay in increasing the number of school nurses. Dr. Harrington, director of hygienics in the Boston public schools said: "There are many cases where nurses must give minor treatment at school because parents of children are at work, but in every case that treatment is given, nurses should go into the homes and see that the child gets further treatment by the family doctors. This has been the custom." There are eighty doctors caring for the school districts and thirty-four nurses.

AMERICAN MEDICAL EDITORS' ASSOCIATION.

The following papers were presented on June 1st and 3rd at the meeting of the above Society at Marlborough-Blenheim Hotel, Atlantic City, N. J.:

"The Advisability of Newspapers and Magazines Having Medical Editors on their Staffs," by Edgar A. Vander Veer, M. D., Albany, N. Y.; "False Values in the Practice of Medicine," by H. Edwin Lewis, M. D., New York; "Science in Personal Journalism," by T. D. Crothers, M. D., Hartford; "Eugenics in the Medical Magazines," by C. H. Hughes, M. D., St. Louis; "The Province of the Editor in Medical Journalism," by W. B. Snow, M. D., New York; "Commercialism," by C. F. Taylor, M. D., Philadelphia; "Research Work in Life Insurance Medicine," by invitation, Fred'k L. Hoffman, Newark, Statistician Prudential Ins. Co.; "Shifting Medical Conditions Confronting Medical Journalism," by invitation, E. A. Ayers, M. D., Prof. Emeritus Obstetrics, New York Polyclinic; "Medical Journalism from a Disinterested Standpoint," by Albert E. Sterns, M. D., Indianapolis; "What Doctors Read and Write," by Erwin Reissman, M. D., New York; "Independent Medical Journalism and the Task

of the Independent Editor of To-day," by W. J. Robinson, M. D., New York; "Differential Diagnosis between the 'write-up' and an Honest Article on a New Remedy," by invitation, H. S. Baketel, M. D., New York; "The Medical Editor of a Daily Newspaper, his Duties and his Educational Opportunities," by A. S. Burdick, M. D., Chicago; "Medical Expert Testimony," by R. B. H. Gradwohl, M. D., St. Louis; "Book Reviews," by Arnold Snow, M. D., New York; "State Board Examination Questions and Answers in Medical Journals," by Hills Cole, M. D., New York; "Subscription Getting," by G. Strobach, M. D., Cincinnati; "Laboratory Experiments versus Clinical Experience as a method of determining the therapeutic value of a remedy," by John W. Wainwright, M. D., New York; "Anonymous vs. Personal Journalism," by Chas. A. Wingerter, M. D., Wheeling, W. Va.; "Subject to be announced," by W. A. Young, M. D., Toronto, Canada; "How the Medical Press can Cooperate with the Manufacturers for the Proper Introduction of New Materia Medica Science and Brands of the same to Commerce," by invitation, F. E. Stewart, Ph. G., M. D., Prof. of Materia Medica, School of Pharmacy, Medico-Chirurgical College, Philadelphia.

The one hundred and twenty-first annual meeting of the New Hampshire Medical Society was held on May 8th and 9th at Concord, N. H. At the opening session the president's address was delivered by Dr. George W. McGregor. Among the physicians who, as guests of the society, presented papers or participated in discussion at the several sessions were Dr. Howard Lilienthal of New York and Dr. Maurice H. Richardson, Dr. Fred B. Lund and Dr. E. W. Taylor of Boston.

The annual meeting of the Connecticut River Valley Medical Association was held in the Masonic Temple Club, Bellows Falls, Vermont, on Tuesday, May 7th, 1912, with the following program:

Gastric and Duodenal Ulcer, Dr. H. G. Stetson, Greenfield, Mass.; Operative Treatment of Fractures and Report of Cases, Dr. Dudley Carlton, Springfield, Mass.; Sprains, Fractures, Dr. I. J. Prouty, Keene, N. H.; Pneumonia, Dr. L. H. Gillette, Springfield, Vt.; A Case of Renal Calculus with Operation, Dr. W. H. Pierce, Greenfield, Mass.; Report of Cases by Members.

OBITUARY.

George Long Reagan, M. D., University of Vermont, 1865; a member of the Medical Society of the State of Penn., died at his home in Berwick, April 7, from cerebral hemorrhage, aged 76 years.

BOOK REVIEWS.

THE CARE OF THE INSANE AND HOSPITAL MANAGEMENT.
—By Charles Whitney Page, M. D. 154 pages; price prepaid, \$1.00. W. M. Leonard, Publisher. Boston.

This book is written by a man whose wide experience renders him qualified to speak with the authority of one who knows. It goes into all the details of the management of the insane in institutions and should be read by all who are in any way associated with such institutions, superintendents, assistant physicians, trustees, nurses and attendants. The author shows a broad minded sympathy for this class of unfortunates, which together with his thorough knowledge of the problem involved in their care, makes the work specially valuable.

The second edition of Cabot's Differential Diagnosis is simply an amplification of the first. In the author's own words the book is an attempt to study medicine from the point of view of the presenting symptoms (as the physician must always, of course, study an individual case). The plan has three parts. A—to present a list of the common causes of symptoms most often complained of by patients, e. g., the cause of pain in the back, of vomiting, or of hematuria. B—to classify the causes in the order of their frequency as far as possible. C—to illustrate them by case history in which the presenting symptom is followed home until a diagnostic problem and its solution are presented.

DISEASES OF THE GENITO-URINARY ORGANS AND THE KIDNEY.—Third Revised Edition. By Robert H. Greene, M. D., Professor of Genito-Urinary Surgery at the Fordham University, New York; and Harlow Brooks, M. D., Assistant Professor of Clinical Medicine, University and Bellevue Medical College. Octavo of 639 pages, 339 illustrations. Philadelphia and London. W. B. Saunders Company, 1912. Cloth, \$5.00 net; Half Morocco, \$6.50 net.

In the third edition of this work the writers have steadily kept before them their ideal of

practical utility. Written as it is by a physician and surgeon the work avoids the bias into which so many books written from a single viewpoint are apt to fall. It is a very thorough, comprehensive treatment of the subject.

**AN EPITOME OF
CURRENT MEDICAL LITERATURE.****PSYCHOLOGY IN MEDICAL EDUCATION.**

W. A. WHITE, Washington, D. C. (*Journal A. M. A.*, May 11), says that in the past the interest of the physician has been centered on the body and physical ailments. He asks us to take the other point of view and look at the situation from the mental rather than the physical angle. The patient does not consult the physician so much because of the physical pain as because he is mentally ill at ease. Procedures to relieve pain will have their action on the mind, and he gives instances illustrating this point of view. There are patients who develop all sorts of gastro-intestinal disorders on very slight provocation, and whole hosts of neurasthenic patients with all sorts of complaints, to say nothing of hysteria, which is a pure psychosis. These all together form an important group of cases, at present too much neglected in the medical curriculum. The bearing of mental medicine on social problems, such as those presented by the insane and defectives generally, is noticed. He would have the student leaving the medical college appreciate that his future patients are thinking and feeling beings, and that the human mind comports itself much like any of the organs of the body; and he would have him understand the operation of the mental mechanisms and processes resulting from disease. At the same time, he combats the old-fashioned, widely accepted notions that it is necessary to have a full understanding of the so-called normal human mind before commencing to study the diseased mentality. There is no such thing as a normal human mind that has been differentiated so that we can know what it is. It is not, he thinks, reasonable to hold that we must know all about the acting mechanism before it fails in its complex activity and is made simpler by being put out of order. What would we know about physiology but for disease? Are not all our laboratory experiments the production of pathologic conditions? The psychology of the medical school should give a comprehensive idea of the human mind in the large, he says, and it need not confine itself to the so-called normal psychology or to the abnormal psychology to do this. It should, however, be prominently humanistic in its trend and be primarily a psychology of motives rather than of reaction times. If the human mind is looked on as a reacting organism, developing reactions of defense and compensation as the body does to disease, many of the otherwise obscure manifestations of the disordered mind can be cleared up. On account of the lack of proper leading in this respect in the medical profession, the host of charlatans are prospering.

PITUITRIN*

(Pituitary Extract, P. D. & Co.)



*The word Pituitrin identifies the pituitary extract manufactured by Parke, Davis & Co. Registered U. S. Patent Office, No. 76722.

PITUITRIN is undoubtedly one of the most notable additions to the materia medica in the last decade. It has many important uses. This announcement is to emphasize its value in difficult parturition. Expert obstetricians assert that PITUITRIN is without a rival as a corrective of uterine inertia.

Dr. J. Hofbauer, of the Gynecological Clinic of the University of Königsberg, in the *Centralblatt für Gynäkologie*, tells of twelve obstetrical cases in which he used Pituitrin as a means of exciting and aiding labor pains. "In the entire twelve cases the results were remarkable. . . . There were no unfavorable after-effects."

In another issue of the same journal Dr. Otto Fischer, of the Gynecological Clinic of the University of Würzburg, records his experience in fifty cases, showing the wonderful power of Pituitrin in overcoming uterine inertia and obviating the use of instruments in childbirth. He refers to Pituitrin as "a very valuable addition to the materia medica, especially because its principal action pertains to a domain in which there has been a long-felt demand for a dependable medicament."

Dr. Alfred Studeny, in the *Wiener Klinische Wochenschrift*, refers to the use of Pituitrin in a large number of

cases of childbirth at the Moravian lying-in institution at Bruenn. "In summing up our experiences," says Dr. Studeny, "we would designate Pituitrin as the most reliable ecboic agent known at the present time."

In the *Münchener Medizinische Wochenschrift* Dr. Emil Vogt, of the Royal Gynecological Clinic at Dresden, says: "In the second stage of labor the action of Pituitrin is prompt and certain. It serves to accelerate normal deliveries, and may be used to combat secondary insufficiency of labor pains even in cases of narrow pelvis."

Dr. Hans Hermann Schmid, First Assistant of the Obstetrical Clinic of the University of Prague, in the *Gynecologische Rundschau*, declares Pituitrin to be "the only certain and safe ecboic medicament that can be used to advantage in cases in which the forceps or a dilator has heretofore been employed."

PITUITRIN (P. D. & Co.) is an extract of the posterior or infundibular portion of the pituitary gland. As shown in the illustration above, it is offered to the medical profession in one-ounce glass-stoppered bottles and in glaseptic ampoules (ready for immediate hypodermatic injection), each ampoule containing 1 Cc. or 16 minims, which constitutes the usual dose. Practitioners who have not already done so will do well to familiarize themselves with its nature and uses.

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THERAPEUTIC NOTES.

PREPARE THE BABIES FOR HOT WEATHER.—During the month of June it is not a bad plan for the physician to take mental "stock" of the babies under his care, especially such as are bottle-fed, with the general idea of recommending such treatment as will tone up and vitalize those whose nutrition may be below par, so that they may enter the trying summer months in the best possible condition to ward off or withstand the depressing influences of extreme heat or the prostrating effects of the diarrheal disorders of the heated term.

Careful attention to feeding is, of course, a *sine qua non* and the details of the infant's nourishment should be carefully investigated and regulated. But this is not all. Many bottle-fed babies are below standard from a hematologic standpoint. The marasmic anemic baby deserves special attention in the way of building up and restoring a circulating fluid which is deficient in red cells and hemoglobin. In the entire *Materia Medica* there can be found no direct hematic quite as suitable for infants and young children as Pepto-Mangan (Gude). In addition to its distinctly pleasant taste, this hemic tonic is entirely devoid of irritant properties and never disturbs the digestion of the most feeble infant. Being free from astringent action, it does not induce constipation. A few weeks' treatment with appropriate doses of Pepto-Mangan very frequently establishes sufficient resisting power to enable the baby to pass through the hot summer without serious trouble, gastro-intestinal or otherwise.

THE NEGLECTED THERAPY OF CONVALESCENCE.—The physician of education and experience, who keeps in touch with the progress of medicine generally, is well informed as to the treatment of most of the "thousand and one" ills that he is called upon to combat. The diagnosis and treatment of acute conditions as well as the successful management of the more chronic affections are subjects which he is constantly investigating and studying. It so happens, however, that after the dangerous shoals of medical navigation have been successfully negotiated and when the crisis or danger point has been passed, the physician is all too liable to relax his vigilance and to allow the patient to convalesce without sufficient attention to the therapeutic details of this important period. While the feeding of the convalescent is of great importance, the medico-tonic treatment is equally essential, in order to improve the appetite, tone the digestive, assimilative and eliminative functions generally and to hasten the time when the patient shall be once more "upon his feet." Among all of the general reconstituent and supportive measures in the therapy of convalescence, none is more essential than the reconstruction of a blood stream of vital integrity and sufficiency. Pepto-Mangan (Gude) is distinctly valuable in this special field, as it furnishes to the more or less devitalized blood the necessary materials (iron and manganese) in such form as to assure their prompt absorption and appropriation. One especial advantage of administering these hematinics in this form, is that diges-

tive disturbance is avoided and constipation is not induced.

MOUTH DISINFECTION.—There never was a time when so much thought was devoted to the prevention of disease as now. Modern science has shown that true prophylaxis starts with the individual. It is, accordingly, the age of personal hygiene, not the least important detail of which is mouth disinfection.

Among the latest and most effective measures that have been placed at the service of discriminating people for the proper care of the teeth and mouth, REDOX ALKALINE DENTAL CREAM unquestionably stands first. Evolved from the daily experience of one of the country's leading dentists, it embodies every quality essential to cleansing, whitening and preserving the teeth. It is effectively antiseptic, delightfully refreshing and sufficiently alkaline to counteract that most dangerous of mouth conditions, acid fermentation. It is a remedy, par excellence, for relaxed or diseased conditions of the mouth—Pyorrhoea, Rigg's Disease.

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SYPHILITIC CACHEXIA.—In the cachexia of syphilis, particularly during the late months of the disease, Cord. Ext. Ol. Morrhuæ Comp. (Hagee) has proven of much value, and is employed for this purpose in a routine manner by many physicians. Its therapeutic power as a reconstructive in syphilitic cachexia rests upon its well known property of improving bodily nutrition. Cord. Ext. Ol. Morrhuæ Comp. (Hagee) is a blood-maker of high order, a feature that makes it of particular value in syphilitic debility. Its employment will be of much aid to the usually resorted to therapy of syphilis and gratifying results will be noted from its administration.

THE PREVENTION OF DYSMENORRHEA.—How can we prevent dysmenorrhœa? It can be done by keeping the patient under morphine, but this is a barbarous solution of an important problem. It in fact does not solve it. Morphine is inadmissible and improper in these cases. It produces derangement of the secretions and tends to establish a drug habit that will make life a burden. I have long employed a remedy that not only relieves the pain, but produces no habit and is not dangerous. I refer to Dioviburnia. It is a most valuable uterine tonic, antispasmodic and anodyne of exceptional worth. I rely upon this remedy to prevent dysmenorrhœa, which as Professor Davenport truly says is seen in almost all, if not in all, women. I have my patients who suffer with dysmenorrhœa to take Dioviburnia, beginning two days before menstruation is due and persist in it until the period has passed. I give it in doses of one to two teaspoonfuls every three hours throughout this time. When this direction is fol-

lowed, I have found that my patients go through the period without pain. The adoption of this treatment I may say also, has brought me many grateful compliments.

Where the patient is very nervous, having the tendency to hysteria, neuroses or uterine congestion, I administer Neurosine one part, in combination with two parts of Dioviburnia, which always gives relief.

L. G. BOYD, M. D.

PITUITRIN IN DIFFICULT PARTURITION.—Much attention is being given by the medical press of Germany and other European countries to the importance of Pituitrin as an oxytocic. The drug has been somewhat extensively used for the past two or three years, both here and abroad, chiefly, perhaps, as a hemostatic and heart stimulant. Now it is known to be of great value in uterine inertia, obstetricians in many of the German hospitals and elsewhere who have thoroughly tested it clinically, pronouncing it a truly remarkable oxytocic.

For the benefit of practitioners who may not be familiar with its origin and nature, it may be explained that Pituitrin is an extract of the posterior or infundibular portion of the pituitary gland. Although the physiology of this gland is as yet largely speculative, there seems to be no doubt that it contains a substance or substances that exert a considerable influence over the metabolism and on the cardio-vascular system.

As bearing upon the value of Pituitrin in parturition, this expression from Dr. Emil Vogt of the Royal Gynecological Clinic at Dresden, is significant:

"The oxytocic action of Pituitrin at this clinic was observed in over one hundred cases. After the rupture of the fetal membranes, in the second stage of labor, the physiologic effect of Pituitrin is the most pronounced; the contractions of the uterus follow each other much more rapidly and energetically, and the intervals between pains are decreased. Individually the pains are not more severe, so far as suffering is concerned, even in the case of sensitive women, than they would be in a normal delivery. In half of the cases the Pituitrin was administered in the second stage of labor. It failed only once; in all other instances its action was very pronounced. And although we encounter a great many cases of narrow pelvis in Dresden, from 40 to 50 per cent., it was not necessary to have recourse to forceps delivery in a single instance in which Pituitrin was employed . . . According to our experience, Pituitrin is the ideal oxytocic."

Pituitrin is manufactured by Parke, Davis & Co. It is supplied in one-ounce bottles and in glaseptic ampoules (for convenient hypodermic injection), each ampoule containing one cubic centimeter, or 16 minims, the usual dose.

Parke, Davis & Co. have just issued a pamphlet on Pituitrin as an oxytocic, in which is reprinted not only the extract from Dr. Vogt which appears in this article, but also a number of others from prominent German specialists and practitioners in which Pituitrin is highly extolled as a corrective of uterine inertia. Physicians will do well to write the company, addressing them at the home office in Detroit, for a copy of the pamphlet.



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LATTER DAY THERAPY.

A well-known physician on the Brooklyn Heights tells with some amusement of a time when a misunderstood word of his gave a patient an unpleasant time of it. A man, evidently used to a good deal of outdoor work, came to him, obviously tired and nervous and aching all over.

"Do you walk much?" said the doctor.

"I sure do, Doc," was the reply.

"The trouble is you are all jarred to pieces on the pavements. Your nervous system is on the blink. Do you know rubber heels? Try some and see how you feel."

A few weeks later the man came in looking actually ill.

"Didn't you try my remedy?" said the doctor.

"That's just what I did, Doc," answered the man, "but I could hardly swallow it, and it made me right sick."

"Swallow what?" yelled the doctor.

"Why that rubber you said would heal me."

And across the street the barn robin chortled to the sun.—*American Med.*



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ALCOHOL IN DERMAL THERAPEUTICS.

In reviewing this subject, Gottheil (*Progressive Medicine*) shows that alcohol (50 to 90 per cent) applications are very useful in pruritic inflammatory dermal affections. Bockhart, for example, has for many years treated all his eczema cases (except the most acute) by thoroughly cleansing the affected and surrounding tissue twice a day with cotton dipped in alcohol (90 per cent strength, unless the skin is very sensitive, then more dilute); the excess of fluid, if it does not evaporate, is removed with fresh cotton. Between times the appropriate treatment with powders, salves, etc., is carried on. Even chronic verrucous eczema of the anus yields to careful and frequent alcohol disinfection. For furunculosis of the neck Gottheil has lately recommended 50 per cent alcohol compresses, with gratifying results.

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SOME SUGGESTIONS ABOUT LABELS.

The law requires all food manufacturers to label their products truthfully. Read the labels carefully. They are your protection from fraud. Study them and learn what is an honest label.

The labels must tell what is inside the package. If it is a compound, it must be so stated.

Read the small print, as it is often more important than the large. Does the label tell the truth about the contents of the package?

Don't buy foods and artificial color for foods containing chemical preservatives. The labels should tell. Glucose must not be called corn syrup. Glucose is cheaper.

Unbleached flour is better for health than bleached.—*Bulletin of the State Board of Health of Kentucky.*

PROGRESS IN SURGERY.

Lloyd (*British Medical Journal*) retraces the advances made in surgery, speaking more particularly of exploratory operations, kidney and stomach surgery, appendicitis, colostomy, cecostomy, prostatectomy and herniotomy. Speaking of gastric surgery he says that precision in the diagnosis of many stomach diseases can be secured only by exploratory incision, and that earlier resort to this procedure in many cases is very desirable. When pyloric obstruction is present, as evidenced by periodic vomiting, treatment by posterior gastrostomy is eminently and uniformly satisfactory. Pain in such patients may be absent altogether. When vomiting is absent or only occasional, and pain is the symptom for which a patient seeks relief, gastroenterostomy has its failures. Acute ulcers of the stomach, except when perforating, do not demand surgical treatment; chronic ulcers, on the other hand, do; but what that treatment is to be he is uncertain. Some should be excised, some are cured by gastroenterostomy, some should be infolded, and possibly some should be left alone by the surgeon. Operations for gastric carcinoma are at the present time unsatisfactory, probably owing to their non early recognition. Dilated stomachs, in the absence of associated lesions such as pyloric narrowing or ulceration, may be left unoperated on. Gastric hemorrhages are not to be dealt with satisfactorily by surgical operation. They do better in the hands of the physician. Duodenal hemorrhages, too, are not readily amenable to surgical treatment. Gastroenterostomy does not meet their urgent indications, although it may contribute to the healing of the ulcers in which the bleeding originates. Chronic duodenal ulcer is a pathologic fact; it is no mere surgical apparition as is sometimes suggested. Its frequency in adult males is remarkable; its diagnosis prior to exploration is highly probable, but by no means sure; its recognition at the time of operation is certain, and its relief by operation is most satisfactory. In Birmingham cancer of the stomach does not appear so often as a sequel of chronic ulceration as it is said to do in many other places. The majority of patients with cancer of the stomach give no account whatever of long-standing or of past indigestions. It appears usually as a primary indigestion in the middle aged or elderly, and in all such patients Lloyd

agrees that by the failure of medical treatment quickly to relieve such indigestion, a suspicion of cancer should be aroused and an exploratory operation at once performed.

As for herniotomy, he says that the most important step of the operation has to do with the sac of the hernia. The neck of the sac should not be ligatured, but the peritoneum beyond the neck, and when this has been done and cut across below the ligature, it matters little whether the sac is removed or not. The closure of rings and canals is said to be a matter of secondary importance; in Lloyd's opinion it should always be done, except in the inguinal hernias of very young children, and well done, too. The author is performing regularly both suprapubic and perineal prostatectomy, and finds that each has its merits, and that neither can claim to be the better for all cases. The suprapubic operative mortality is rather the higher in his hands, probably because the more serious cases have been dealt with by this method. The after-results of both operations are then about the same. Prostatectomy for carcinoma and tubercle has been disappointing in his hands.

THE DOCTOR'S DEGREE.

The conferring on the Kaiser of an honorary doctor's degree by Berlin University recalls the fact that the title has fallen from the high estate it enjoyed in other times. In the universities of the twelfth century, at Bologna, Paris and Orleans (which were the forerunners of the German universities) the doctor, whether of law, science or theology, had rank, consideration and privileges that are not now conceded him. In the Middle Ages the doctor was on a footing with the knight and took precedence of the local aristocracy, though lacking the title of nobility. He always wore his hood and gown, and was "maxime reverendus, nobilissimus, experientissimus," etc., etc. He paid no taxes! He could not be troubled with the quartermaster and he had the privilege of having his testimony taken in his own house. During the examination for his degree he was treated with wine and food; and after the degree was conferred the event was celebrated by a long drawn out banquet. Gradually the nimbus around the doctor's head faded; and at the time of the Reformation Luther, himself a doctor, complained of the change that had taken place.—*Medical Times*.

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THE SCAPEGOAT.

Teacher—"I shall not keep you after school, Johnnie. You may go home now."

Johnnie—"I don't want ter go home. There's a baby just come to our house."

Teacher—"You ought to be glad, Johnnie. A dear little baby——"

Johnnie (vehemently)—"I ain't glad. Pa'll blame me—he blames me for everything."—*Medical Brief.*

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PECULIAR PNEUMONIA FACTS.

Interesting cases are recorded by *J. A. M. A.* on pneumonia, which are out of the ordinary. They are based on reports to the *British Medical Journal*. Dr. Tyson called attention to three cases in which mania follows pneumonia; the literature contains only six others. The following are the characteristic points in this form of pneumonic mania: The pneumonia is of the sthenic or classical type. The people affected are mostly of a neurotic temperament. It generally happens in youngish people under 40 years of age. It is associated with great sleeplessness and there seems great difficulty in the treatment of this symptom. The disease need not necessarily be very acute or much lung involved. In fact, the amount of lung involved does not seem to bear any relation to the amount or length of stay of the mania. It occurs after the crisis. The delirium that occurs early in the disease is a much more severe type of mania than the mania following the crisis. The pathology, Tyson supposes, is toxic, but he is unable to say why some suffer in this way and others do not. The prognosis of this mania is good and it should be looked on as part of the pneumonia and should not be specially treated as a case of mania *per se*, and the question of asylum treatment need not be considered. Tyson mentions this point because in more of his cases the physician in attendance considered the mania should be treated in an asylum. Perhaps the most important thing in this trouble is to treat the sleeplessness. Food is the best hypnotic, but it may be necessary to give some morphin or some other narcotic. The bowels should be attended to. A tactful, wise and firm nurse is a necessity, and convalescence, if possible, should be carried out in the country.

The other instance was a case of ante-natal pneumonia. The attending physician, Dr. McDonald, found the mother had lobar pneumonia two days before term. There was considerable physical embarrassment during the labor and the patient was freely stimulated and oxygen was administered at intervals. The child was feeble, but cried soon after birth. It was slightly cyanosed during the night, but this improved in the course of the following morning. Later the breathing became labored and increasing cyanosis was noticeable. There were only one or two attempts at coughing. Respiration quickly be-

came sighing and mucus accumulated in the larynx; death occurred twenty-eight hours after delivery. From the advanced inflammatory changes present in the fetal lungs so soon after birth it is probable that the pneumonic condition originated *in utero*. Films from the lung were stained and in them large numbers of pneumococci were present, similar in morphologic character to those in the mother's sputum.

TO ENLARGE A MEDICAL LIBRARY.

The Hartford (Conn.) Medical Society, at its meeting on March 18, voted to build an addition on the rear of the Hunt Memorial building, which will cost about \$12,000 and will be large enough to house approximately 65,000 volumes. The building will be of fireproof construction, and will probably be ready about September 1.

A GRADUATE SCHOOL OF MEDICINE AT HARVARD.

In accordance with a recommendation from the Faculty of Medicine, the Corporation of Harvard College voted on May 8, 1911, to establish a Graduate School of Medicine. This school will take control of all graduate instruction in medicine October 1, 1912, and will be administered by a separate Dean and Administrative Board. It will thus be on an equality with the Medical School proper and the Dental School. Dr. Horace D. Arnold of Boston has been appointed Dean of the Graduate School. The work of organization has begun and plans are being developed which promise to make this an important move in medical education.

MEMORIAL TO DR. LONG.

On March 30 there was unveiled at the University of Pennsylvania a bronze medallion in memory of Dr. Crawford Williamson Long, who was graduated from the medical school in 1839, and who, on March 30, 1842, just seventy years before, for the first time in the history of surgery, made use of ether as an anesthetic for surgical purposes. The medallion, which was sculptured by Dr. R. Tait McKenzie, was unveiled in the hall of the Medical Laboratories Building, and addresses were made by Dr. J. William White, former professor of surgery at the University of Pennsylvania, and by Dr. J. Chalmers Da Costa, pro-

fessor of surgery at the Jefferson Medical College, Philadelphia.

Sir Bertrand Dawson, Surgeon to King George of England, arrived in New York on March 29 by the steamship *Maurctania* on a tour of inspection of hospitals and medical institutions in this country.

One of the numerous unique features to be offered by the new McAlpin Hotel, now in course of construction on the southeast corner of Thirty-fourth Street and Broadway, New York City, is a fully equipped miniature hospital, where cases, no matter how serious, can be treated with exactly the same care as in the best up-to-date private sanatorium. It is to be arranged so as to be able to comfortably accommodate twelve patients at the one time. Expert surgeons, physicians and trained nurses will be in attendance, so that surgical operations of any character can be skillfully handled at a few moments' notice.

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Expert surgeons and medical men have been consulted by Mr. Frank Andrews, the architect of the hotel, and plans are being made for this miniature hospital so that it will be fitted with every modern appliance known to surgery in exactly the same manner as the best equipped hospital in any part of the country.—*American Practitioner*.

In appointing a successor to the late Dr. Wyman, President Taft has made a wise choice of one of the most courageous of the workers in the public service. We congratulate the Public Health and Marine-Hospital Service upon the elevation of Dr. Rupert Blue to the post of Surgeon-General. His services in the West and South especially indicate his manifest fitness for the highest position in the Public Health Serv-

ice. As a tried and capable officer, an excellent disciplinarian, a studious investigator, a careful clinician, and a thorough scientist he assumes with renewed vigor and intensified interest the duties with which he is most familiar and for which he is especially fitted. The Nation and the Chief Executive may well be proud of Surgeon-General Rupert Blue.

THE ACID NITRATE OF MERCURY TREATMENT OF SKIN CANCER.

In the fall number of *Progressive Medicine* Gottheil quotes with approval Sherwell's method. Under local or general anesthesia, a very thorough curettage of the affected area is done, using currettes of various sizes having a clean wire edge, though not of razor-like sharpness. Oozing is stopped by pressure with gauze sponges wrung out of very hot water or soaked in adrenalin solution; the Paquelin may be used for any spurters that appear. With anesthesia at its height, the acid nitrate of mercury, full 60 per cent strength, is now thoroughly applied to the surface and every corner of the wound by means of small cotton applicators. The acid is applied two or three or more times, and it is allowed to act for from 5 to 20 minutes. Then it is neutralized, when the wound is dry, by packing powdered sodium bicarbonate up to the level of the surrounding skin. The scab turns black and, when kept dry, as it ought to be, is cast off in the course of two or three weeks. When operating near the eye, this organ is protected by soaking a pledget of cotton in saturated solution of baking soda, squeezing out excess of moisture, moulding the pledget and holding it in firm apposition to the parts to be protected.

INTERMITTENT LAMENESS.

Schlesinger (quoted in *Progressive Medicine*) has observed over 100 cases of this disorder, which he attributes largely to the abuse of tobacco. Disappearance of the symptoms after cessation of smoking occurred repeatedly, and recurrence of symptoms was frequent after smoking was renewed. Syphilis is also an important cause. Intermittent lameness is a symptom of disease of the arteries of the extremities. A vascular bruit or thrill is not rarely heard or felt in the femoral artery.



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Official Organ of the Vermont State Medical Society.

Vol. XVIII, No. 7

Burlington, Vt., July 15, 1912

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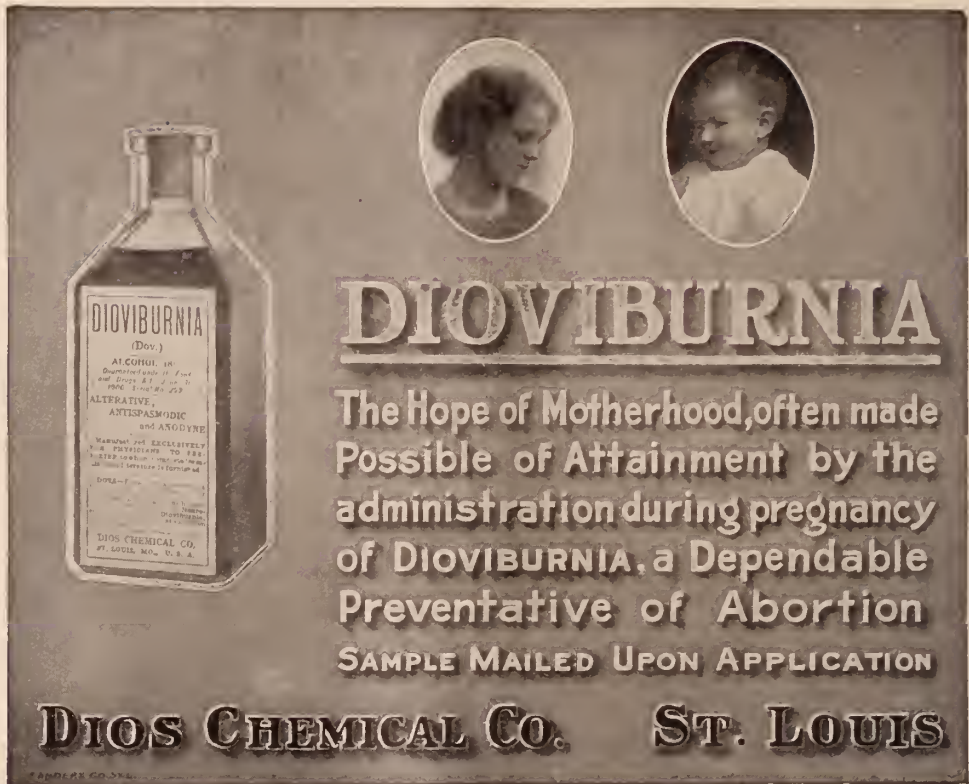
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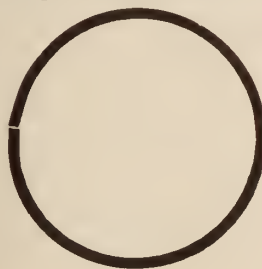
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The nation and the separate states are now to officially unite to stop food and drug frauds. At the New Orleans meeting of the Association of State and National Food and Dairy Departments, in 1910, a committee on co-operation was appointed for the purpose of devising a practicable and workable plan of co-operation between the states and the federal government, and between the states themselves, for the enforcement of the national and state food and drugs laws. This committee, after much deliberation, made its report at the Duluth meeting of the association in August of last year. This report was unanimously accepted and now awaits the final ratification of the secretary of the United States Department of Agriculture.

What a wonderful tribute to the medical profession is the fact that the region of the prospective Panama canal has actually become what amounts to a health resort: The report of the Department of Sanitation for October, 1911, shows that during that month there were 37,496 colored and 12,316 white employees at work on the canal and railroad. Thirty-three colored

employees died of disease and 6 from violence, a total of 39 deaths, or an average annual rate per 1,000 of 12.48. This is the death rate for October for nearly 38,000 negro laborers, working in what was, a few years ago, the pest-hole of the tropics. The death-rate for the United States for 1910, for all classes and climates, was 16.1, nearly 4 deaths per 1,000 higher than the death-rate for the poorest class of laborers in the Canal Zone. Among the white employees, numbering 12,316, 5 died from disease and 2 from violence, a total annual death-rate of 6.82 per thousand.

Venereal diseases are now reportable in New York City, the health board planning for a special lock hospital and for free Wassermann and gonococcus tests. How soon before every American community will follow suit? Public (lay) opinion is now demanding this reform.

The University of Pennsylvania supports its own medical school, hospital and faculty residences at Canton, China. Philadelphia philanthropists are now making an endowment fund for this institution.—*The Medical World.*

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Vermont Medical Monthly.

VOL. XVIII.

JULY 15, 1912.

NUMBER 7.

ORIGINAL ARTICLES.

TOBACCO, ITS USE AND ITS ABUSE.*

BY

DAVID MARVIN, M. D.,

Department of Pharmacology, University of Vermont.

In the selection of this title I have been influenced by the frequent inquiries from students and others, who are users of tobacco, regarding its pharmacologic action and by the frequent articles seen in various periodicals, written by those who are neither qualified by education or experience to treat the subject in a scientific manner. These arrive at erroneous conclusions that are not founded upon statistics or experimental evidence. Lastly, next to caffeine, it is the most commonly used drug in the world today and the rapid increase in its use among all classes, makes it a subject of great importance, and worthy of our careful consideration.

Each of you at this moment holds a prejudice for or against tobacco which is founded upon experience, upon personal observations, or upon evidence from scientific or unscientific sources. You have acted as jury and the verdict has been rendered.

Let us now lay aside this verdict that we may look at the subject in an unprejudiced manner and treat it in the spirit of research, carefully weighing such evidence as is furnished from reliable sources and arrive at a conclusion which is founded upon scientific facts.

ITS DISCOVERY.

That tobacco was discovered by an expedition into the interior of Cuba, sent out by Columbus in 1492, is a matter of history. The natives were seen smoking the dried leaves which were formed into long rolls and, through the process of evolution, has produced the Havana cigars of today. Thus we find Columbus and his sailors responsible for its transportation and introduction to the Old World. It is quite probable that the natives called this plant "uppowoc"

*Read before The University Research Club, April 15, 1912.

and "poetun," as these were the first names applied to it by Europeans.

Oveido, in 1535, states that the name tobacco was probably derived from a hollow instrument called "tabaca," which was shaped like the letter Y, the ends of which were placed in the nose, the crumpled leaves in the distal end and, by inhaling, the smoke was obtained.

ITS SPREAD.

Early history indicates that in 1556, a French monk made the first and unsuccessful attempt at cultivation in France. In 1559, Jean Nicot, then French ambassador at Lisbon, sent some tobacco to Catherine de Medici, as a cure for headache. This resulted in her becoming an inveterate smoker and the plant obtaining the synonym of the "Queen's herb."

The etymology of nicotine traces back to Jean Nicot, who was so influential in its introduction into France.

In the same year, the Portuguese carried it to India, which resulted in its spread over the far east.

In England the drug was known as early as 1564, but was not introduced until Sir Walter Raleigh's colonists returned to England from the American colony. Its spread was rapid and its use not confined to the lower classes but to the nobility, including not only the males but even Queen Elizabeth herself.

In 1589 we find Italy adopting the custom, then it spread to Persia, Turkey and the other adjacent countries.

Thus we see, in less than a century, its introduction and use among all classes in the Old World.

ITS DESCRIPTION.

Tobacco, officially known as *Nicotiana Tabacum*, is a rank, hairy plant, growing from four to six feet high, with coarse, alternate leaves having a disagreeable odor and turning brown during the process of curing.

The varieties of tobacco depend largely upon the soil, the climate, the methods of cultivation, care of the plant and the process of curing. Time will not permit further details in its production nor is it essential, except in its nicotine content,

in the discussion of the subject under consideration.

ITS COMPOSITION.

The exact composition of tobacco is not definitely settled, however, the most important constituent of the dried leaves is an alkaloid, nicotine, a complex organic body, made up of atoms of carbon hydrogen and nitrogen, having a chemical formula of $(C_{10}H_{14}N_2)$. It is a volatile, oily liquid, and when fresh, is practically colorless, odorless and tasteless; soluble in water, alcohol, ether and the various oils. It is alkaline in reaction, forming amorphous salts with acids and is readily decomposed upon standing and exposure, producing a dark brown color with the odor of tobacco.

The dried leaves also contain decomposition products, pyridine and an aromatic oil, this oil producing the characteristic aroma of tobacco.

COMPOSITION OF TOBACCO SMOKE.

The composition of tobacco smoke has been the subject of many investigations, and the results obtained have shown a wide variation in the nicotine content, ranging from 15 to 62% of that originally present in the same tobacco. From recent investigations conducted by W. Emerson Lee of Cambridge University, 50% of the nicotine present in the tobacco was recovered from the smoke; thus proving that improved methods of its estimation show a somewhat larger average present. That nicotine is the *important* constituent of tobacco smoke and the only one of great pharmacologic importance, is conceded by all. Lee states that the action of tobacco on man is exactly what might be anticipated from the knowledge of the action of nicotine.

Tobacco smoke contains many combustion products, all of which are active substances and capable of producing symptoms quite similar to nicotine but of a milder degree.

They are organic and inorganic gases, nitrous oxide, carbon monoxide, pyridin, picolin, quinolin, hydrocyanic acid, tarry substances and a watery vapor. However, these combustion products are found in such small quantities that they alone would fail to produce the characteristic symptoms of tobacco poisoning. The carbon monoxide, produced by many smoking in a confined atmosphere, soon becomes dangerous and toxic symptoms may develop, which em-

phasizes the importance of ventilation in all rooms where tobacco smoke is present.

VARIETIES.

Thus we find nicotine to be *the* active and the most important constituent, the amount of which varies from 1 to 8% in the different varieties of tobacco. Havana and Maryland tobacco contains from 1.5 to 3%, Virginia and Kentucky 6 to 8%, South America 2 to 6%, Germany 1.5 to 3.5%.

It is estimated that the annual production in the world amounts to a million tons which would represent, taking 3% as the average nicotine content, 30,000 tons of nicotine.

ITS USE.

I have stated that next to caffeine, which is the alkaloid found in tea and coffee, nicotine as represented by tobacco, is the most commonly used drug in the world today. Its use started among a few natives, and has spread to every quarter of the globe.

Statistics show that the use of tobacco is on the increase. In Austria, we find that during the past ten years its use has increased nearly 75%. This increase has shown a large percent using cigarettes of which 2,500,000,000 were smoked during a single year, and these smoked, not only by adult males, but many by boys under 16 and also by females. What is true of Austria is also true of other countries but to a less extent. In view of this fact, is it not wise for us to pause and ask ourselves: "Is its use harmful?" and "what are the results of its abuse?"

METHODS OF USE.

It has been stated that the natives of Cuba used the plant by "smoking," which, in all probability was the original and perhaps the only method in vogue up to the time of its adoption by the civilized world. Soon after its introduction into the Old World, we find people "chewing" the dried leaves and later the application of the powder to the mucous membrane of the nose, known as "snuffing," and still later, the custom of applying the fine powder by means of a stick, to the mucous membrane of the gums, known as "dipping." The method of dipping and snuffing are now practically unknown. However, the original method remains the most popular one today.

Let us now turn our attention to a comparison of the methods of smoking because it is upon this point that the majority of people hold opinions which are not supported by facts.

From what has been said regarding the composition of tobacco, nicotine must be our index in a just comparison of methods.

Nicotine, being soluble in water, and hence in the saliva, we can readily see that when tobacco comes in direct contact with the lips or mouth, the greatest amount of nicotine will be dissolved. Bearing this in mind, we will discuss the "*hookah*," a method of smoking by using a pipe with a glass bowl containing rose water, through which the smoke is filtered during the process.

The passage of the smoke through the water dissolves a large portion of the nicotine, not permitting it to reach the mouth, where absorption can take place.

Next in degree comes the *cigarette* which is thought by the majority to be the most harmful method of smoking. In reality it is the *least harmful* of our common methods. In the cigarette the tobacco does not come directly in contact with the lips, the paper acting as a protective barrier; secondly, the grade of tobacco used is one that contains a small percent of nicotine. And thirdly is its small size. This will be explained when discussing the cigar.

Then comes the *cigar*. In this, the tobacco comes in direct contact with the lips and tongue, permitting an aqueous solution of nicotine to be formed within the mouth and ready for immediate absorption. Nicotine is volatilized at 250 and, if no watery vapor is present, it is readily decomposed, but in a cigar water is always present to a greater or less degree and the nicotine, instead of it all being decomposed, is volatilized without decomposition. This takes place in advance of the combustion of the tobacco, by the hot gases passing through the area immediately behind the combustion. Back of this point the cigar becomes cooler and condensation of volatile substances takes place. Therefore the smaller the area and the more complete the combustion, the less watery vapor, hence less toxic substances. It is due to this condensation that the "*cigar stub*" is a source of greater danger than the cigarette.

The use of the *pipe* is the *most harmful* method of smoking. The stem of the pipe, always moist from condensation of aqueous

vapor, and from saliva, which, in turn, dissolves the nicotine during the passage of the smoke or, upon its condensation, produces a highly toxic liquid. This comes in direct contact with the mouth during the process. A case is on record in which a little child used her father's pipe to blow soap bubbles. She was taken suddenly ill and died almost immediately, thus showing that a pipe stem contains a lethal dose of nicotine for a child.

The method of *chewing* tobacco is the *most toxic method of all*. The substance comes in direct contact with the mucous membrane of the mouth where absorption can readily take place and the wonder is, why more are not poisoned. Possibly this can be explained on the ground that a smaller portion is used than if smoked, and the increased flow of saliva produced directly by the drug as well as by chewing with resulting expectoration, is the important factor in preventing toxic symptoms.

ITS PHARMACOLOGIC ACTION.

In the discussion of the pharmacologic action of nicotine as represented by tobacco, I shall report the results obtained from experiments conducted during the past month in the laboratory of Experimental Pharmacology in the Medical Department of this university.

Several experiments were conducted upon frogs and cats; however, the most important were conducted upon ten medical students, members of the Junior Class, who volunteered their services. These experiments were conducted upon men who were tolerant to the drug to a greater or less degree.

Our aim was to determine the effect upon pulse, respiration, blood pressure and secretions.

So far as I am able to ascertain, such experiments had never been conducted in like manner upon man.

The men were arranged in two groups of five each and three normal observations were made upon the rate of pulse and respiration and one upon blood pressure. Group *one* were instructed to smoke deliberately two "Golden Wedding" cigars, which represent a grade of tobacco above criticism. Group *two* were instructed to do likewise, except increase the rapidity of the process. The pulse and respiration were taken every five minutes and the blood pressure every ten minutes, for a period of one hour and twenty minutes.

In discussing its pharmacodynamics, I wish to treat all types of its action by systems, giving the consensus of opinion of the foremost scientists and pharmacologists of today as determined by numerous experiments upon frogs and mammals, using our own experiments as conclusive evidence of action upon the respiratory, circulatory and glandular systems and upon pressure in man.

ABSORPTION.

The absorption of nicotine is extremely rapid from all mucous membranes of the body, also from the subcutaneous tissues and even from the unbroken skin. This has been proven by placing the drug upon the posterior portion of the cat's tongue, rapid absorption taking place, causing death in less than two minutes. It being a rapidly volatile substance, a glass rod, holding a drop, placed near the nose of a mouse or a small bird causes death in a like period of time.

ITS EFFECT WHEN USED IN MODERATION.

Cutaneous System. Its action upon this system is practically negative, the skin only serving as a surface through which absorption takes place. That absorption does take place through the skin has been proven by numerous experiments. Peterson and Haines report two cases of accidental poisoning as follows:

"A man applied to himself a decoction of tobacco for the cure of an eruptive disease. Death took place in three hours, with the usual symptoms of tobacco poisoning."

"A man suffering from pediculi pubis rubbed his entire body with a decoction which he had made by boiling 3,000 grains of tobacco in 4 pints of water. He was seized with vertigo, nausea, heaviness of the head, disturbance of vision, cold sweats, extreme pallor, trembling and weakness of the limbs, etc. The extremities became very cold and purplish in color, and the moisture of the skin was viscous. The pupils were slightly dilated and retained the power of accommodation; they reacted to light. Nausea and vertigo were constant symptoms. There was difficulty of respiration and speech. The symptoms gradually subsided after three hours."

Nervous System. Its action upon the whole nervous system is one of stimulation. The brain appears to be the least affected, a transient stimulation of the higher centers, followed soon by

depression which is characterized by a lessening of the higher psychic functions.

In the medulla, a more pronounced and prolonged stimulation is noticed which is characterized by increased activity of the centers, especially respiratory, vagus and vaso motor.

A like action but of greater intensity is seen upon the spinal cord, which results in exaggerated reflexes and finally, convulsions.

The explanation of this effect is, that it is due to two causes, namely: the direct action upon the centers of the nervous system, and indirectly by the increased blood supply to these structures.

Muscular System. The chief action is seen upon the unstriated muscle fibers. Especially well marked is its action upon the intestine, with resulting increased peristalsis and mild catharsis. The cause of this activity is probably due to stimulation of the spinal centers and the sympathetic ganglia, supplying the intestines.

A like effect is seen upon the muscular walls of the urinary bladder, the gravid uterus and the structures connected with each. However, in moderate amounts, the effect seen is not as pronounced as seen upon the intestinal canal.

The striped muscular fibers do not seem to show any appreciable change with moderate use.

Respiratory System. The local effect when the smoke is inhaled, as is frequently the case in cigarette smokers, is one of a mild local irritant and, according to Dolbey, "Little harm seems to be done."

The respiratory rate with deliberate smoking does not seem to be changed, indicating that the drug has little influence, if any, upon the center in the medulla. However, with rapid smoking, the rate is increased, due probably to the increased effort and not due to a larger dose of nicotine or to stimulation of the center.

Circulatory System. That nicotine, in minute doses, may temporarily and for a very short time lessen the pulse rate, is not disputed and where it does occur, it is caused by a stimulation of the vagus ganglia. However, the experiments conducted in our laboratory showed an increase in pulse rate from the first, demonstrating that, in the great majority of cases, paralysis of the vagus ganglia takes place almost immediately.

The blood pressure is markedly increased in all cases having a normal pressure at the begin-

ing. The cause for this is a stimulation of the sympathetic vaso constrictor ganglionic cells which supply the arterioles, causing a constriction of the same. The above may not be the only cause of the marked increase in blood pressure for Cannon has very recently demonstrated that nicotine, in small amounts, increases the discharge of epiniphria into the blood, which may also assist in producing the increase.

Nicotine did not appear to increase the blood pressure, except temporarily, in those cases that had an abnormally high pressure, in these cases a drop occurred almost immediately, which would indicate a depression of the same ganglionic cells. This phenomenon can be explained upon the hypothesis that in maintaining an abnormally high pressure, the ganglionic cells are taxed to their limit, and on the addition of extra stimulus, nicotine, paralysis almost immediately takes place with a marked fall in pressure.

Digestive System. The effect is first noticed in the mouth, a hot, burning sensation, irritation of lips and gums, with increased flow of saliva. The increased salivation is due to stimulation of the sympathetic nerve ganglia, supplying the salivary glands, either directly or reflexly and is temporary in duration.

A like irritant is seen upon the mucous membrane of the stomach, even in minute doses, producing nausea and vomiting in the beginner. The intestine is likewise irritated, peristalsis increased with resulting looseness of the bowels.

Urinary System. This system is little affected with moderate use. Possibly in a few cases an irritation is produced during the process of excretion. However, this has not been proven to exist with moderate use.

Sexual System. In the female, the uterus, if gravid, is stimulated, otherwise no effect is noticed.

In the male, probably a mild stimulation of the sexual appetite is produced, due largely to the increased activity of the spinal centers and to the increased blood pressure.

Senses. Very little effect has been noticed upon the senses of the body. The pupil is first contracted and this is attributed to a stimulation of the ganglia of the motor oculi, and later it becomes dilated, due to stimulation of the sympathetic ganglia.

Metabolism. Very little or no evidence is to be found concerning its effect upon metabolism when used in moderation. The lack of such evidence would tend to show that it had no appreciable effect.

A slight fall in body temperature is usually noticed.

Tolerance. It is a common observation by all that tolerance to this drug is soon established. The acquisition of this tolerance is rapid, requiring only a few attempts to master a whole cigar without the nausea and vomiting incident to the occasion. However, in a few individuals, tolerance is not established, even after many attempts. These cases are few in number and must be looked upon as idiosyncrasies.

THE EXCESSIVE USE OF TOBACCO.

Thus far, I have endeavored to give the pharmacodynamics of tobacco when used in moderation. Let us now consider its effect when used to excess.

It is a well known fact that the excessive use of any substance, taken into our system, is followed with toxic symptoms. There is not an article of food, a drug, water or even air but what, if used to excess, is detrimental and, sooner or later, oftentimes sooner, makes its toxic effect known by marked symptoms.

This being true, it is not strange that tobacco, if used to excess, would produce like toxic symptoms.

It is the proper use and not the abuse of a substance, that determines whether it becomes a factor for good or ill.

The daily newspapers, the denominational papers, and the monthly periodicals contain articles written by the laity upon the *use* of tobacco, such articles being based upon circumstantial and unscientific evidence, from the *abuse*, of tobacco, *not its use*. The conclusions arrived at are based upon the rare exception and not the rule; and they argue that the tobacco habit in general is productive of disastrous results.

Let us now consider *its abuse* in the same unprejudiced spirit as we did *its use*.

When tobacco is used to excess, a train of symptoms may ensue that are typical of a toxemia and must be considered as such. Larabee states that "Before considering the effects of the *continuous use* of tobacco on the various

organs, it should be said that harmful results are, considering its almost universal use, *rare*. In most cases tobacco is not the only source of the trouble; morphine, tea, coffee, alcohol, or other injurious habits being present."

The usual symptoms that only occasionally occur from the abuse of tobacco, are as follows:

The Nervous System. Upon the nervous system may be noticed a dulness of perception, an apparent delay in process of communication between centers and a loss of memory; while the peripheral manifestation is characterized by tremor of the hands and an increased nervous irritability, with neuralgia and neuritis. These are the symptoms from the use of alcohol. They are also frequently seen in neurotic individuals, excessive venery, etc.

Is it not possible that the above symptoms may not be due in all cases to tobacco, but to the last named conditions, alcohol, excessive venery or neurasthenia?

The Respiratory System. Upon the respiratory system is noticed a laryngitis and an occasional mild bronchitis, due, not to nicotine, but influenced by the irritant products of decomposition. It is very doubtful whether all of these cases are due wholly to the above cause, for these individuals are subject to the same exposures and infections as non smokers who have both laryngitis and bronchitis, the irritation of the combustion products, acting only as an exciting cause.

Circulatory System. That the effect upon the circulatory system is largely functional and not due to gross pathologic lesions, is quite certain.

Bruce, in examining a number of smokers, did not find one presenting a murmur.

Among youthful cigarette smokers is seen palpitation, irregularity and tachycardia, all of which are functional and readily clear up, upon discontinuing the practice.

Another class of cases, occasionally seen among excessive adult users, are those who have pain in the region of their heart which is probably due to a spasm of the coronary arteries, with vaso-constriction, dilatation of the ventricles, chilliness, pallor and syncope.

A third class very rarely may be seen which suggest true angina with bradycardia and syncope. Osler states that he has seen but two cases caused by tobacco. This type, according to Dolbey, occurs only among the cigar and pipe smokers.

It has been suggested that tobacco may tend to favor arteriosclerosis through the increase in blood pressure, but Cushney says "That the change is so slight that these fears are quite groundless."

However, arteriosclerosis has been produced in rabbits by prolonged intravenous injections of tobacco infusion and there are a few cases seen among individuals that cannot be attributed to any other cause.

That these cases seldom occur unless predisposed by other conditions, is the consensus of opinion among scientific men. Alcoholism, emotion, overwork, nervous diseases, convalescence, evil habits, or indigestion are potent predisposing causes.

Anemia has been seen occasionally in those with the habit and invariably it is attributed to it. That tobacco does produce an occasional anemia, especially in boys and young adults is not questioned, but it is questioned whether the anemias among adult smokers are due entirely to the habit. It is quite probable that, were the habits and environment of the patient carefully investigated, it would be found that tobacco is only one factor and perhaps an unimportant one.

The Digestive System. In the mouth we find an occasional cancer of the lips or tongue. That this is not due directly to tobacco, is to be proven. The Indians of some of the Western States are inveterate cigarette smokers but seldom use a pipe or cigar. The occurrence of cancer of the lips or tongue is very rare.

That cancer of the lips is due to the constant irritation of a faulty pipe stem, is conceded. It is a common custom among laboring men to use a clay pipe and to break the stem about midway, thereby leaving a sharp and roughened surface, which is constantly coming in contact with the lips and tongue.

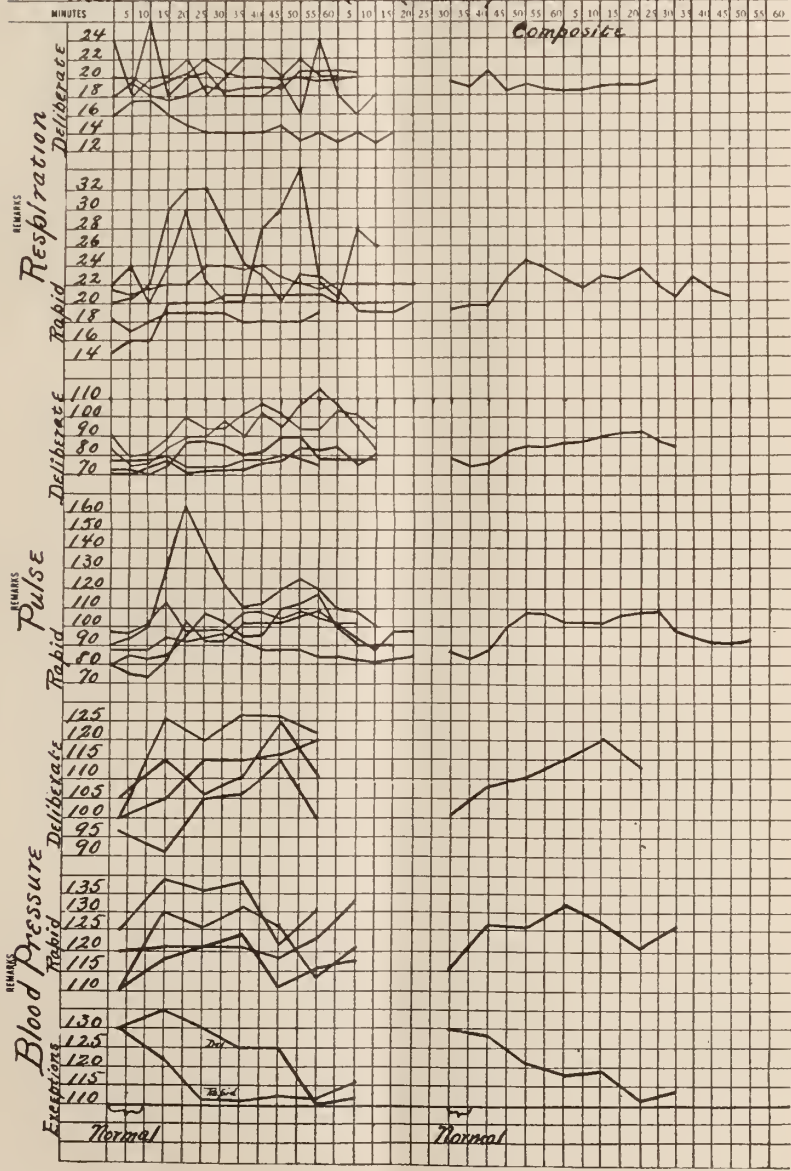
A habit among the users of cigars is to hold an unlighted cigar in the mouth unconsciously toying with it by means of the tongue. This, together with the same condition when the cigar is smoked, causes irritation which assists in producing the cancer of the tongue.

The stomach symptoms usually seen are those of chronic indigestion with hyperacidity and flatulence. These are the typical symptoms of over indulgence in alcohol and from experiments upon rabbits by Adler who fed them cabbages soaked with the infusion of tobacco, for months.

— Tobacco —
 LABORATORY OF PHARMACOLOGY. No

Experiment *Blood Pressure* No. *1* Date *Mohr* Table No. *1* Trac. No. *1* Chart No. *168172*

Animal *Man* Anesthetic *None* Drug *Nicotine* Dose *1 mg* Cigars Given *1* Reporter *None*



It was noted that no effect was seen after the first few days.

It may be stated that such effects as may be noticed are probably due to the circulatory system and which indirectly influences the stomach.

The Urinary System. It is quite possible that during the elimination of the combustion products of tobacco, an occasional irritation of the kidneys is produced which would be a factor to be considered in the cause of nephritis, occurring in such individuals.

Metabolism. The construction or destructive metamorphosis constantly taking place with our body is influenced by the abuse of tobacco, producing in young growing adults a lessening in the normal average development. This has been determined from statistics taken at Yale and would seem to indicate that there is some foundation for the belief that tobacco "stunts the growth."

Senses. The abuse of tobacco affects the eyesight, producing a condition known as amblyopia. This dimness of vision is quite rarely seen, its occurrence varying in eye clinics from 5 in 1000 to 7 in 18,000.

Dowling in examining 3,000 eye cases over a period of ten years from a tobacco factory in Cincinnati, found only 5% showing signs of amblyopia, and these among excessive users.

Dunn states that in young adults this condition is "practically unknown." That the cases seen are usually in late middle age and occur usually, only after its use for many years.

The reason for its appearance in middle age and not before is a difficult question to answer and many have been the theories regarding this. Dunn thinks that it may occur secondarily to a gastritis which interferes with elimination, or else combines with other substances in the system to produce a new toxin, more poisonous. Whatever may be the direct cause, it is quite certain that tobacco is the indirect cause in some cases, and, when seen early, the removal of the cause produces a speedy cure.

Thus far we have discussed the effects when used in moderation and to excess.

It may occur to some to question why tobacco, when used in moderation, is practically harmless and, even when used to excess, produces symptoms in a very small percent?

Before answering this question, let it be said that nicotine is a highly toxic substance, second only to hydrocyanic acid in rapidity of action.

The minimum lethal dose, according to Witthaus is about two drops. This being true, a pipe filled with tobacco would contain enough nicotine, if all absorbed, to kill a man; and a cigar, enough to kill two men.

In answer to the above question, several factors must be considered.

First, at least 50% of the nicotine is destroyed during combustion and in the cigarette, a much larger percent.

Second, the increased flow of saliva, with constant expectoration, removes from the mouth a large amount of that present in solution.

Third, when absorption takes place, it is carried to the liver, where it is converted into a less toxic substance.

Fourth, tolerance is acquired whereby the systems become accustomed to it and fail to take notice of its presence; treating it, not as an occasional visitor, with unusual ceremony, but as a regular caller, with little attention paid to its presence.

We frequently hear people say, "He has the tobacco habit," as though it were to be compared with the alcohol, the morphine, and the cocaine habit. This is a gross injustice, its use can be justly compared with that of coffee and tea; not that its action is similar, but that toxicologically and economically, they are in the same class.

Time will not permit a lengthy discussion of the reasons why tobacco is used, nor an argument for or against these reasons; these alone would fill a large volume. However, permit me to state that it is not the nicotine content present in tobacco that is enjoyed by the user. The amount of nicotine present is never inquired about when purchasing tobacco. The enjoyment is in the aroma, the sight of curling smoke floating so gracefully in rings and other imaginary forms, to finally disappear in the surrounding atmosphere. It hastens the passage of time and may temporarily, dispel the thoughts of hunger, want and poverty, making existence more like a dream.

SUMMARY.

Nicotine is the most important constituent of tobacco and the only one to be considered in determining its effect.

Nicotine is present to the extent of from 1 to 8% in different varieties of tobacco.

Excepting caffeine, it is the most commonly used drug in the world today.

The method of smoking has displaced nearly all other methods of use.

A comparison of the toxemia from different methods of smoking rank as follows: the hookah, cigarette, cigar and pipe.

It produces, when used *in moderation*, a stimulation of the nervous system, of the unstriated muscular system, an increase in pulse rate and blood pressure, increased flow of saliva and stimulation of the gravid uterus, a contraction of the pupil, a slight fall in body temperature and a tolerance to the drug.

It produces, *when used to excess*, symptoms in a *very small percent* and often it is only one factor in producing the conditions observed.

It produces in boys and young adults *when used to excess* a loss of memory, tremor of the hands, increased nervous irritability, a palpitation of the heart with irregularity and tachycardia, all of which are functional; also an occasional anemia and a loss of flesh.

It produces, *when used to excess* in advanced life, a tendency to neuralgia, neuritis, laryngitis, bronchitis, anginal pains, arteriosclerosis, cancer of the lips and tongue, chronic indigestion, albumenuria and amblyopia.

When indulging, use the "hookah" (a pipe with a glass bowl), the cigarette with a cork or straw tip; or a small slender cigar with a cigar holder, discarding the pipe entirely.

Use tobacco, the nicotine content of which is below 3%. The so-called "mild tobacco." Permit the tobacco, no matter in what form, to become thoroughly dry before using.

Never re-light a partly used cigar.

Never inhale the smoke.

Never chew tobacco.

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FRACTURE AT THE LOWER THIRD OF THE TIBIA.*

BY

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Fracture of the tibia by indirect violence usually by transmission through the foot is frequent at the lower third. It is said that torsion plays a considerable part in determining these fractures. The fibula is usually broken at a slightly higher angle. The line of fracture may extend to the ankle joint. It is downward and forward so that the end of the upper fragment has a sharp point anteriorly. The shortening is caused by contraction of the gastrocnemius and soleus muscles. The anterior projection of the upper fragment may in part be due to the action of the quadriceps extensor of the thigh.

Fractures of the lower end of the tibia involving the joint are either inflicted by eversion and outward rotation of the foot producing a Potts fracture or by inversion with inward rotation producing a fracture of the fibula about an inch and a half above its lower extremity as well as fracture of the internal malleolar.

Potts fracture has three points of fracture, one tip internal malleolar, another of fibula two inches and a half above its lower extremity and a third, not always present is through the outer margin of the articular surface of the tibia. This fragment may be broken from the shaft and pushed upward between the tibia and fibula. There is an eversion of the foot, prominence of the internal malleolar together with a widening of the articular surface. The foot drops backward, partially by the pull of the gastrocnemius and soleus muscles but chiefly on account of its own weight. The deformity is therefore a double one, a lateral sliding of the foot outwards and an antero-posterior dropping of the foot backward.

*Read before the Burlington meeting of the Rutland Railroad Surgeons, 1912.

Treatment. An anesthetic should always be administered; the essential points in reduction are lateral outward pressure on the internal malleolar, lateral inward pressure on the foot and a forward lift on the posterior part of the heel. This is best maintained by the posterior lateral splint of Stimson. The posterior splint extends from the toes along the sole of the foot around the back of the heel and up the back of the leg to the knee. The lateral splint begins at the external malleolus, passes over the dorsum of the foot to the inner side under the sole and upwards along the outer side of the leg to the same height as the posterior splint. Each of these splints is made of six or eight strips of washed crinoline four inches wide and long enough to extend from around the foot to the bend of the knee. Plaster cream is rubbed into the crinoline strips. The posterior strip is applied first and held firmly by a gauze bandage to the leg and foot. Then the remaining crinoline strips are likewise covered with plaster cream and applied as the lateral splint. This is also held firmly by a gauze bandage to the foot and leg. During the application of the splint and until the plaster has set the foot should be held in the corrected position by an assistant. These two plaster of Paris splints are preferable to the encircling plaster of Paris splint for by their use the ankle can be inspected. The patient may be allowed up and about with crutches at the end of the first week. At the end of the third week all dressings should be removed and gentle massage in antero-posterior direction only commenced, all lateral motion should be avoided. At the end of two months some weight may be borne on the foot.

Treatment of fracture of the tibia at the lower third. Reduction of the displacement in the shaft of the tibia can usually be accomplished by traction on the foot. The reduction is not easily maintained where the obliquity is marked and the displacement is great. The contusion and swelling which usually accompany these fractures often make it unsafe to put the leg in a plaster of Paris dressing at once. While these conditions exist a pillow makes an excellent support for the fracture. The pillow should be placed about the leg and lateral support given by a fracture box, composed of three loose boards. The wooden strip on the posterior part of the leg should extend from a point below the

sole of the foot to the fold of the joint behind the knee. This board should not be wider than the leg at the calf. The two lateral boards should be wider, being five inches in width and should extend from below the sole of the foot to a distance four or five inches above the knee joint. The leg is placed in the middle of the pillow and the sides of the pillow are brought up on the lateral surfaces. The lateral boards are now pressed against it and give support to the leg and foot. The amount of pressure being determined by the amount of tension put on the bandage strips which pass around and envelop the splint, the pillow and leg. If the upper fragment projects forward it may be somewhat steadied in position by a firm compress placed over it and secured by a strip passing about the fracture box at the site of injury. The splint may be replaced in a week or ten days by a plaster of Paris dressing. This fracture box is well adapted to the treatment of these fractures for it fulfills the condition to be met in compound fracture. The leg can be inspected without disturbing it. It can be kept clean. Good support is given by lateral pressure. This fracture box can be suspended and the patient can move without disturbing the fracture.

The nearer the ankle joint the fracture is the greater is the likelihood of displacement which is hard to hold reduced. The contraction of the quadriceps extensor tends to pull the upper fragment forward, the contraction of the gastrocnemius tends to pull the lower fragment backward and upward. The obliquity of the fracture and the action of these two groups of powerful muscles make it almost an impossibility to hold these fractures reduced. It is even under an anesthetic impossible to correct the deformity without doing a subcutaneous section of the tendo Achilles. Operative interference with the Lane steel plates is the most effective method of treatment in troublesome cases. It is always well to delay operating until the primary effect of the injury has ceased, i. e., until after the swelling has subsided. A delay of ten days is time gained. In using the Lane splint two screws should be placed on either side of the fracture. Immobilization of the parts operated on can be most effectively secured by the circular plaster of Paris splint.

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TUBERCULOSIS OF THE KIDNEY, WITH A REPORT OF ONE CASE.*

BY

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My experience in renal tuberculosis is limited to five cases, four of which I am not at liberty to report, as they occurred during my work under other men. In this paper I have not attempted to cover the entire subject, but simply to bring what I consider the most helpful points in diagnosis to your attention.

This disease is said to be one of early adult life, and all five cases were under thirty-five. In the Mayo clinic, 29% were over forty.

There is considerable variation in the statistics of different authors as to which sex is the most frequently affected. In 626 cases I have looked up in literature, 402 were men and 224 were women.

In women the infection is almost always embolic. In men it is usually so, but may be an ascending infection from disease in the epididymis, testicle, vas deferens, or prostate. The bladder is involved in about two-thirds of all cases.

Very frequently there is evidence of tubercular disease elsewhere in the body. Often it is present but escapes detection.

There are two forms, the miliary and caseous types. The miliary type is likely to be a part of a general miliary tuberculosis, and as such is not a surgical disease. The caseous type is usually unilateral, especially early in the disease. The second kidney may become infected through the blood stream, or by an ascending infection from the bladder after it has been involved in the process.

The general symptoms are those of tubercular disease elsewhere, loss of weight, and strength, anorexia, indigestion, night sweats, and general weakness.

The presenting symptom in a very large proportion of cases is frequent painful urination, with more or less increase in the amount; this condition is generally aggravated by treatment that would be appropriate in an ordinary case of cystitis.

Hematuria is occasionally the presenting symptom, and is usually present at some time

during the disease. It may be profuse, but is often scanty, so that blood is found only on microscopic examination.

Pyuria is not marked early, but later may become very profuse. It may cease entirely if the ureter becomes constricted by tubercular disease or secondary pyogenic infection.

Secondary pyogenic infection of the kidney is likely to occur and gives the usual symptoms of a septic process.

Tubercle bacilli are very difficult to find in most cases. I found them in only one of five. The most satisfactory test is that of passing the urine through a guinea pig; when finding typical tubercular lesions in the pig confirms the diagnosis.

Severe pain is not as a rule present, but there is often a sense of fullness or dull pain and tenderness on pressure over the affected organ. If hematuria is sufficient, clots passing through the ureter may cause typical ureteral colic.

Little or no enlargement is found early. If present, enlargement is usually due to abscess formation. The sound organ frequently undergoes compensatory hypertrophy, and may be the larger.

DIAGNOSIS.

Early diagnosis is often difficult or impossible. It is only by considerable observation and frequent examination that a correct diagnosis may be made.

It is well to bear in mind that cases giving cystitis symptoms which do not respond to the usual treatment of irrigation, etc., are likely to be cases of tubercular kidney. If the symptoms are aggravated by treatment, the suspicion is increased.

Every case of hematuria demands an investigation to find the cause. If at all prolonged, it is more than likely to be serious, and we should not be satisfied to let a case go without a positive diagnosis.

Repeated bacteriological examinations of the urine should be followed by guinea pig inoculations whenever practicable, if the tubercle bacillus is not found.

The cystoscope gives valuable information, and should always be used, a typical tubercular ulceration at a ureteral orifice means tuberculosis of the kidney on that side.

Much valuable information can be obtained by urethral catheterization, and it is only by this

*Prepared for and read before Washington County Medical Society, March, 1912.

means that we can determine whether the other kidney is sound and capable of performing its functions.

When the bladder is the seat of extensive tubercular disease, ureteral catheterization is impossible.

TREATMENT.

When one kidney alone is diseased, or the bladder is only moderately involved nephrectomy should be made. If both kidneys are involved there is considerable difference of opinion as to treatment. The Mayo's report that the results of removing the worst kidney have been disappointing. The operation may occasionally give a cure.

PROGNOSIS.

If while the disease is unilateral, treatment is instituted, if done moderately early, we ought to get 75% of cures. The bladder symptoms usually disappear within the first year.

When the disease is bilateral, the cures are very occasional.

In conclusion, I wish to report one case briefly.

REPORT OF CASE.

Female, age 29, first seen Sept. 5, 1911.

T. H. Neg. for T. B. Otherwise not important.

P. H. Typhoid-pneumonia at eight years. Scarlet fever at 17. An involvement of the ankle joint lasting three months, possibly tubercular at 21. Purulent otitis media three years ago, mastoid involvement.

P. I. Ill during part two winters with pain in left lumbar region. In July, 1910, had painful frequent urination, chills and fever. Symptoms ceased in about six weeks.

Jan. 1911 began to have occasional pain and "cutting" sensation on urination which became constant in May. About June 1st began to pass shreds and some blood in the urine.

Has lost weight and strength. Has considerable indigestion and is very nervous.

P. E. Poorly nourished with pale skin and m. m. s. Slightly roughened breathing at left apex. No dullness. Right kidney palpable. No enlargement made out. Some tenderness and muscular spasm over left kidney. Very tender over bladder.

The patient was put on urotropin gr. V. T. i. d., and bladder washings attempted which caused considerable pain and were discontinued.

The urine was frequently examined for T. B. both by myself and at the State laboratory, and was always negative.

Pus and blood were always present. On Sept. 12, a cystoscopic examination was made. Bladder very sensitive and capacity was only about three ounces.

Trigone vessels very much enlarged and an ulcerated area about the size of a quarter at left ureteral orifice bleeding at slightest touch.

Ureters not catheterized on account of bleeding which obscured the field.

The patient went down hill rapidly and was in poor condition when I operated on Oct. 11, 1911. I first made a right lumbar incision and found the right kidney not diseased. Then lumbar nephrectomy was made on the left side, when the kidney proved to be about $\frac{1}{3}$ larger than the normal, and the lower half was filled with a large tubercular abscess. Drainage was left in, the wound healed in three weeks.

At the present time, somewhat more than four months after operation, the patient has gained weight and strength but still has symptoms referable to the bladder. She seems to be making a good recovery, although it is too early to predict the final result.

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A gangrenous gall-bladder mucosa is usually easily stripped out (Mayo). It is a quicker proceeding than cholecystectomy, and provides more rapid healing than mere cholecystostomy.

Hemorrhage from an old, indurated gastric ulcer is a much more serious matter than bleeding from a more recent ulcer, since in the former the vessel may be unable to collapse and allow clotting.

If blood is vomited in large quantity it is important to distinguish, by the history and physical signs, between gastric ulcer and ruptured varicosities of the esophagus.

Vermont Medical Monthly.

*A Journal of Review, Reform and Progress in the
Medical Sciences.*

H. C. TINKHAM, M. D., }*Editors.*
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EDITORIAL.

Of the medical achievements of the past twelve months three stand out so conspicuously that they may with appropriateness be designated as medical triumphs. Two of these in the field of medical research come as the culmination of years of investigation carried on by many workers in scientific medicine. The other a thorough and painstaking application of principles long known is nevertheless of as far reaching importance as the other two.

Nuguchi in his isolation and cultivation of the *treponema pallida* and his success in reproducing the disease from these cultures has settled beyond all dispute the etiology of syphilis together with all that implies. The Wasserman test is now confirmed by using pure cultures as an antigen and the possibility of simpler clinical tests is created. It is too early yet to draw conclusions regarding the actual value of the Luetin test for syphilis which corresponds to the skin reactions for tuberculosis but early results are promising. Furthermore, the organism of

the disease isolated and cultured, vaccine treatment is immediately suggested.

Carrel's success in inducing tissue cells from the body vertebrates to grow in culture when separated from the body is an achievement of wonderful significance. Our ideas that the specialization of higher tissue cells of the higher organisms has rendered them incapable of independent growth is disproven. It indicates that what we know as death is usually the failure of a small group of cells which govern the coordinated function of all, but that life may exist in some cells for a considerable time thereafter. It goes to simplify the apparent reversion to a simple and incoordinate growth which takes place in the cancer cell transforming this cell from its normal functions as related to and controlled by the whole organism to a parasite having no relation to the needs of the organism and restrained only by the limits of its food possibilities and certain stronger tissues with which it comes in contact.

Major Gorgas' wonderful accomplishments in the Canal Zone by simple and efficient application of the principles of preventive medicine which have been slowly learned in the past twenty years is the achievement of the most immediate practical interest to all mankind as it opens a country considered almost uninhabitable, to the occupancy of people of all climes. In demonstrating the truth of our gradually acquired theories of preventive medicine it makes possible the opening up of vast areas of civilized enterprise.

That these achievements should finally be brought to their culmination by American physicians or men working under American support should be a matter of national pride and congratulation.

As the season when the medical schools of the country finish their annual session and a large

number of medical graduates come to take places in the ranks of the medical profession, we very naturally ask, Where do all these young physicians go? How can they all get a living? and, Does the country need such a large number of new doctors added to the medical profession each year?

The one hundred twenty (120) medical schools of the United States have graduated from four to five thousand medical men each year for the past twelve or fifteen years. The number of medical graduates increased each year up to 1904 when there were 5,190 graduates. Since then the number has steadily decreased and last year there were only 4,006 medical graduates in the United States. Judging from this we may expect the number of medical graduates this year will be something less than four thousand.

The total number of medical graduates in the United States for twelve years (1900-1911) was 5,590. It would almost seem at first thought that this was a larger number than was necessary to meet the needs of the public.

Learned men who have studied this question have said that the medical schools were turning out altogether too many medical men and that there were too many physicians in the country. They have strongly advised reducing the number of medical schools and also reducing the number of medical graduates.

This seems very much like a trust idea. Why should the number of medical graduates be reduced? If we consider this subject from the standpoint of the public health, how can any number of carefully trained medical men endanger the public health any more than too many well trained firemen would increase the danger of fire? We can see how too many physicians would make it impossible for them all to get a living in the practice of medicine. In this event competition would compel the

weaklings in the profession to seek some other employment for a livelihood. It is a question if this would be a disadvantage for the professional weaklings would be eliminated.

The number of medical graduates has been associated indiscriminately with poorly qualified graduates. There can be no question about the necessity of having medical graduates carefully trained. Medical schools should be required to maintain such a standard of education and provide such equipment and clinical facilities as will insure a satisfactory training.

The trouble just now seems to be in deciding what shall be a satisfactory training for medical men. This question has been so thoroughly associated with the idea that there were too many doctors in the country that it is a question whether the actual needs of the people or the idea that it was desirable to reduce the number of medical graduates had the greater influence in fixing the present standard of medical education. Is it necessary or advisable to reduce the number of medical graduates? Are there too many physicians in the country, and are the physicians increasing out of proportion to the population as we have been led to believe? Let us see what the actual condition is.

In 1890, according to Polk's Directory, there were 100,180 physicians in the United States. The United States Census Report for that year gives the population of the United States as 62,622,250. This gives the proportion of one physician to every 626 people.

In 1900 there were 119,749 physicians and the Census Report of that year gives the population as 75,840,574. This gives the the proportion of one physician to every 633 people.

In 1910 there were 132,212 physicians in the United States and the census for that year gives the population as 91,780,357. This gives the proportion of one physician to every 694 people.

It is very evident from this that instead of the number of physicians increasing out of proportion to the population the ratio has steadily been getting less for the past twenty years—1890, 1 to 626; 1900, 1 to 633; 1910, 1 to 694.

It is also evident that the proportion has fallen off much more during the past ten years than it did before. Notwithstanding these facts there has been a great hue and cry by a few that there were too many physicians, too many medical graduates. That there should be fewer medical schools and that the number of medical graduates should be reduced. Is it possible that the fact that the population of this country has been increasing more than 1,500,000 a year since 1900 has been overlooked? Anyway, this great hullabaloo about too many physicians is entirely without foundation of fact, and on the other hand, if the population of this country increases as rapidly as it has been doing and the number of medical graduates continues to decrease in the same way, that it has, it will not be long before some localities will not have physicians enough to care for the people.

The lack of physicians in the smaller towns throughout the country is already noticeable and this condition must get worse under present conditions.

Instead of reducing the number of medical graduates the country needs more physicians. There are too few to do the general practice now and there is an increasing demand for medical men in the various medical laboratories that are scattered through every state in this country.

SYPHILIS AND THE NERVOUS SYSTEM.

No tissue, organ or system tolerates injury so poorly as does the nervous system, a lesion not presenting the least evidence of its presence anywhere else in the body, would, if located in the nervous system, manifest itself in a com-

plexity of symptoms. Every nerve cell is either the centre for a certain function, or is a relay between that function and the central station, the intoxications manifest in certain diseases, and the loss of function in others, be these temporary or permanent, are all related to the nervous mechanism. Untreated, or not cured, these injuries may bring life-long disability, suffering, or death.

A. Myerson is perfectly justified therefore in his complaint of the scant attention paid the subject of cerebrospinal syphilis. He has this to say:

"In the American text-books on syphilis and neurology, the subject is very scantily treated, as, indeed, is the whole matter of cerebrospinal syphilis, more space and consideration being granted to the system diseases. These latter are, on the whole, much less common, are incurable, and their early diagnosis is a matter only of academic interest, while the early recognition of cerebrospinal syphilis often carries with it the life of the patient, since prompt energetic treatment brings at times remarkable results."

A study of the literature on cerebrospinal syphilis makes evident one fact, namely, that there is not a functional or organic disorder of the nervous system that may not be caused by syphilis, the reason for this is not very far to seek. In its essentials, the pathology of syphilis is limited to the vascular system. The nervous system is extremely rich in vessels.

Because of its highly organized cells, the nervous system cannot stand the slightest interference with its nutrition, hence the least affection of its vessels, or the quality of the blood in them, is followed by an unfavorable nervous manifestation. When the cerebrospinal affection is acute, the result is usually insanity terminating in early death. This was the outcome in one of the cases reported by Myerson. At least some of the cases of undiagnosed acute

mania, (Bells for example) and death, are due to syphilis. The literature on the nerve affections of syphilis make evident a peculiar truism, namely, the milder the early specific manifestations, the more certain the occurrence of nerve involvement. Fournier quoted by Mott, very appropriately states: "The comparative mildness of the primary constitutional symptoms in those who ultimately become tabetic, would almost seem to indicate that when the syphilitic virus expends itself in severe primary and secondary manifestations, there is a less tendency to the subtle poison which proves so disastrous to the nervous system."

Mott corroborates the same, giving his own experience of over 500 autopsies on general paretics, and goes on to say: "I have been surprised at the rarity of severe tertiary skin and visceral lesions as compared with the cases of true syphilitic brain disease." The experience of a large number of clinicians and syphilographers (Fournier, Kraft, Ebing, Norme, Oppenheimer, Finger, Mott, Lang and others) is to the effect that the syphilitic virus attack most readily the weakened nervous system and once it takes a good hold treatment seems to have a rather moderate influence on its course. It is advisable therefore, to be on the lookout for the earlier manifestations. Young individuals complaining of persistent headache, dizziness, confusion, torpor and transient paralyses, etc., and not giving a satisfactory cause for the same should become objects for the suspicion of luetic infection. There is no telling how many paretics, early dementias, and other obscure insanities might have been saved by vigilance.

NEWS ITEMS.

The trustees of the American Medicine Gold Medal award, William J. Robinson, Claude L. Wheeler and H. Edwin Lewis, respectfully announce that the medal for nineteen hundred and twelve has been conferred upon Doctor William

C. Gorgas, Ancon, Panama, as the American physician who in their judgment has performed the most conspicuous and noteworthy service in the domain of medicine during the past year.

Prof. Carl von Noorden, a celebrated member of the medical faculty of Vienna University, who is going to New York in September at the invitation of the Post-Graduate Medical School to deliver a series of lectures, will also go to Washington to take part in the International Hygienic Congress as the official delegate of the Austrian government. He has also accepted invitations to lecture in a number of other American cities. The professor has selected as the theme of his lectures the progress made in the treatment and cure of diabetes and kidney troubles as well as the science of dietetics. Prof. von Noorden will return to Vienna by the middle of November.

At the eighty-first annual commencement of Wesleyan University at Middletown, Conn., held on June 19th, the degree of doctor of laws was conferred upon Dr. Amos J. Givens, proprietor of Givens Sanitarium for nervous diseases at Stamford, Conn.

At the annual commencement of the University of Vermont at Burlington, Vt., held on June 26th, 1912, the degree of master of science was conferred upon Dr. Henry Crain Tinkham, dean of the College of Medicine.

On June 6th, at Atlantic City, during the meeting of the American Medical Association and following a symposium on anesthesia, the National Society of Anesthetists was organized. Prof. Yandel Henderson of Yale, chairman of the commission on anesthesia, of the A. M. A. occupying the chair, those assembled for the symposium acting as a committee of the whole, proceeded to organization, and elected the following officers for the year 1912-1913: President, James T. Gwathmey of New York; vice-presidents, Charles K. Teter of Cleveland, F. H. McMeehan of Cincinnati, Yandel Henderson of New Haven; secretary, William C. Woolsey, 88 Lafayette Ave., Brooklyn; treasurer, Harold A. Sanders of Brooklyn. The constitution and by-laws were ordered to be drawn by the executive committee and submitted to the society for its next meeting for adoption; all names submitted for membership, if qualified in the estimation of the executive committee, shall be con-

sidered as charter members if presented within a period of sixty days and accompanied by the levied due of three dollars. The National Society of Anesthetists in this notice, calls all those who are actively interested in this work to join its ranks and assist in developing the subject of anesthesia to greater perfection and more uniform safety.

At the eighty-seventh annual commencement exercises of Jefferson Medical College, held on June 3d, four men prominent in Philadelphia's medical circles received honorary degrees. The degree of doctor of science was conferred upon Dr. William W. Keen, class of 1862, who is emeritus professor of surgery at Jefferson Medical College, and upon Dr. James W. Holland, class of 1868, emeritus professor of chemistry at the institution. The degree of doctor of laws was conferred upon Dr. J. Solis-Cohen, honorary professor of laryngology at Jefferson Medical College, while Dr. Joseph S. Neff, director of the Department of Health and Charities, received the degree of doctor of public health. Doctor Neff was graduated from Jefferson Medical College in 1875.

Dr. Ira Remsen, for nine years president of Johns Hopkins University and one of the original members of the faculty of that institution, tendered his resignation to the board of trustees, April 10. Dr. Remsen will retain his professorship of chemistry in the university.

The Honolulu "Commercial Advertiser" states that, in all, seven leper patients have been released on parole by the board of health, all of whom have been apparently cured or the disease arrested through the carbon monoxide snow treatment of Dr. Wayson. All the patients on parole continue under observation.

Dr. Thomas McCrae, associate professor of medicine and clinical therapeutics in Johns Hopkins Medical School, has accepted the chair of medicine at Jefferson Medical College, Philadelphia. Doctor McCrae will sever his connection with Johns Hopkins at the end of the present scholastic year, and assume his new duties in October.

Sir Bertrand Dawson, physician extraordinary to King George V., arrived in New York on Friday, March 29th. He has come to study American methods in surgery, and will visit the

principal hospitals in New York, Philadelphia, Washington, and Baltimore, in addition to the institution of the Mayo brothers in Rochester, Minn.

The Utah State Board of Health has issued an order abolishing quarantine against smallpox. Houses in which smallpox patients are under treatment are to be marked with a flag, but its other inmates are to be allowed to move about freely. It is maintained that quarantine against the disease is ineffective and harmful in so far as it gives the public a false sense of security, discouraging resort to actual preventatives.

We are indebted to Leslie's for April 4th for the information that very few newspapers printed the fact that the Senate at Washington promptly turned down a resolution regretting the resignation of Doctor Wiley. It is not impossible that there will be genuine regret at this resignation in some quarters where none is felt now; for the doctor's utterances will henceforth be untrammelled by governmental colleagues and "assistants."

Miss Clara Barton, founder of the American Red Cross Society, died at her home in Glen Echo, Md., on Friday, April 12th, in the ninetyeth year of her age. It was largely through her efforts that the American Red Cross Society was established in this country, and she was president of the organization for twenty-three years, retiring in May, 1904. Long before this society had been founded, however, Miss Barton had become famous for her work on the battlefields in the Civil War, the Franco-Prussian War, and during the Spanish-American War, although nearly eighty years of age, she went to Cuba and directed the work of the society on the field.

Dr. Barnet Joseph, a private of Company M, V. N. G., has received notice of his appointment as a lieutenant in the medical corps of the First Vermont infantry. The appointment was made by Adjutant-General L. S. Tillotson.

Flower Hospital, New York City, is to be moved in the near future to a site not far from the present one.

Dr. Wiley's salary amounts now to about \$18,000 yearly; \$7,500 from a magazine as its editor, and \$10,000 from a lecture bureau. If

he accepts the position of chairman of the Boston Board of Health the food expert will have reached the \$25,000 mark.

Some interesting theories regarding diet were brought out at the congress which has been discussing the needs of the British schoolboy and schoolgirl.

Dr. Robert Hutchison, one of the greatest living authorities on dietetics, gave some practical advice on the feeding of the human boy and girl. He said that at the age of 14 the oxygen consumption of a boy was half as much again for the same amount of weight as it was in a fully grown adult. Therefore, "oxygen food" was essential for the growing boy. The school diet must be a mixed diet—well mixed, and it was difficult to rear growing children on a vegetarian basis.

"Trust the appetite of your boys, and all will be well, if that appetite is not debauched," he said. "You cannot actually overfeed a healthy, growing child."

Dr. Hutchison referred to the old idea that certain foods were good for the brain, such as fish, and said that it was now absolutely established that there was no such thing as brain food. He also declared that there was no relation between national character and national diet. This can be proved by the fact that some of the cruellest nations in the world's history have been vegetarians.

Dr. J. Sim Wallace of the London Hospital seemed to consider that people began their meals at the wrong end. Dealing with the question of teeth at school he said:

"There is a new principle, which is still neglected by most of those in authority at schools. It is of primary importance that the meals shall be so arranged that the mouth will be in a hygienic state on finishing the meal."

He then gave examples of cleansing foods which should end a meal and non-cleansing foods, which should not be eaten last. Among the cleansing foods which might rightly finish a meal were, fish, meat, lettuce, celery, crust, toast, fruit, tea and coffee. Among non-cleansing foods he classed sweet biscuits, cake, bread and jam, milk pudding, porridge, preserved fruits, chocolate and cocoa. Cocoa he declared to be one of the worst drinks possible in relation to the hygiene of the mouth.

Some of the maxims laid down by Dr. Dukes, consulting physician of Rugby School, were:

While adults should rise from table hungry, children should reach a sense of repletion before rising.

No work should ever be imposed upon boys and girls without previous sustenance.

Breakfast is the most important and health-giving meal of the day for youth. Oatmeal porridge is an ideal food for those who can eat it.

Dinner should be a good meat, vegetable and pudding meal, varied with intelligence.

Tea is not a sufficiently varied meal. The following articles of diet would be appropriate: Eggs, fish, potted meats, jam, marmalade, honey, treacle, radishes, lettuce and watercress.

David Singer of 23 Willard street has brought suit for \$10,000 against Dr. Bertram H. Buxton of Providence, claiming that the doctor, who had attended his wife at her home, negligently placed an infant in a receptacle standing on a stove, that the child was burned and died. His action, which was entered in the Suffolk superior court, is for the loss of the services of the child. He alleges that the defendant attended his wife on Feb. 22.

The preliminary program of the American Proctologic Society's fourteenth annual meeting, which was held at Atlantic City, N. J., June 3 and 4, 1912, was as follows:

Executive Council met at 11 a. m.

First regular session at 2 p. m.

Annual Address of the President—Subject: The Relationship and the Duties of the Proctologist to the Profession, John L. Je'lks, Memphis, Tenn.

The following papers were read:

1.—A Review of Proctologic Literature for 1911, Samuel E. Earle, Baltimore, Md.

2.—Post-Operative Care of Rectal Cases, Wm. M. Beach, Pittsburgh, Pa.

3.—Patulous Anus—Its Clinical Significance, Alfred J. Zobel, San Francisco, Cal.

4.—The Three-Step-Operation in Tumors of the Sigmoid and Colon, James P. Tuttle, New York City, N. Y.

5.—A Study of Cases of Constipation by the Use of the Roentgen Ray, Arthur F. Holding, New York City, N. Y.

6.—Valvotomy, George B. Evans, Dayton, Ohio.

7.—Multiple Adenomata of the Rectum. A Report of a Case with Symptomatic Relief by Simple Remedies, E. H. Terrell, Richmond, Va.

8.—Pigmentation of the Rectum and Sigmoid, Jerome M. Lynch, New York City N. Y.

9.—Observations Upon the Relationship of Tuberculosis to Peri-Rectal Suppurations, Collier F. Martin, Philadelphia, Pa.

10.—Ano-Rectal Disease Due to Venereal Infection, J. A. McVeigh, Detroit, Mich.

11.—Further Observations on Pruritus Ani: Its Probable Etiologic Factor, Dwight H. Murray, Syracuse, N. Y.

12.—Colonic Dilatation (Congenital and Acquired) as a Factor in Chronic Intestinal Obstruction (Obstipation), Samuel G. Gant, New York City, N. Y.

13.—Acute Post-Operative Intestinal Paresis, J. A. MacMillan, Detroit, Mich.

14.—Prevention and Treatment of Post-Operative Retention of Urine, Frank C. Yeomans, New York City, N. Y.

15.—Intra-Rectal Rupture of Suppurating Sinus from Hip-Joint Disease, Ralph W. Jackson, Fall River, Mass.

16.—(a) Keloidal Tuberculoma; (b) Fibromatous Keloid, Alois B. Graham, Indianapolis, Ind.

17.—Differential Diagnosis of Ulcers of the Rectum, Leon Straus, St. Louis, Mo.

18.—The Surgery of Colonic Obstipation, Louis J. Hirschman, Detroit, Mich.

19.—Rectal Carcinoma, J. Rawson Pennington, Chicago, Ill.

20.—Reflex Disturbances Referable to the Rectum, T. Chittenden Hill, Boston, Mass.

21.—Some Practical Points Gleaned from the Observations of a Proctologist, Samuel T. Earle, Baltimore, Md.

22.—Some Practical Considerations of the Etiology of Diarrhea and its Treatment, J. Coles Brick, Philadelphia, Pa.

23.—Venereal Affections of the Anus and Rectum, Edward A. Hamilton, Columbus, Ohio.

The nineteenth annual meeting of the Vermont State Pharmaceutical Association was held at Burlington with headquarters at Hotel Vermont, Monday, Tuesday and Wednesday, June 24, 25, 26, 1912.

For the past ten years it has been my duty and pleasure as your secretary to send out the calls for our annual meetings. The duty and pleasure this year is, I assure you, an agreeable task as the approaching meeting is to be the best in our history, which is saying a great deal. That President Neville made a wise selection in naming Messrs. A. C. Booth and J. R. Hallihan local secretaries goes without saying. The program that they will mail you in a few days will reveal a list of attractions that will almost compel you to lock your stores and take the clerks with you. The boat ride is to be a little different and at the same time a little more attractive than ever. The steamer Chateaugay has been chartered for the day of the 26th. As for the attendance, we are already assured of a big crowd. It will be a time to meet your friends and former acquaintances and at the same time become acquainted with many new faces.

An attractive program will be arranged for the ladies. Remember they enjoy the outings and pleasures equally as well as yourselves. I would advise that you engage your rooms at once as the Republican State Convention meets in Burlington Thursday, June 27th and many of the delegates may be on the ground before that date. Those of you who do not wind your way through the valleys and over the hill tops with your auto, and are planning to reach Burlington by rail will do well to study the time tables as all the railroads change time the 23rd.

As Vermont scenery is now at its best, and Vermont scenery is the best, do you not think it is a debt that you owe yourself to take the wife, daughter or sweetheart for a few days' outing? Thus you will combine business with pleasure to the satisfaction of all concerned. On the boat ride you will fill your lungs with enough Oxygen to last until your annual vacation and when you return to your homes you will feel like new men and ready to take up the daily routine of business with renewed vigor. Our Queen City friends will be ready to greet us and the Keys of the City will be delivered to

us as they have been on many occasions before. To be a guest at the Hotel Vermont is in itself well worth the price of admission.

Do not stay at home and lecture to an empty hall about what should be done and who should do it, but come to the meeting and take an active part in the proceedings.

Your support and attendance means an added influence and is most earnestly solicited.

Dr. H. H. Rusby of New York, who was in attendance and talked to us last year, and who has attended Drug Conventions all over the country, remarked that the roof garden at the Hotel Vermont was the best Convention Hall he had ever seen.

Pass it along, all along the line "Will meet you at the Roof Garden."

Very respectfully,

W. E. TERRILL,

Secretary.

In Germany women are succeeding in medicine. The Berlin University has made inquiry as to the success of women who possess university diplomas and the results show 172 certified women doctors in Germany. Forty-five German women took American dental courses and sixty other women took German courses; all are prospering. Those women who took law and economic courses are not doing well.

Dr. A. G. Phipps, who practised in Gorham, N. H., for a number of years, died in that town recently after a long illness.

Dr. H. H. Bryant, Jr., who has been practising in Greenville, Me., for the past year, is now located in Gorham, N. H.

Two bills have just been introduced in the House of Representatives to regulate the sale of habit forming drugs. One proposes that it shall be regulated by international agreement and the other provides for an internal revenue tax on the crude drugs and a license on the exporters and dealers in such drugs as opium, cannabis and coca leaves and it further provides that importers and dealers in these drugs shall register with the commissioners of internal revenue.

Sandow, the strong man, has a sanatorium and physical culture institute in London, England;

it is conducted under medical guidance. The general medical council of London has just expelled another doctor from its registry for acting as a hired physician to the institute. Dr. Maurice Wallis, the senior physician, was expelled last year.

Dr. Thomas H. Hack of Proctor is just recovering from pneumonia. He has been out of practice more than two months and is in Orwell at present.

By a decision of the appellate division of the supreme court of New York Dr. Hector Griswold was fined \$50 for practising dentistry. He claimed to be a specialist in the treatment of Riggs disease, which he had treated. The New York State Dental Society in prosecuting the case claimed the doctor was practising dentistry.

Judge McPherson in the United States District Court recently fined a local Italian merchant 50 cents because he had sent a box of food-stuff to his sister in New York without first having it inspected by government pure food agents. Under this conviction, apparently the first on record, it will be impossible for members of families residing in different States to send each other foodstuffs as presents without first having submitted the same for inspection. This will eliminate the usual Christmas plum pudding, a piece of which invariably finds its way to folks away from home.

Dr. R. Gibson Perry is now practising in Wells River in the place of Dr. C. G. Richer, who has removed to St. Johnsbury, where he confines his practice to the eye, ear, nose and throat.

At the annual meeting of the New Hampshire State Medical Society Dr. John W. Staples of Franklin Falls was elected president of the society for the ensuing year and Dr. A. W. Mitchell of Epping, vice-president.

The sixteenth annual meeting of the Maine Medical Association, which was held in Portland on June 12-13, was one of the most successful in the history of the society, the papers being of exceptional merit and the attendance well towards the three hundred mark. Dr. R. H. Marsh of Guilford, a well known and popular physician, was elected president for the ensuing

year, and in view of the success attending the meeting it was decided to meet in Portland again in 1913.

It was announced in the June issue of the Journal of the Maine Medical Association that the journal had cleared expenses for the first year under new management, but additional support is desired from graduates of Bowdoin Medical College whether resident in the state or not. The journal is full of interesting matter, is well made up and of attractive appearance. It reflects great credit on the editors and management and anyone wishing to keep in touch with medical matters in Maine cannot do better than subscribe.

Dr. F. S. Eveleth has removed from Amesbury, Mass., to Concord, N. H.

Dr. D. C. Wiggins has left Concord, N. H., in order to return to institutional work in New York State.

Dr. J. W. Coolidge, formerly of Bristol, N. H., is now practising in Concord, N. H.

Dr. D. Caron has removed from Laconia, N. H., to Manchester, N. H.

Dr. J. L. Bethrap, who started practising in Wolfboro, N. H., last fall, died in Boston after an operation for appendicitis.

A hospital is to be erected in Boston which is to be devoted entirely to cases of appendicitis.

Dr. Frederick W. Hamilton of Tufts College is about to take a long vacation, at the end of which he intends to resign. He says Tufts College trustees want a solicitor of funds for a president rather than an educator and an administrator.

Dr. Morton Prince has retired from all active work at Tufts Medical School and Dr. John P. Thomas, his former assistant, is promoted to a full professorship.

W. D. Gibbs, president of New Hampshire College, has tendered his resignation to the trustees of that institution to take effect September 1.

Skeels in the *Cleveland Medical Journal* in a paper discussing the Diagnosis and Treatment of Eclampsia says:

The case of eclampsia probably does not occur, which gives no preliminary sign of its onset to a careful observer seeking for these signs. It is only that our usual methods of supervision of our patients are not always adequate.

Because a woman was examined a week ago without giving evidences of eclamptic toxemia is no proof that she did not have these evidences in abundance for two or three days before the actual convulsive seizures.

Of all the clinical warnings which we get of threatened eclampsia, albuminuria still remains the most uniformly present before the onset of convulsions.

No other sign or symptom is so uniformly present. As a matter of fact it is rare anywhere in medicine to have a symptom present in a larger per cent of cases.

The reverse of this statement, viz., that every pregnant woman showing a little albumin in her urine is in danger of convulsions is certainly not true, but the finding of albumin should make us at once increase the frequency of observations of any pregnant patient.

The writer concludes his paper with the following summary:

1. Albuminuria is the most uniformly present symptom of preeclamptic toxemia.
2. Its persistence, in spite of treatment, is more significant than its quantity.
3. Albuminuria, rise in blood-pressure, and edema are unfortunately "grouped" in their severity.
4. The child's interest in induced labor is identical with the mother's.
5. Eliminate vigorously before starting labor.
6. Whenever under reasonably vigorous treatment the patient does not improve, induce labor.
7. In the presence of actual convulsions: (a) If the cervix is open apply forceps or do version; (b) if the cervix is closed do vaginal or abdominal Cesarean section; (c) avoid the strain of labor.
8. Gas is the anesthetic of choice for operative procedure, next ether; never chloroform.
9. Avoid undue forcing of hot packs for fear of heat stroke.

10. Secure time for production of elimination by controlling convulsions with morphin.

11. Ordinarily the high blood-pressure needs no specific attention.

12. The successful treatment of eclampsia requires much personal attention by the physician.

OBITUARY.

James McChesney, M. D., Castleton, Vt., Medical College, 1849, the oldest member of the Rensselaer County, New York, Medical Society, died at his home in Troy, June 4th, aged 88 years.

BOOK REVIEWS.

A MANUAL OF CLINICAL CHEMISTRY, MICROSCOPY, AND BACTERIOLOGY.—By Dr. M. KLOFSTOCK and Dr. A. KOWARSKY of Berlin in their Institute for Medizinische Diagnostik in Berlin. Only authorized translation from the last German edition. Thoroughly revised and enlarged. Illustrated with fifty-three textural figures and sixteen colored plates. Reiman and Company, 1123 Broadway, New York. Price \$3.00.

This book originally gotten out for students of the authors in their courses in Boston has proven a very useful work for the students and general practitioners all over the world. It makes no pretense of being an exhaustive work but aims to give the easier laboratory methods in a way to make them practical for active clinical use. In this the authors have been unusually successful.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

BLANCHARD (*Medical Record*, May 18), gives the formula for a paste to use in old sinuses which he claims has all the advantages of Bismuth Vaseline Paste of Beck without any of its dangers. Any paste used for the purpose should be non-toxic and absorbable and in both of these requirements Bismuth Paste fails. Many deaths with a chain of symptoms comprising black tongue, ulcers of the mouth, bloody stools and sleeplessness and finally death, following the use of Beck's paste have been reported from all sections. In many cases in the writer's extensive experience the bismuth has settled down in pus sacs and sinuses and become permanently residual. The author's formula for making a perfectly innocuous paste which answers every purpose is as follows:

Formula No. 1—White wax 1 part, vaseline 8 parts. Mix while boiling.

Formula No. 2—Add iodine scales powdered with 20% potassium iodide mixed with the hot paste. This formula to be used in badly infected cases.

Formula No. 3—Ferri subcarbonate 1 part, white vaseline 2 parts. Mix and boil. To be used where it is desirable to obtain a skiagram.

After injecting a sinus with any of these pastes a covering of thick gauze saturated with alcohol should be applied to hasten solidification and prevent escape of the paste.

Finally the writer warns against (1) injecting a sinus in which X-ray shows a sequestrum, for in this way a natural drain is stopped; (2) injecting a primarily newly opened sinus, for in this case the retaining walls are not sufficiently formed and (3) against obstructing necessary drainage.

PHARYNGEAL INSUFFLATION.

In a preliminary note, S. J. MELTZER, Philadelphia (*Journal A. M. A.*, May 11), describes under the above name a new method of artificial respiration. In its simplest form it consists (1) in the introduction of the catheter into the pharynx; (2) pulling out the tongue; (3) pressing the suprahyoid region against the roof of the mouth; (4) putting the abdomen under constant pressure, and (5) connecting the catheter with a bellows. When air is thus introduced into the pharynx its escape otherwise than into the lungs is hindered by pressure in the suprahyoid region and by the abdominal compression. He has experimented on four species of animals, dogs, cats, rabbits and monkeys, chiefly on the first two, and found it efficient in keeping up the life of perfectly curarized animals for many hours in a perfectly normal manner. The method was also found effective in bringing about an ether anesthesia easily and readily. The real test of it will have to be made, however, on human beings, and when carried out with care it can certainly do no harm. The tube to be inserted into the pharynx should be a 15-American (or 22-French) catheter. It should be introduced about $5\frac{1}{2}$ inches from the teeth, the tongue should be pulled out and held by a tongue forceps, a pad about 1 inch thick placed under the chin and suprahyoid region and pressed upwards by a bandage tied, first only moderately firmly, over the head. A weight, about 13 pounds, is placed over the abdomen, then the tube should be connected with the bellows and the compression begun, not too forcibly, nor over ten or twelve times a minute. Instead of a bellows an oxygen tank might be used with a T tube in the connection between it and the catheter. The closing and opening of the open branch of the T tube for about two and three seconds, respectively, will cause inspiration and respiration. For the resuscitation of new-born infants a similar arrangement can be employed, using the rubber bulb of an atomizer and proper sized catheters in the pharynx and stomach. This method would also probably be sufficient for the resuscitation of babies 1 or 2 years old.

PLACENTAL SYPHILIS.

The interrelations of maternal and fetal syphilis are discussed by M. F. ENGMAN, St. Louis (*Journal A. M. A.*, May 11), who says we cannot dogmatically dismiss the theory of paternal inoculation, though it does not seem probable. It is contrary to experimental experience to hold with Trinchese, that the germs enter the uterus with the semen and penetrate the endometrium. According to Engman's view, syphilis, or more exactly speaking, the spirochete,

enters the system like any other similar organism, and finally, through growth and adaptation, reaches the circulation and is thus carried to all organs in metastatic groups. It proliferates in suitable chemical and physical environment and probably causes lesions which may give rise to clinical symptoms. Where it does not find suitable environment it ceases to multiply and dies. The resulting symptoms largely depend on the chemotropism of the particular strain of the germ; if it has neurotropic affinities, nervous phenomena are more apt to result than if its tropism was toward the skin, bone or other tissues. In most instances he thinks the human system has, in the course of centuries, overcome the pathogenic action and acquired a certain immunity. In most cases of syphilis the symptoms disappear, with or without treatment, after the first two florid stages, and do not reappear. There is, nevertheless, a latent syphilis, and the germs may again, incited by some vascular disturbance, wander into the blood and, under favorable conditions, make trouble. In congenital syphilis the woman is probably a latent syphilitic; the spirochetes are carried by the blood into the growing placenta, where they form colonies, generally on the embryonal side. Dr. Leo Loeb has suggested to the author that the placenta being a mixed organ, partly of maternal, partly of embryonal origin, does not fully share the mother's partial immunity, and therefore the fetus suffers, and it is possible also that certain actively proliferating tissues differ in their cell metabolism to such an extent that they do not respond to certain stimuli as effectively as do normally functioning tissues. The theory that the latent syphilitic mother, whose spirochetes now and then appear in the blood stream and are likely to settle at points of physiologic or pathologic disturbance, explains many, if not all, of the phenomena of parental syphilis and also of tertiary syphilis.

GONORRHEA.

F. KREISSL, Chicago (*Journal A. M. A.*, May 11), says that gonorrhoeal arthritis is more common in men than in women, the latter being almost immune, and he believes the cause of this is in the difference of structures and the lesser chance of traumatic injury in the course of treatment. As we see it at present, he says, it requires either local retention with subsequent trauma of some sort, or an abrasion of the protecting epithelium in order to allow the escape of the bacteria or their toxins into the blood or lymph-channels. This may be a mechanical trauma, but a sexual excitement or congestion from any cause may act the same way. At first glance it would seem that this metastasis into the joints, when occurring in the first week of the disease, might be due to an idiosyncrasy, but he doubts this. More recently the idea has been gaining ground that the source of the joint infection in the male is chiefly to be found in retention foci of the urogenital tract from the anterior urethra up into the renal pelvis. Such foci may occur in the follicular apparatus of the anterior urethra, in the glandular tissue of the prostate, in Cowper's glands, and in the seminal vesicle. Very few have yet recognized the importance of the seminal vesicle as a contributing factor, but Kreissl thinks retention in these of septic material is responsible in a very large proportion of chronic ever-recurring urethral discharges, relapse of epididymitis and cystitis and joint metastasis.

The more recent term "cryptogenetic" sepsis owes its origin largely to these retention foci. He enumerates the different types of the seminal vesicles as given by Picker, and points out the features distinguishing the joint disease from this cause from ordinary rheumatism. When asked some years ago how he treated these cases he replied by "treating the gonorrhoeal foci," and this he holds is the only logical procedure. If urethritis is due to retention foci, all methods will fail until the septic material is recovered from these pockets, and this can be done only by massage. The ordinary recommendation of using massage for the prostate and vesicles only once in four or five days for five minutes at a time is absolutely incorrect. It should be repeated daily, but should not take more than one-half to one minute daily. Chills and fever following the earlier treatment and lasting from a few hours to one or two days are positive evidence of the presence of septic material and may be taken as a favorable sign, but they should preclude massage for not less than twenty-four hours after their subsidence. The material should be kept until no more septic material appears in the washings for at least two weeks, and then it should be discontinued by gradually increasing the intervals. Other procedures of use are immobilization, Bier's hyperemia, constriction of the affected joint and the bacterin treatment.

TUBERCULOSIS.

R. C. NEWTON, Montclair, N. J. (*Journal A. M. A.*, May 11), says that as regards the open-air treatment of this disease and its non-medical treatment generally, a short study, mainly of English medical literature of the seventeenth and eighteenth centuries, will convince one that the writers of those days knew as much of the proper regimen for consumptives as is known to-day. He goes, however, still further back and quotes from Celsus and takes a long jump then to Sydenham, Buchan, Beddoes and others whom he quotes extensively in support of his thesis. In conclusion, he makes a suggestion, or rather offers the question, "Is it not high time that a chair of medical history were founded in every medical school in America?" The vital facts of the experience of the older physicians as recorded by them can still be utilized to advantage.

BACILLUS LEPRÆ.

C. W. DUVAL and C. WELLMAN, New Orleans (*Journal A. M. A.*, May 11), refer to a previous communication in which they found that the removed tissue particles of a leprosy infection used for culture must be hydrolyzed before the contained acid-fast bacilli will multiply. Hence it is essential to substitute at some period in the process a medium which contains split products of protein digestion, such as the amino-acids, until the culture has accustomed itself to more or less saprophytic conditions. It was early noted by them that, in the removed tissues bits which had become contaminated with putrefactive bacteria, the contained Hansen bacillus multiplied in great profusion whenever the extraneous germs digested or softened the tissue. Under these conditions multiplication occurred, regardless of the character of the medium employed and within a wide range of temperature. Further study showed that the multiplication *in vitro* of the acid-fast was the result of a hydrolytic action on the protein with the attendant

appearance of dissociate products supplying the necessary nutrient for the lepra bacillus. On account of the difficulty of obtaining and preparing the medium with the amino-acids, various nutrients have been experimented with, and in the summer of 1911 the use of the mammalian placental tissue was tested, and they found that the fluid extract of placenta alone, or combined with glycerin-agar, served as an admirable culture medium. The acid-fast bacilli in the removed and macerated tissue bits from human or rat leprosy multiply, so that within five to seven days the growth is distinctly visible to the naked eye. Subsequent transplants from the original culture of the lepra bacillus also flourish on this medium. "The medium is prepared as follows: The fresh human placenta is thoroughly macerated and ground up in a meat-chopper, after the blood is washed out by sterile saline, run through the attached vessels. To every pound of placental tissue there is added 0.5 liter of sterile salt solution. This mixture is now allowed to infuse for forty-eight hours at refrigerator temperature, when it is filtered through a previously tested No. N. Berkefeld filter for purposes of sterilization. To facilitate the filtration the cylinder of the Berkefeld filter is filled with clean, fine sterile sand until the candle is completely submerged. The clear amber-colored filtrate is then tubed or added to a 2 per cent. sterile agar, which has been previously melted and cooled to about 41 C. The placental juice and the agar are then thoroughly mixed and the mixture sloped. The addition of 3 per cent. glycerin possibly enhances its nutritive value."

TENDON TRANSPLANTATION.

The two methods of tendon transplantation are described by J. W. SEVER, Boston (*Journal A. M. A.*, May 11), and the *modus operandi* of the renewal of the tendon by silk inserts is discussed. The author sums up the conclusions of his paper as follows: "1. Tendon transplantation *per se* is at times useful. 2. Tendons lengthened or reinforced with silk are better in that they are not only stronger, but also can be used to greater mechanical advantage. 3. Silk or linen thread is an excellent material to use to lengthen tendons in suitable cases. 4. The growth of new tissue will penetrate and permeate the silk only slightly (in some cases not at all), and does not absorb it. 5. When the peritendineum and tendon sheath have been removed, some foreign body, such as silk, is essential for regeneration, to serve as a director for the new growth. 6. With the sheath and the peritendineum present and sutured, no foreign body need be inserted. In this case the new growth is true tendon tissue. 7. Without the presence of the sheath and the peritendineum, no true tendon tissue can be regenerated. Such tissue is merely fibrous tissue, lacking elasticity and subject to stretching. 8. The new 'tendons' are apt to be larger and stronger than the resected ones, especially when silk has been used to replace the resected portion. 9. Provided the sheath and peritendineum are preserved and function allowed early, adhesions may not occur. Without the sheath, adhesions may and do occur much more frequently."

VOLKMANN'S PARALYSIS.

C. A. POWERS, Denver (*Journal A. M. A.*, May 11), gives a further account of a case, first reported by

him in *The Journal*, March 2, 1907, p. 759. In spite of repeated operations to free the tendons and nerves in the paralyzed arm, there had been no improvement, and while there was a trace of motion at the wrist there was none whatever in the fingers or thumb which were in extreme flexion. Motion at the elbow was complete, but the forearm and hand were cold and there was a chronic ulcer of the little finger and, within a day or so before being seen, his middle finger had become bluish black. On consultation with Drs. Packard and Pershing, amputation was decided on, and it was performed a little above the middle of the forearm. The larger part of his paper is taken up with the report of the pathologist, Dr. R. C. Whitman, who describes the conditions at some length. The vessels were everywhere normal, but there was extreme degeneration of the muscle fibers and of the nerves. Whitman says that it seems probable that, in this particular instance, the changes were due to the combined effects of the anemia on the muscles and nerves. Whether this is the rule in the so-called Volkmann's paralysis, however, can only be determined by the study of many cases. Powers finds no record of any other amputation for this cause, but thinks it was indicated in this case.

MENINGEAL CARCINOMATOSIS.

W. F. BEERMAN, San Francisco (*Journal A. M. A.*, May 11), gives a history of a patient, aged 62, who had never been seriously ill before, but who began to suffer six weeks prior to being seen with severe headaches and, later, intense pain in the lumbar regions. The headaches are general and not associated with vomiting or visual disturbance, but the mere brushing of the hair was sometimes the cause of severe pain. They seemed to be located in the scalp. Later she showed inability to walk straight, and some mental confusion with visual hallucinations, and the headaches became most severe behind the right eye and in the left occiput. Careful examinations, with all the various tests usually employed, gave negative results. A few days before death there seemed to be a loss of vision on the right side, though tests with the finger failed to elicit hemianopsia or hemiambyopia. She was unable to see a person coming up on her right side. Four days later she became actively delirious, and there were muscular twitchings of the right shoulder and movements of the right hand. This state was followed by a semicomatose condition, which alternated with active delirium until three days before death, when she passed into deep coma, with a temperature of 100 to 102 F. The autopsy showed the brain and its membranes apparently normal, but after hardening, the pia-arachnoid was seen to be slightly thickened and opaque and microscopic examination showed that they were dealing with a malignant process, identified by Dr. Ophüls as carcinomatosis of the pia-arachnoid. The special points of the case are given, as the absence of the usual signs of meningitis, such as opisthotonos, Kernig's sign, etc., and the lack of emaciation or loss of weight, which is usual in such conditions. There was so little suspicion of malignant disease that no investigation for the purpose of finding a primary growth was made either before death or at the post-mortem, and the brain itself, after removal, seemed so normal that its microscopic examination was deferred for several months. Diffuse microscopic meningeal carcinomatosis such as this is rare. Beerman has been able to find only

eleven other cases reported, nine secondary to cancer of the stomach and two to cancer of the lung. When meningeal symptoms occur in cases in which the presence of cancer is known, suspicions might be aroused, but the primary disease may be also without symptoms and undetected. He thinks it should be emphasized that, in the majority of instances of the so-called toxic symptoms of cancer without demonstrable macroscopic lesions, careful and extensive histologic examination of the brain and its membranes will in most cases reveal the responsible lesions.

THE VERTICAL RECTUS INCISION.

MILES F. PORTER, Fort Wayne, Ind. (*Journal A. M. A.*, May 11), has decided to employ the vertical rectus incision only in cases in which its advantages as compared with other incisions are very considerable, and in only very exceptional septic cases. This decision is the result of the fact that, within the last month, he has had two cases of alarming secondary hemorrhage from the epigastric artery, one very nearly fatal. In both cases there was infection. In neither case was the artery injured at the time of the operation, so far as is known. The patients, both males, were aged, respectively, 36 and 8 years. In one case the hemorrhage occurred on the thirteenth day after the operation, and in the other on the tenth day. In both cases the hemorrhage was stopped by clamping the artery with a hemostat. The hemostats were removed after forty-eight hours. In neither case could the hemorrhage be attributed to pressure by the drain, for in the one case no drainage was used until after the hemorrhage occurred, and in the other there was one soft rubber tube placed well to the outside of the vessels through an ample opening, and the tube had been removed seven days before the hemorrhage occurred. In both cases there was considerable fascial sloughing. Both these accidents might have been avoided had the incisions been made well away from the vessels.

ARTHRODESIS.

R. E. SOULE, New York (*Journal A. M. A.*, May 11), speaks of the advantages of arthrodesis, especially in the lower weight-bearing limbs when other methods, as tendon grafting or muscle transplantation have failed and braces are out of the question. He has found it of service in the correction of certain deformities arising from infantile paralysis, hammer-toe, flat-foot and wrist-drop. There are certain conditions which must be borne in mind in considering the arthrodesis of a joint and in performing the operation. The patient should not be under 8 years of age, and care should be taken to secure exact apposition of cut bony surfaces and to maintain such apposition throughout the period of ankylosing. In infantile paralysis the extent of the paralysis producing the deformed condition must be determined, whether due to an actual loss of power in the affected muscles or simply to a weakening or overtire in the muscle balance. In infantile paralysis it will often be found that the varus or valgus deformity produced does not include the astragalus which may furnish a secure base for arthrodesis of the astragaloscaphoid, calcaneo-astragaloid, or of both of these articulations, leaving the normal astragalotibial articulation intact, thus permitting a full flexion and extension of the foot. This is an important point.

When the tibio-astragaloid articulation is relaxed Soule thinks that Whitman's operation of removing the astragalus and advancing the weight-bearing nearer the longitudinal center is better than ankylosing the tibio-astragaloid articulation, since the flexion, extension and contour of the foot are better preserved. In hammer-toe he has obtained satisfactory results from an arthrodesis of the flexed joint, done through the plantar surface, entering one side of the flexor tendons, making use of the shortened tendons as a splint and holding the toe straight and hyper-extended and the metatarsophalangeal articulation by a plaster-of-Paris dressing throughout the process of healing. Three cases are reported in which an arthrodesis of the astragaloscaphoid joint in the cure of painful pronated flat-foot was performed. He does not advise this as a universal procedure in flat-foot, though he thus produced a strong bony arch in his cases. In certain selected cases in wrist-drop, in which the flexors could be brought into use while the hand was held in extension on the plane with the forearm, it occurred to him that fixing the wrist by arthrodesis to prevent its dropping to its useless flexed position, a serviceable hand could be obtained, and two such cases are reported. He sums up as follows: 1. The operator should be sure that the deformity is a permanent one, not due to temporarily paralyzed muscles or to muscle overstrain or tire. 2. The patient should be old enough—not under 8 years. 3. All resistance to correcting the deformity should be previously overcome. 4. The operator should strive to cause as little mutilation of the continuous bones as possible. He should not use a curet. The exaggerated idea of removing a V-shaped piece of bone is overemphasized. Success depends on ability to make a flush joint, as a carpenter would say, and thereby correct the deformity, and also depends on ability to apply a fixing dressing which allows of the least separation of the opposed denuded bony surfaces.

RUDIMENTARY CLAVICLES.

M. BOLAND, Dallas, Tex. (*Journal A. M. A.*, May 11), reports a case of rudimentary clavicles in a young man, aged 22, presenting himself as a naval recruit. There was a slight prominence of the clavicles about three inches from the sternal end, and this was found to be the length to which the bone extended, there being only a slight ligamentous connection with the acromion process. The fingers could be inserted behind the ends of the clavicles and they could be drawn forward without discomfort through an arc of about 60 degrees. In other respects the young man was apparently normal. The other bones were fully developed but small. He had an excellent grip and could maintain the horizontal position of his shoulders in spite of heavy pressure. He could also throw them farther back and forward than can be done with normal shoulders and could raise his arms laterally over his head. A skiagraph of the rudimentary clavicles was obtained and is reproduced with the article. He passed out of sight before a photograph of his shoulders could be obtained.

TRANSFUSION CUFF.

R. C. BRYAN and F. R. RUFF, Richmond, Va., (*Journal A. M. A.*, May 11), illustrate a modification of the Crile transfusion cuff, made on a larger scale

and with a longer and larger handle and split opening on a smooth hinge so that it can be put around the artery and closed, thus doing away with the necessity of threading or pulling the artery through the cuff. It is also, they claim, easier in manipulation on account of its larger size and longer handle.

AXILLARY MAMMARY GLAND.

F. J. HIRSCHBOECK, Buhl, Minn. (*Journal A. M. A.*, May 11), after referring to Dr. Cantwell's article in the *Journal*, March 16, reports a case of supernumerary mammary gland in the axilla which appeared at puberty and was troublesome when actively using the right arm. On the birth of her first child it actively secreted milk. It is interesting, he says, on account of its being unilateral, perfectly normal in appearance and because of its advent with puberty and continuing for so long a time unrecognized until lactation was stimulated.

OPPENHEIM'S MYATONIA.

I. M. SNOW, Buffalo, N. Y., (*Journal A. M. A.*, March 16), describes the disease known since 1900 as Oppenheim's myatonia, and reports a case. It is characterized by serious loss of the motor function, generally involving only the extremities, and occurring in early infancy. There is not complete destruction of motor power, as traces remain in all muscles, but the condition becomes aggravated as the child grows older. The legs are more involved than the arms, as a rule. The sphincters remain uninvolved. Faradic and galvanic irritability are seldom totally lost, but may disappear in certain muscular groups. The mental condition is fair or normal, though, of course, the child does not develop as fully as normal children and may be considered backward. The disorder may not be recognized at the first, being taken for backward development. If the patient lives, strength returns more or less to certain groups of muscles, but no case completely recovers. No cases have been reported in adults, and heredity and sex seem to have no influence. In nearly all cases the symptoms date from birth. Various opinions have been held as to its pathology. Oppenheim considers it as retarded muscular development and always congenital. It is easily recognized if one is familiar with the description of the disease. The prognosis as to complete recovery is not good, though partial recovery may be expected. All authorities recommend vigorous treatment, massage, electricity and the use of strychnin. Training of muscles and encouraging the patient to utilize them is very effective. Snow thinks that there is reason to suppose that the disease is more common than is usually reckoned. Griffith, in 1910, found forty-nine cases of record and Dunn, in 1911, quotes thirty cases. Both authors, Snow remarks, evidently consulted the same bibliography. The case reported is that of a child 2 years and 9 months old, backward, not talking much, with teeth fully developed and without absolute loss of power in any muscles. Educational treatment seemed most effective in this case.

AXILLARY MAMMARY GLANDS.

J. D. CANTWELL, Davenport, Iowa (*Journal A. M. A.*, March 16), reports the case of a woman, aged 22, who, after delivery, suffered from swelling and pain in the axillas which caused her to keep her arms

extended at right angles from her body. In each axilla was found a tumor as large as half an orange, 3 inches in diameter at the base and 1½ inches high, with an areola and nipple in the center of the dome, from which milk escaped on pressure or the use of the breast pump. These increased in size until the sixth day of the puerperium, then gradually decreased, leaving only the areola and nipple to indicate their existence on the fourteenth. He has found no case reported as symmetrical as this one, and but eight cases in which axillary glands were provided with nipples. There was no question as to the nature of the secretion in this case.

X-RAY IN PREGNANCY.

P. S. O'DONNELL, Chicago (*Journal A. M. A.*, March 16), says that he has developed a technic which not only shows clearly the fetus in the uterus, but also is capable of showing many abnormalities. He has made over 150 exposures, and finds that there is not the slightest danger to either the mother or the child. The position of the fetus can be clearly determined from the fourth month on and the obstetricians who have seen the plates think the method of great value. The exposure is less than one-fifth of a second with a medium tube. The technic he says is difficult to describe in print, as the conditions vary with each case. He includes in his article the report of a case by Dr. J. B. Murphy which testifies to the diagnostic value of the method, and also Dr. J. B. De Lee's remarks on the same. In the diagnosis of pregnancy the latter says that the x-ray will have a limited field, as the usual methods are generally sufficient, but in fat women or where there is need of differentiation of pregnancy and large fibroid, it may be helpful. In cases in which abdominal examination is not permitted the x-ray might discover the fetus. It also might be helpful in settling the best method of delivery, revealing osseous disease and deformity, etc.

X-RAY IN PREGNANCY.

ANGUS McLEAN and P. M. HICKEY, Detroit (*Journal A. M. A.*, March 16), report the successful use of the x-ray in a patient in whom the differentiation between pregnancy and large fibromyoma failed by other methods. They refer to a previous paper by Dr. Hickey suggesting this method, and the case illustrates its value. It illustrates the ease with which the diagnosis can be made and the elimination of uncertainty in many cases in which the thickness of the abdominal walls and the obesity of the patient cause failure of the ordinary methods. Two x-ray exposures, each of four seconds, were employed, the rays being directed laterally through the large pendulous abdomen. The case was well-advanced pregnancy, and a normal child was born within a little over a month.

MALT SOUP.

The method of making and the uses of malt soup, which has been highly valued in Germany as a remedy for babies with gastro-intestinal disturbances, are described by J. M. BRADY, St. Louis (*Journal A. M. A.*, March 16). Malt soup is prepared as follows: "Two ounces of wheat flour are mixed with 11 ounces of whole milk and then passed through a sieve. In

a second vessel 3 ounces of extract of malt are mixed with 20 ounces of warm water. The two mixtures are then poured into a porcelain vessel, 2½ drams of 11 per cent. carbonate of potassium added, and the whole cooked with constant stirring for twenty minutes and then brought to a momentary boil; any loss through heat is made up by the addition of boiled water. This mixture has a formula of fat 1.20, protein 2.00, carbohydrates 12.00, and has a caloric value of 800 to the liter. The above is designed for babies with a body weight of from 6½ to 10 pounds from the third to the ninth month. For babies under 3 months old the flour is reduced to 1 ounce and the malt-extract to 2 ounces. It must be kept on ice and warmed before being fed. It has a sweet pleasant taste and is taken greedily by all infants." According to Keller and Czerny, there is a definite indication for the employment of this food, i. e., in milk nutritional disorder described by them. This clinical picture has been long misinterpreted. It begins insidiously with irregular gain or loss in weight, and increase of food does not mend matters. The baby becomes pale and the skin loses its elasticity. The muscles are flabby. Restlessness, peevishness and inability to sleep are common. Abdominal distention is often present, and sometimes vomiting. The stools are grey or whitish and very dry, frequently foul smelling. Their reaction is markedly alkaline. They may become loose and acid in case of complicating dyspepsia or intestinal infection. Lacking proper treatment many of these cases go over into marasmus. The disease is a severe metabolic condition and non-bacterial. It is caused by a high percentage of fat in the food, and owing to the recent popularity of top mixtures it has become frequent. The therapeutic test, diminution of the fat percentage, reveals the condition. Brady has used malt soup in this condition with advantage and says that even if marasmus has appeared the treatment is sometimes successful. It is not adapted to infants under 3 months in whom albumin milk is more apt to be of service. In diarrheas it is frequently of inestimable value. It must be remembered, however, that some infants suffer dangerous symptoms of intoxication from the use of this food, and a case illustrating this is reported. Babies who show this should have a rectal temperature taken regularly twice a day. The cause is the high percentage of carbohydrates, and any rise of temperature should be followed by an examination of the urine for sugar. The phenylhydrazin test is the best. The symptoms, even when severe, subside on withdrawing the carbohydrate, but there is danger that physicians may misinterpret the symptoms and continue these in the food. The author's conclusions are as follows: "1. Milk nutritional disorder (Keller-Czerny) is a definite clinical condition occurring subsequently to the administration of fat of cow's milk. 2. It is frequently cured, particularly after the third month, by Keller's malt soup. 3. Even if the metabolic disturbance has persisted so long that marasmus has developed, malt soup is often of signal service. 4. For these babies to recover on malt soup they must have a high carbohydrate tolerance. 5. Malt soup is frequently a good diet in diarrhea."

INSANITY IN PRISONS.

P. E. BOWERS, Michigan City, Ind. (*Journal A. M. A.* March 16), speaks of the importance of the proper diagnosis of insanity in individuals convicted of

criminal acts. He says it is of paramount importance that the general practitioner should be able to diagnose mental disorders in their beginning and should be familiar not only with the common mental symptoms but also with the crimes and misdemeanors that are attendant on mental diseases. As regards the number and seriousness of criminal acts the epileptics come first and the paranoics second. The manic depressive group do not furnish a large proportion of insane criminals, though suicide is sometimes attempted. The misdemeanors and crimes of dementia præcox are generally of a mild character, while those of senile and arteriosclerotic dementia are more serious. Alcoholism also furnishes its share, especially as regards offenses of a sexual nature. The offenses of the paretic are seldom dangerous to life, and he specially reports a case where a paretic was sent to a state prison for a term of from one to eight years for petty larceny. In the majority of state prisons cases of this type receive no proper custodial or medical treatment and are troublesome as regards prison discipline.

NEW TEST-MEAL.

DUDLEY ROBERTS, Brooklyn (*Journal A. M. A.*, March 16), says that the information gained by an Ewald test breakfast is limited. We learn little as to the motility of the stomach or of the actual acidity or quantity of the gastric juice. After noticing the attempts at a more satisfactory test-meal that have been made by Mathieu, Sahli and Friedman, he gives the results of his own experiments and offers a test-meal made as follows: To 300 c.c. of freshly made weak tea 30 gm. of lactose are added. This fills two ordinary teacups. It has been found of practical advantage to give at the same time one pilot biscuit or two soda biscuits. Crackers containing salt, sugar or dextrin should not be used. After this test-meal has remained in the patient's stomach for an hour a liberal portion is extracted, preferably with the bulb. About 200 c.c. of water is forced into the stomach through the tube. The mixing in the stomach is effected by partly withdrawing the contents and forcing them back again several times before the extraction of the second sample. The two samples are then ready for analysis. The free acidity of the first is determined and has been found to be comparable with that from the Ewald test-breakfast. The total acidity of both specimens is then estimated with great care, using phenolphthalein as an indicator. "The residue, after the extraction of the first portion, is determined by means of the Mathieu formula, as follows: Let A equal the acidity of the first portion and B the acidity of the second portion; then $B \times 200 \div (A-B) = X$, i. e., the residue. To find the total stomach contents after the lapse of one hour it is necessary, of course, to add the quantity of the first specimen to the residue as found by the above formula." The lactose in the first specimen is determined by the use of the Gerard and Allen method as modified by Rudisch and Cellar. The method of determining just what portion of the stomach contents is test-meal and what is gastric secretion is given in detail, as well as the determination of the motility of the stomach. The advantages of the test-meal over the butyrometric test-meals previously suggested are claimed to be the ease of preparation, the palatability of the meal and the simplicity of the lactose determination.

Hay Fever

and the

Adrenalin Treatment

In the various forms mentioned below Adrenalin offers to the medical profession a most efficient palliative in hay fever. It successfully controls the nasal discharge, allays the congestion of the mucous membrane, and reduces the swelling of the turbinal tissue. It tends to restore natural breathing, abates the desire to sneeze, and in general induces comfort.

Solution Adrenalin Chloride

Adrenalin Chloride, 1 part; physiological salt solution (with 0.5% Chloretone), 1000 parts.

Dilute with four to five times its volume of physiological salt solution and spray into the nares and pharynx.

Once glass-stoppered bottles.

Adrenalin Inhalant

Adrenalin Chloride, 1 part; an aromatized neutral oil base (with 3% Chloretone), 1000 parts.

Dilute with three to four times its volume of olive oil and administer in the manner described above.

Once glass-stoppered bottles.

Anesthone Cream

(FORMULA OF DR. J. E. ALBERTS, THE HAGUE, HOLLAND.)

Adrenalin Chloride, 1:20,000; Para-amido-ethyl-benzoate, 10%; a bland oleaginous base.

A small quantity (about the size of a pea) is applied three or four times a day, the patient snuffing it well into the nostrils.

Collapsible tubes with elongated nozzles.

Anesthone Inhalant

Adrenalin Chloride, 1:10,000; Para-amido-ethyl-benzoate, 10%; an aromatized neutral oil base.

Dilute and administer in the manner suggested for Adrenalin Inhalant.

Once glass-stoppered bottles.

Anesthone Tape

A selvage-edge tape, one-half inch wide, impregnated with a 1:20,000 solution of Adrenalin Chloride and 5% soluble salt of Para-amido-ethyl-benzoate, agreeably perfumed.

A piece two or three inches long is cut off and inserted in each nostril.

Small vials.

THE GLASEPTIC NEBULIZER.

This is confidently believed to be the most practical atomizer ever offered to the medical profession. It combines asepsis, convenience, efficiency and simplicity. It is readily sterilized, the working parts being *one piece of glass*. It produces a fine spray and is suited to oils of all densities, as well as aqueous, spirituous and ethereal liquids. Price, complete (with throat-piece), \$1.25.

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THERAPEUTIC NOTES.

A SUGGESTION IN TETANUS.—The physician who has ever faced the horrors of tetanus and has seen his ministrations go for naught, will not hesitate to add to this disease's classic treatment, any agent holding out even the faintest ray of hope. Quite a number of physicians have employed PASADYNE, (Daniel's Concentrated Tincture of *Passiflora incarnata*), in tetanus and some have reported favorably on it. It is advised, therefore, that PASADYNE be employed as an adjunct treatment in this disease. It possesses marked calmative powers, and may mitigate the distressing convulsive seizures of this dreaded infection. A sample bottle will be furnished if application be made to the Laboratory of John B. Daniel, Atlanta, Ga.

RECONSTRUCTION FOLLOWING TYPHOID FEVER.—In some instances, the convalescence of typhoid fever presents a debility closely akin to a tuberculous predisposition, which indicates the need for more potent reconstructives than the stomachics and tonics usually employed for this purpose. This need is well met by Cord. Ext. Morrhuæ Comp. (Hagee). Usually in these cases the blood stream is thin, the processes of metabolism are interfered with and the vital powers remain far below par. The tissues are easily susceptible to graver infections, such as tuberculosis. Cord. Ext. Ol. Morrhuæ Comp. (Hagee) will prove its worth as an up-builder in this class of cases, charging the blood current with nutritious elements and finally overcoming the debilitated state. Its palatability gives it added utility, a feature worthy of consideration in choosing remedial agents of this character.

THE HAY FEVER RIDDLE.—Despite the many therapeutic advances of recent years, "what to do for the hay fever patient" continues to be something of a puzzle. The long-sought specific still eludes us. Nevertheless, the malady is not quite the enigma that it once was. Medication, if still empiric, is not ineffective. The symptoms of the disorder can be controlled or minimized; relief, though temporary in many cases, may be obtained; and for these blessings the afflicted patient and the sympathetic physician may well be thankful.

For use in the treatment of hay fever there is, of course, a long line of so-called available medicaments. One dependable agent which comes naturally to mind in this connection is Adrenalin. Indeed, it is doubtful if any other single medicinal substance has been so largely and successfully employed in the treatment of vasomotor rhinitis. As adapted to the needs of the hay fever sufferer the product is available in a number of convenient forms, as Adrenalin Chloride Solution, Adrenalin Inhalant, Anesthone Cream, Anesthone Inhalant, Anesthone Tape, etc. The various solutions are used in spraying the nares and pharynx, the cream for snuffing into the nostrils, the tape for packing the nostrils. All cases of hay fever, of course, are not amenable to the same form of treatment. It is a logical presumption, however, that a vast majority of them ought to yield to one or more

of the preparations above referred to. The Adrenalin products, as is well known to most physicians, are manufactured by Parke, Davis & Co., who will doubtless be glad to send literature regarding them to any practitioner. Requests for printed matter may be addressed to the company at its main offices and laboratories in Detroit, Mich.

THOUGHTS OF AN ELDERLY PHYSICIAN.

1. Care for as you would be cared for.
2. A good physician is one who can individualize.
3. Never show anger towards a child.
4. Show to the patient that you perceive the *why* of his ailment, but do not render him as wise as yourself.
5. Go, when the patient requires you, but do not go beyond his desires.
6. Treat a question in detail: A massage may be measured by the proportion of talc expended.
7. A doctor in a vehicle never looks like a fool.
8. Always remember, by the bedside, that you have treated a similar case and that you relieved your patient.
9. Everybody requires a miracle, a sick person most of all.
10. Make people understand frequently that your conception of your profession differs from theirs.
11. Take any payment when offered (adds the French monitor). It is customary in England, and English people are acquit of false sentiment.
12. In regard to your fee, remember that people will weigh your science in proportion to the number of dollars you receive.
13. It is never permissible for a doctor to be in a hurry except in the midst of an operation, or when he finds a patient sleeping.
14. Never explain to a wise patient; you may thereby conflict with his ideas, and his theories of treatment.



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PROPHYLAXIS—The very nature of artificial foods and cow's milk predisposes to their rapid decomposition. A few drops of Glyco-Thymoline added to each feeding corrects acidity and prevents disorders of stomach and intestines.

TREATMENT—As an adjunct to your treatment of summer complaints, Glyco-Thymoline used internally and by enema corrects hyper-acid conditions, stops excessive fermentation and prevents auto-intoxication. It is soothing—alkaline—nontoxic.

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Into a general store of a town in Arkansas there recently came a darky complaining that a ham which he had purchased there was no good.

"The ham is all right, Zeph," insisted the storekeeper.

"No, it ain't, boss," insisted the negro. "Dat ham's shore bad."

"How can that be," continued the storekeeper, "when it was cured only a week?"

The darkey scratched his head reflectively, and finally suggested: "Den, mebbe it's had a relapse."—*Journal of Preventive Medicine.*

Announcement is made by the medical department of Tulane University of Louisiana, New Orleans, of the inauguration of a department of tropical medicine, hygiene and preventive medicine, beginning October 1, 1911. Professor Creighton Wellman, assisted by a competent staff, will have charge of the department.—*Western Med. Review.*

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EPILEPSY IN CHILDREN AND ITS TREATMENT WITH BROMIDE.

Paul Boncour (*Prog. Méd.*, March 19, 1910) thinks that, although the bromide treatment is the best for epilepsy, its success depends greatly on the method of administration and the attention given to the details of diet and hygiene. It is indicated in all cases in which convulsions are present and should stop all motor phenomena, but in cases of petit mal, without any convulsive movements and of mere dizziness, it is less successful. The cause of the attacks should be carefully sought out and as far as possible removed. A daily history card kept by the par-

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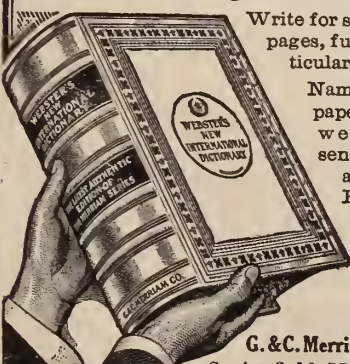
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ents is a great aid to the physicians in the knowledge of the number and type of convulsions, and thus of the effect of bromides. The bromide must be given in sufficient quantity and for a sufficiently long time, generally for several years. The author prefers a mixture of the three bromides, sodium, potassium and ammonium, to which he adds in some cases calcium bromide. The dose must be carried up to a point at which the motor manifestations are controlled without marked bromism, and must then be kept at that point for months or years. Irregularity and lowering of the dose without permission is responsible for most of the failures. A great aid to the effect of the treatment is given by restricting the amount of chloride of sodium that is used with the food to a small quantity. The bromide is then effective in smaller doses. It should be continued three years after the last attack.—*American Journal of Obstetrics—Archives of Pediatrics.*

A million dollar Methodist hospital is to be added to the medical school of the Southern Methodist University, at Dallas, Texas.

"First aid packets" of the U. S. army kind have been put on all locomotives, boats and heavy machines in the Canal Zone.

The discoverer of the lepra bacillus, Dr. G. Armauer Hansen, died in his home, Bergen, Norway, Feb. 13th, aged 70 years. During the '80's he studied the disease at various American centers. He was a tireless worker in his chosen specialty.

Within a radius of half a mile of Harvard Medical School there are already built or under construction sixteen medical institutions, representing in value of buildings and capitalized funds about \$20,000,000. The five new hospitals, two of which will move into new quarters, added to the eleven medical institutions already constructed, will make the hospital and clinical facilities of the school extraordinary. The buildings at present under construction are the Harvard Memorial Cancer Hospital, the Thomas Morgan Rotch, Jr., Building, which will house the Infants' Hospital, the Children's Hospital, the Peter Bent Brigham Hospital, the State Psychopathic Hospital, the Robert Brigham Hospital, and in addition a Harvard dormitory and medical union club house, the latter of which is only projected at present.

In view of attacks on milk pasteurization, before Mr. Nathan Straus, the noted New York philanthropist, sailed for Rome as U. S. representative to the International Tuberculosis Congress, he offered \$1,000 for any case of scurvy, rickets or anemia in an infant due to feeding with properly pasteurized milk.

The Esch Phosphorus Bill, aimed to stop "phossy jaw" in match makers, was buried, but later favorably reported by a subcommittee of the House Committee on Ways and Means. And then the standpatters, creatures of the Match Trust as of other trusts, pretend surprise at the "political hysteria" of the progressives who demand direct legislation.

The remarkable success of practical Germany with her recent Dresden International Congress on Hygiene and Demography must put America on her mettle as the fifteenth congress takes place next September in Washington. It will mean a great advance in health education of the masses.

Professor Davenport in his admirable work on the Diseases of Woman, Dr. L. G. Boyd, Tunnelton, Ind., reviewing adds:

How can we prevent dysmenorrhea? It can be done by keeping the patient under morphine, but this is a barbarous solution of an important problem. It in fact does not solve it. Morphine is inadmissible and improper in these cases. It produces derangement of the secretions and tends to establish a drug habit that will make life a burden. I have long employed a remedy that not only relieves the pain, but produces no habit and is not dangerous. I refer to Dioivurnia. It is a most valuable uterine tonic, antispasmodic and anodyne of exceptional worth. I rely upon this remedy to prevent dysmenorrhea, which as Professor Davenport truly says is seen in almost all, if not in all women. I have my patients who suffer with dysmenorrhea to take Dioivurnia, beginning two days before menstruation is due and persist in it until the period has passed. I give it in doses of one to two teaspoonfuls every three hours throughout this time. When this direction is followed I have found that my patients go through the period without pain. The adoption of this treatment I may say also, has brought me many grateful compliments.

Where the patient is very nervous having the tendency to hysteria, neuroses or uterine congestion, I administer Neurosine one part, in combination with two parts of Dioivurnia, which always gives relief.

MISTAKEN IDENTITY.

"Mary," said the head of the house one morning, "I called Jimmy four times and he didn't answer, so I turned down the covers on his bed and gave him a good spanking."

"Oh, John, how could you? That means I'll be hunting for a new cook!"

"How's that?"

"Jimmy stayed all night at Smith's and the cook slept in his bed last night."—*Medical Brief.*

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The Medical Department of the University of Vermont will appreciate it very much if any of the Alumni can furnish catalogues of the Medical Department of the following dates to complete the files, 1857-66-7-8-9-71 and 73. These may be sent to the Dean.

Little Nelly told Anita what she termed a "little fib."

Anita—"A fib is a story, and a story is the same as a lie."

Nelly—"No, it's not."

Anita—"Yes, it is, because my father said so, and my father is a professor at the university."

Nelly—"I don't care if he is. My father is a real estate man and he knows more about lying than your father does."—*U. Presbyterian.—Western Medical Review.*

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ORIGIN OF THE WORD "ACHE."

An English writer, Basil Hargrave, in his book of "Popular Phrases and Names," gives the origin of the word "ache," now pronounced as one syllable, which, in the time of Shakespeare and much later, was pronounced as a word of two syllables, so that in "Tempest," where Prospero threatens Caliban, the true reading was:

Till all thy bones with a-ches make thee roar
That beasts shall tremble at the din.

The word ache comes from the Anglo-Saxon "acan" or "acian," the "c" pronounced "k." Jonathan Swift makes "old a-ches throb" and Isaac Disraeli in "Curiosities of Literature" says that what the poet and linguist wished to preserve was lost by the modern printer who, unaware of the old pronunciation, made "aches" one syllable and then to complete the meter crowded the word "will" into the line, making it "aches will throb." Butler in Hudibras used the old form:

Can by their pains and a-ches find
All turns and changes of the wind.
—*American Medicine.*

The Radium Institute, in London, which was founded by King Edward VII, with the financial support of M. Cassel and Viscount Iveagh, was opened on August 14th. As is well known, this institute was founded for the purpose of demonstrating the therapeutic value of radium, and for the treatment of disease with radium rays.

The physicians of the workingmen's club in upper Hungary have refused to do any work on the old terms for the club. Physicians from twenty-five other districts joined their colleagues, so that the club had to come to terms with the practitioners at last. This is the first successful medical strike on a large scale in Hungary.—*Western Med. Review.*

TECHNIQUE OF ARSENOBENZOL INJECTION.

Gottheil (September *Progressive Medicine*) considers the intramuscular injection the best

method, since it produces a slower and longer continued action than the rapidly excreted intravenous injection. The following apparatus is required: A covered glass vessel to hold the solution; a stoppered graduated glass vial to make it in; some glass balls to help solution; an all-glass syringe and a fairly large needle at least 1½ inches long; a 4 per cent sodium hydroxid solution and a little dilute acetic acid. The powder (arsenobenzol) is dissolved in from 5 to 15 cc. of warm, sterile distilled water with the aid of the glass balls; when entirely dissolved about 2 cc. of the sodium solution is slowly added. A gelatinous mass results, which dissolves entirely upon the addition of a few more drops of sodium solution. Just enough of this latter is used to effect solution; if a little too much has been employed, a drop of the acetic acid must be added. The injection site is selected as follows: Map out the posterior border of the crest of the ilium and the outer border of the erector spinae muscle; one inch above the crest and one inch inside the erector border gives the correct location. The injection should not be given in the office, and should be followed at once by a hypodermic injection of morphin.

The following, sent us by a country physician, illustrates one of the diagnostic difficulties met with in country practice:

"Dear Sir Mr. Doctor: My Mother she is sick on Liver and stomach Trouble. she got Belleache all Day. Some times she is offle Bad. So that she can't do Her Work. I wish you could Give Her the Best Medicine you got for That stomach and Liver is Her trouble, and she got to trow up all the time and Her Bowels Won't Move very Good. Send the Medicine along With Mr. L. B. ———. She is 50 years old, and she got Pain in the Back to. She come Herself, But the Roads are to Bad, and to far. she can't Make the Trip. she trows up Gall. So that's all.

"Much oblige if you send Medicine out.

"Respectfully yours,

"B. B. ———."

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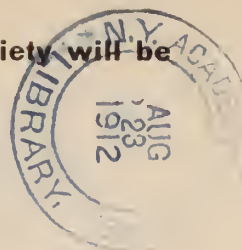
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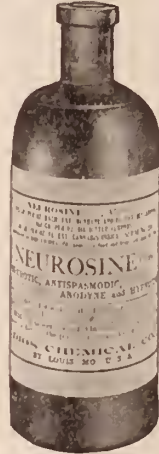
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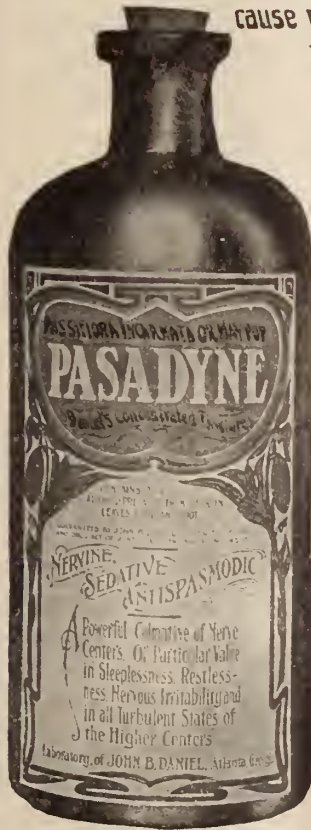
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ECLAMPSIA IN THE NEW-BORN.

Effa V. Davis, of Chicago, calls attention to the danger of the transmission to the new-born infant of the toxemia of the eclamptic mother. The child may be still-born or asphyxiated, or may die in a few hours of convulsions. A certain number, however, of greater resistance, survive, but these seldom fail to show some results of the mother's disorder. If they survive by the care of the obstetrician, they often go to swell the number of weaklings that call for the care of the pediatrician. They, she believes, will account for a large number of the cases of icterus neonatorum and high temperatures not due to digestive tract trouble, etc. A certain proportion of them may be relieved and their lives saved by careful attention to the elimination of the toxin through the bowel and the kidneys. The author believes that it is a mistake to put the child immediately to the mother's breast, and advises in preference the employment of a healthy wet-nurse. She has some faith in small divided doses of calomel and sodium bicarbonate, with an initial dose of castor

oil and plenty of sterile water to flush the bowels. Weakened solutions of fennel or chamomile with a little sugar for a few days, are also favored, and if the temperature rises, two or three drops of spirit of niter for one or two doses to establish the urinary excretions. Overdosing should be avoided, especially of calomel as bowel hemorrhages are not uncommon. Warm baths and keeping the body warm are of the utmost importance. She is of the opinion that the milk of the toxic mother contains toxic ingredients and is the cause of infantile indigestion and its results. She divides the mothers of this type of infant into two classes: First and worst, are those with poor physique and a bad family history, such as would be called "poor risks" by life-insurance companies. The second class are those who primarily have good physiques and a good family history, but have disordered their elimination by luxurious living, idleness, etc. Both of these classes may prove more liable to have toxemias that may endanger their offspring than is the woman who has a damaged kidney from other causes and who is liable to abort early and be free from eclampsia.—*Jour. A. M. A.*, June 1, 1912.

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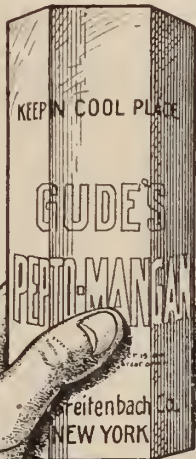
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Vermont Medical Monthly.

VOL. XVIII.

AUGUST 15, 1912.

NUMBER 8.

ORIGINAL ARTICLES.

NEURALGIA.*

BY

DR. S. W. PAIGE,
St. Albans, Vt.

Definition and Nature.—The term neuralgia in its strict sense signifies pain along the course of a nerve. The word has been used, however, to indicate conditions in which such pain exists purely as a neurosis, to distinguish it from the cases in which inflammatory and degenerative changes are present in the nerve, to which class the name "neuritis" is applied.

Probably the majority of the neuralgias are due in part only to any primary or essential neural disorder of the nervous centers, and indicate, in addition, some irritation of the sensory nerves from without.

This is eminently true of most of the typical neuralgias of the superficial nerves, and as our knowledge of the course and pathology of these diseases advances, many of the conditions formerly classed under the neuralgias are shown to be cases of neuritis. For instance, the gradual onset and decline of certain forms of sciatica and brachial neuralgia, their protracted course, the limitation of the pain to the tract and distribution of single nerves, and the fact that the pain is apt to be remittent rather than intermittent, together with the presence of tenderness along the nerve trunk, persistent alterations in the sensibility of the skin, and even muscular atrophy and trophic changes in the skin, all tend to point to the neuralgia being secondary to a neuritis, while examination of the nerve shows characteristic changes of inflammation and degeneration.

Then there are cases, such as some of the facial neuralgias, in which the character of the pain is that of neuralgia, persistent, intermittent, and frequently in neurotic individuals; and here examination of the nerve, after the affection has

existed some time, often shows degenerative changes. The question then arises, Are these changes primary or secondary—i. e., is the case a slow progressive neuritis from the start, or are these changes in the nerve secondary to the long persistent disorder of function which underlies the pain? The recent ion theory of Loeb, that the transmission of nerve stimuli is due to chemical change in the nerve substance, might well account for a permanent change resulting from constant severe pain persisting in the nerve.

Finally, there is the class of neuralgias in which the character, situation, severity, and duration of the pain are wholly determined by processes acting on healthy sensory nerves, and may be called reflex or symptomatic neuralgias. These irritative causes, however, if long continued, may induce a permanent neuralgic habit of the nervous centres.

The group of habit pains might also be classed as neuralgias, and both these and other forms may often be relieved by mental influences.

It is uncertain whether there are special nerves and nerve centres intended for the conveyance and perception of painful impressions, but the results of experimentation and the difference in the behavior in disease of this function—if so it may be called—from the other sensory functions, lead to the belief that such may be the case.

Again, it may be that the nerves of pain are the same with the nerves for the general feelings (*Gemeingefühle*) of satisfaction or discomfort, which accompany, and yet are distinct from, the special sensations of relation, such as touch, temperature, and the like.

If there are special nerves and nerve centres for pain, it is probable that they are the seat of the disease in neuralgia.

It is common to hear the neuralgias of the superficial nerves spoken of as the only affections really deserving the name, and as belonging in a different category from the visceralgias and the periodical headaches, as well as from the pains of intermittent recurrence, but of ill-defined seat, to which children and feebly

*Read at the 9th annual meeting of the Vt. State Medical Society.

nourished persons, and especially neurotic persons, are liable.

In so far, however, as these painful disorders occur under similar conditions with typical neuralgias of the superficial nerves, and are themselves of unknown origin, there is much gained in treating of them both as kindred affections, and contrasting them with each other.

General Etiology and Pathology.—An inherited neuropathic tendency is the most important cause of neuralgia, and it is often impossible, in a given case, to measure the degree to which its influence is felt. It is, however, a far more important element in the migraines and the visceralgias than in the superficial neuralgias, and among the latter its effect is most strongly felt in the neuralgias of the fifth pair, and of the intercostal nerves.

The exact pathological state of the nervous centres in neuralgia is not known, any more than it is in the case of the other neuroses. Some of the conditions that give rise to it, are, however, better understood.

Chief among these are: Anemia, which acts both by impoverishment of the blood, and by overcharging the blood with carbonic acid; the presence of abnormal substances in the blood, as in gout, diabetes, malaria, chronic nephritis, and metallic poisoning; absorption of the products of imperfect digestion or metabolism; the impairment of the vascular tonicity, as in fatigue; peripheral irritations, such as disease of the teeth, eyes, respiratory and digestive tracts, uterus, and ovaries; chronic inflammation of the nerve sheath; localized anemia or congestion of nerves or nerve centres.

Anemia and states of nervous debility or chronic fatigue are common underlying causes of neuralgia, even though not the whole cause, and it is almost always best to suspect them and to fortify the patient against them by ample nourishment and tonic treatment. Although anemic and debilitated patients are more prone than healthy persons to neuralgias of every sort, this is especially true with regard to the superficial neuralgias, the sufferers from migraine and the visceralgias being often in good, even robust, health so far as any anemic tendency is concerned.

Anemic neuralgias are, as a rule, protracted, like their cause, but may in the end pass away rapidly under appropriate treatment.

Diabetes sometimes causes intractable and often symmetrical neuralgias, especially sciatica, even though the symptoms of the underlying disease are not marked.

Gout and kindred disorders (lithemia) may cause neuralgia, partly by alteration of the blood, or by direct irritation of the nervous centres, and partly by inducing neuritis. These neuralgias are sometimes bilateral and fugitive, sometimes lasting, according to their origin. Visceralgias are also common in the gouty, but it is an open question whether this may not be, in part, because of the neuropathic tendency which is intimately connected with gout.

Chronic nephritis, and the vascular nutritive disorders associated with it, may cause various neuralgias, both superficial and visceral.

Syphilis likewise causes neuralgias both in its early and in its late stages, and here also the manner of its action may be either direct or indirect. It is also worthy of reflection, in a given case of this kind, whether the cause of the neuralgia may not be the antisyphilitic treatment which has been used, and not the disease itself.

The neuralgias due to mineral poisoning are apt to be bilateral, or to attack different parts successively. The arthralgias and visceralgias of lead poisoning belong in this category, but will be treated of with the other symptoms of the same origin.

Peripheral irritations cause neuralgia which is sometimes confined to the region irritated, sometimes located in distant parts, and are always to be carefully sought for and eliminated, since, even when they constitute only partial causes, they may be practically responsible for the seizures. Carious teeth may excite neuralgia in other branches of the fifth pair besides that directly irritated.

Injuries, such as severe jars, as in railroad accidents, or blows, even when they do not apparently injure any particular nerve, may excite severe neuralgias, and the same is true of emotional excitement or mental overstrain, acute or chronic.

The pains due to the pressure of cancerous growths, or other tumors, and aneurisms, though often classed as non-neuralgic, are really not always to be distinguished from neuralgia by any intrinsic characteristic. The diagnosis is often established by other indications of the presence of morbid growths, and, so far as the nervous

system is concerned, is rendered probable by unusual persistence and severity of the pain, the occurrence of signs of neuritis, such as marked atrophy, contracture, anesthesia, etc. A bilateral distribution of the pain is also suggestive of such a cause, pointing either to pressure upon symmetrical nerve trunks at their exit from the spinal canal, or, in the case of the brachial nerves, to a symmetrical enlargement of lymphatic glands. Neuralgia of the fifth pair has occasionally been traced to aneurism of the internal carotid.

Cold and damp weather and the atmospheric changes preceding and accompanying storms are fruitful causes of neuralgic attacks, acting no doubt in part by depressing the general nervous tone, and in part by causing congestion or anemia of the sensitive cutaneous nerve fibres, and even increasing any neuritis that may be present.

It is proper to speak here of the relation to neuralgia of such general influences as age and sex.

Childhood is usually considered nearly free from neuralgia, but this is only true of the typical, peripheral neuralgias of protracted course. The so-called "growing pains" of childhood may fairly be called neuralgic, and children suffer from visceral neuralgias, and sometimes from typical migraine or periodical headache.

Puberty brings an increased tendency to migraine and headache, which then usually lasts until the age of forty-five or fifty. The neuralgias of acute anemia and chlorosis occur also largely at this period, though anemia is probably also a cause of some of the pains of childhood.

All neuralgias are most common in middle life, mainly because it is then that the nervous strains incident upon increased cares and exposures of all kinds make themselves most strongly felt, and act both directly and indirectly by increasing neuropathic tendencies.

Neuralgias rarely begin in old age, and when they do they are very intractable, perhaps because they depend upon tissue degenerations in the nervous and vascular systems. It is, however, a noticeable fact to which the writers can bear testimony that, in spite of their severity and persistency, the neuralgias of old age sometimes unexpectedly disappear for longer or shorter periods, or even permanently.

The female sex shows a relatively great liability to the neuralgias of neuropathic origin; the male sex to neuralgias of peripheral origin.

General Symptomatology.—All neuralgias have in common a greater or less tendency to periodic and apparently spontaneous recurrence, but the degree to which this periodicity is seen varies greatly.

The most regular and spontaneous periodicity is met with in the malarial neuralgias and in those of mainly neurosal origin, especially migraine and the periodic headaches. The visceralgias recur less regularly, but their outbreaks also are frequently, to all appearance, spontaneous, that is, due to cyclic changes within the nervous centres themselves, and not to irritation from without. In both cases this tendency to cyclic outbreaks may be interrupted, and attacks precipitated, by various causes.

Besides these neuralgias of regular recurrence, persons of neuropathic constitution are often liable in some degree to spontaneous attacks of pain, of relatively short duration; but the typical superficial neuralgias of protracted course, as a rule, show but little of this tendency to periodical and spontaneous recurrence, so characteristic of the more distinctly neurosal neuralgias. They may recur, it is true, but this is either from a recurrence of their underlying cause, or because the neuritis, which is usually present as an important complication, if not a cause, does not entirely pass away and excites the neuralgia to fresh outbreaks.

Almost all neuralgias have in common a tendency to excite vaso-motor and trophic changes. The vaso-motor phenomena are most marked in cases of the migraines, which are often characterized by a marked pallor or redness, or both in turn, of one side of the head. These vascular changes have, in fact, been widely believed to be the essential feature of migraine, and to be directly responsible for the pain; but this is, in the writers' judgment, a mistaken opinion. Similar symptoms are seen in the other neuralgias, especially those of the neighborhood of the eye, and probably attend, if they do not cause, the changes in the glandular secretions (tears, urine, mucus, gastro-intestinal fluids), which are also very common near the seat of any severe neuralgia, and even at a distance from it. The writers have seen a sharp attack of intercostal neuralgia, for instance, of short duration and due to acute fatigue and exposure, pass entirely

away with a copious discharge of limpid urine, such as often attends the close of a migrainoid attack. Finally, migraine is often unattended by any noticeable vascular changes.

The trophic phenomena are most marked in the case of the superficial neuralgias, and range from such changes as are obviously due to neuritis (herpes zoster and other cutaneous eruptions, muscular atrophy, and the like), to the more temporary alterations which are partly of vaso-motor origin, or due to irritation of trophic or glandular nerves, and partly of unknown origin (edema of the skin, changes of color and increased brittleness of the hair, temporary muscular enfeeblement, impairment of the eyesight, possibly even glaucoma, etc.). The cases associated with herpes are occasionally accompanied by palsy of the muscles innervated by the affected or related nerves. The trophic changes in migraine are but slight.

It is often included in the definition of neuralgia, that the pain is confined to the region of distribution of one or more nerve branches, but this applies only to the neuralgias of the superficial nerves.

It is common to most neuralgic attacks that the pain is intermittent or remittent in severity. When a continuous dull aching is present, it may be suspected that the neuralgia is complicated by a material degree of neuritis.

For further examination of their symptomatology, neuralgias may be divided into:

1. Superficial neuralgias.
2. Migraine and the periodical headaches.
3. Visceralgias.
4. Unclassified neuralgias of irregular distribution.
 1. The *superficial neuralgias* are limited to the course and areas of distribution of one or more nerves or parts of nerves supplying the skin and adjacent structures.

The principal varieties are: (1) The neuralgia of the fifth nerve, of which there are several subdivisions; (2) the neuralgia of the occipital nerve; (3) the neuralgia of the cervico-brachial nerves; (4) the neuralgia of the abdominal nerves; (5) the neuralgia of the anterior crural nerves; (6) the neuralgia of the sciatic nerves.

All these neuralgias have the following peculiarities in common: The attacks are sometimes brief, often of relatively long duration.

The *brief attacks* generally occur in persons of neuralgic habit, and under these circumstances are more likely to attack the facial, intercostal, or abdominal nerves than the brachial or the sciatic. They may occur spontaneously, or from some special cause, as fatigue, excitement, or exposure, and may pass away after a night's sleep, like an attack of migraine, the disappearance being sometimes attended with a copious secretion of urine. Gouty persons are also subject to brief neuralgic attacks; and there are other obscure disorders of the nutrition (so-called lithemia, and the like), of which the same is true, though it is by no means easy to say whether the neuralgia is really secondary to the nutritive disorder, or both are symptoms of an underlying nervous affection. Vaso-motor changes are common in acute attacks of brief duration, leading to pallor or redness of the skin. Such attacks are often attended also by increase, preceded at times by diminution, in the secretion of neighboring glandular organs, and occasionally by edema of the skin. These phenomena are perhaps of vaso-motor origin. Hyperesthesia of the skin is often present.

The *attacks of relatively long duration* usually come on gradually and are recovered from gradually. The pain is not felt over the whole area of distribution of the nerve, but has its points of election, and from these points the pain spreads or darts farther. Sometimes, and especially in the case of sciatica, the course of the nerve itself is the painful region, and it is believed that it is the sensitive *nervi nervorum* ramifying in the main nerve trunk that are mainly or even alone concerned in the neuralgic process in such cases. General tenderness along the nerve points to neuritis, but the localized tenderness which has just been referred to, and which is confined to certain definite spots (points *douloureux* of Valleix), probably do not necessarily have this significance. These spots of tenderness are apt to coincide with the foci of pain, but do not always do so. They are usually found where the nerve emerges from a bony or fibrous canal, or where it begins to ramify in the skin. The pain is often accompanied by subjective and objective disorders of the sensibility. The former consist in sensations of prickling and numbness, or of heat or coldness.

These sensations often precede or follow as well as attend an attack. When they overlast

the attack a long time, and especially if they are sharply localized, they usually indicate that the nerve has been the seat of the inflammation. The objective disorders are of the nature either of hyperesthesia or of anesthesia. The former is usually seen at the beginning or at the height of an attack, and the latter usually later. A persistent impairment of sensibility points to destruction of some of the sensitive nerve fibres from neuritis.

SPECIAL FORMS OF SUPERFICIAL NEURALGIA.

Trifacial Neuralgia.—The fifth pair is more frequently affected in neuralgia than any other nerves. Conrad's statistics of seven hundred and seventeen cases of neuralgia showed thirty-three per cent to be trigeminal. This frequency is due, in part, to the exposed position and extensive distribution, many attacks being induced by disease of parts supplied by its different branches, as the teeth, nose, eyes, etc.

The forms of trigeminal neuralgia may be clinically divided into three types:

1. Supraorbital neuralgia.
2. Reflex neuralgia.
3. Tic douloureux.

This division may not in a way be absolute, since many attacks of supraorbital neuralgia, though implying a neuropathic constitution as a *sine qua non*, may be brought on by peripheral irritations, and thus in a way be reflex.

Furthermore, supraorbital neuralgia may exist as a type by itself, or the nerve may be involved in either of the other two forms.

1. Supraorbital neuralgia may be divided into: A. Those manifested by constant pain. B. Those in which the attacks are intermittent. C. The periodic attacks.

A. The pain in supraorbital neuralgia may be constant and persist for several weeks or more. In this case its character is generally described by the sufferer as twisting or boring, and radiates from above the eye to the vertex. During the attack there is generally tenderness over the supraorbital foramen. Such attacks are frequently found with diseases of the eye, especially iritis and glaucoma, and may be benefited by treatment of these conditions. The supraorbital neuralgias associated with herpes are apt to be very persistent.

B. The intermittent type is generally characterized by making its appearance in the early

morning and continuing with great severity till two or three o'clock in the afternoon, when the pain subsides, only to recur on the following day. This type, from its intermittent character, was once thought to be always due to malaria; and the fact that large doses of quinine, given three or four hours before the paroxysm is due, has generally proved beneficial seemed to corroborate this view.

In this locality, at least, it is usually a sequel of a coryza which extends upwards, causing a catarrhal inflammation of the frontal sinuses, to which the ophthalmic division sends sensory fibres, and free drainage of these sinuses is essential to recovery. This intermittent type, however, may persist as a neurosis or habit neuralgia long after its original cause has gone.

C. The supraorbital neuralgias which come periodically at more or less regular intervals form a group by themselves, the attacks often being foreshadowed by marked gloom and depression of spirits.

These attacks may be accompanied by eye symptoms and vomiting, and after lasting a definite period of time disappear. This migrainoid type derives its name not only from the character and periodicity of the attacks, but from the fact that it sometimes alternates in the same patient with typical attacks of migraine. Moreover there are patients who suffer from migraine from childhood till adult life, when the character of the attacks changes and the migrainoid neuralgia takes the place of the old headache.

2. *Reflex Neuralgias.*—The characteristic of the reflex neuralgias is that they stay until the cause is removed. The most common form is that due to diseases of the teeth, especially where cavities have led to exposure or disease of the pulp. They may also be due to changes in the alveolar processes, or to swelling and thickening of the periosteum of the bony canals through which the nerve passes. More rarely they are caused by aural disease.

The pain in this group of neuralgias is usually constant or jumping, though it may be paroxysmal, simulating tic douloureux. It is possible that in some cases true "tic douloureux" begins as a reflex (tooth) neuralgia. Against this, however, is the fact that the teeth have so often been drawn without benefit. Moreover, these reflex neuralgias often occur before the middle period of life.

3. The third type of trifacial neuralgia, tic douloureux, is to be sharply distinguished from the other forms. It begins in middle or advanced life and runs a characteristic course. The pain is located in the area of distribution of the second, or the second and third divisions of the fifth nerve, more rarely involving the first of all three branches. It generally starts in the upper lip or at the side of the nose, and is described at times as flashing upward along the nerve, at times as radiating outward like a pinwheel. It is paroxysmal in character, the attack being lightning-like in onset, of extreme severity, and lasts about a minute, disappearing as abruptly as it came. During the attack there is flushing of the affected side of the face, with twitching of the muscles, and often there are lachrymation or salivation and a serous discharge from the nose. The lightest touch or draught of air will precipitate an attack, while the patient dare not speak and refuses to eat solid food, so great is his dread of the pain.

The paroxysms come from several to many times a day, for periods of a few weeks or months, after which the patient may be free from them for an interval of several months. It is oftentimes a striking feature in these attacks that the pains occur with great frequency during the day, while the sufferer may go to bed at night and sleep unmolested.

The rule is for these alternations between periods of pain and periods of relief to persist over long intervals of time. It is not uncommon to see patients who have suffered for fifteen or twenty years.

Pathology.—Tic douloureux has been considered due to degenerative changes in the Gasserian ganglion, as described by many investigators. Coenen, however, maintains in a recent article that these changes are secondary to peripheral operations previously done for relief of the pain.

Degenerative changes of varying intensity have been shown to exist in the nerves by many investigators. Whether these are the original causes of the pain, or whether they result from the continued severe paroxysms cannot be decided with certainty.

Some investigations have demonstrated an endarteritis in the vessels supplying the affected nerves, at times resulting in marked diminution in the lumen of the vessel. This may be a fac-

tor in many cases by giving rise to nutritional disturbance.

Brachial and cervico-brachial neuralgia has the distribution which its name implies, and the characteristics of a typical superficial neuralgia. Like the rest, it is often due to injury or neuritis, the latter sometimes being secondary to affections of the shoulder-joint, but it may occur simply as a sign of debility or a neuropathic diathesis, or from concussion accidents and the like.

The pain usually centres in foci, such as the point of the shoulder blade, the insertions of the deltoid, the neighborhood of the supinator longus muscle, the wrist, and more rarely the fingers, and radiates upward or downward from these points. The hand and even the whole arm are often the seat of sensations of numbness and tingling due perhaps to congestion of the nerve, or to disorders of the circulation of vaso-motor origin, or to neuritis, and these sensations sometimes substitute themselves for the neuralgic pain.

The pathological diagnosis should take into account the possible presence of cancerous cervical glands, pachymeningitis cervicalis, spondylitis deformans, and Pott's disease, bilateral pain, muscular atrophy, rigidity of the neck), or of angina pectoris.

Occupations and professions requiring constant use of certain groups of muscles of the arm often give rise to extremely obstinate and troublesome pain, which, however, does not follow the course of any particular nerves, but is generally increased by motions involving the much-used muscles. It is not a muscular affection, but probably comes best under Oppenheim's head of psychalgia brachii.

The chief point in treatment of this form is rest of the affected member, but recovery is accelerated by general tonics and static electricity. The treatment of brachial neuralgias in general is that of the other superficial neuralgias. Surgical treatment by nerve-stretching is possible at any point, even as high as the cervical plexus.

Intercostal neuralgia is one of the commonest neuralgias of debilitated subjects, especially women, and of persons of nervous temperament. The intercostal nerves are surrounded at their origin by large venous plexuses, and are thus liable to suffer from any sluggishness of venous circulation. Neuralgia from this cause is more

frequent on the left side, since there is greater obstacle to the emptying of these vessels. It is also met with in connection with brachial neuralgia, or with neuralgia of the thoracic or abdominal viscera. It is often associated with herpes (shingles) and then the pain may occur two or three days before the appearance of the rash. It may pass off with the healing of the vesicles or may persist for weeks or months. In many cases of intercostal neuralgia there are tender points at the seat of the pain, which is usually greatest over the side of the chest at the exit of the lateral nerve branches. Often a tender point is also felt at the exit of the dorsal or anterior branches. The pathological diagnosis should consider intrathoracic cancer, Pott's disease, aneurism (all of which would be likely, but not certain, to cause bilateral pain), and pleurodynia. In all cases the heart, pleura, stomach, and gall-bladder should be carefully examined for disorders.

Ilio-lumbar neuralgia needs no separate notice except to remark that it is often found in connection with affections of the uterus and ovaries.

Anterior crural neuralgia is not very common and needs no separate notice. The pathological diagnosis should consider the possibilities of hip disease, osteo-arthritis of the spine, and pelvic tumor.

Meralgia paresthetica.—The symptoms of this condition, as the name implies, consist of paresthesia and pain, and these are located over the areas supplied by the external cutaneous nerve of the thigh. The surface involved usually extends from the crest of the ilium to the knee, on the outer aspect of the thigh, though only part of this may be affected. There is frequently a tender pressure point just below the anterior superior spine of the ilium. This disease may result from trauma, but is commonly seen in people with a rheumatic or lithaemic tendency.

Sciatica is one of the commonest and severest varieties of superficial neuralgia, both on account of the exposed position of the nerve, which renders it liable to injury both within and without the pelvis, and also from causes which are more subtle and less well understood.

The causes of sciatica are: local injuries; primary neuritis, as in herpes zoster; exposure to sudden alterations of heat and cold; intrapelvic diseases, even when they do not directly involve

the nerve itself, as uterine disease for example; gout, diabetes, and various constitutional affections which impair the quality of the blood or the general nutrition. Cancerous disease within the pelvis may, by pressure, give rise to pain which is hardly to be distinguished at first from sciatica, and this cause should be suspected if the symptoms are bilateral, unusually persistent or attended with marked signs of neuritis, such as anesthesia, localized numbness, and prickling, muscular wasting, and especially if other nerves are involved at the same time. Chronic inflammation of the tissues around the hip may also give rise to pains which could be readily mistaken for sciatica. It is very important, and usually perfectly easy to distinguish pains of locomotor ataxia from those of sciatica. The former are bilateral, not confined to the distribution of the sciatica nerve, momentary in duration, and usually affect, by preference, small spots in the fleshy parts of the limb, the knee, or the heel, or dart down the leg and disappear again.

Osteo-arthritis of the spine is commonly mistaken for sciatica, the pain in this affection being caused by involvement of the nerve roots in the inflammatory exudation along the vertebrae. This gives rise to pain which is often distributed in patches, along the areas of distribution of these roots, over the front and side of the thighs and legs. Many of the curvatures described as sciatic scoliosis by many authors are really signs of osteo-arthritis, and are due to muscular spasm on the unaffected side of the spine, in attempts to relieve the involved nerve roots from pressure. This condition is recognized by the marked muscular rigidity on the unaffected side of the spine. The motion of the vertebral joints is quite free when the patient bends toward that side, while the lumbar spine remains perfectly rigid on any attempt to bend forward or toward the affected side.

Symptoms.—The distribution of the pain in sciatica may be coextensive with the distribution of the whole nerve, but oftener it centres in certain regions which may vary as the attack goes on. Such are the sacral region, the neighborhood of the sciatic notch, the back of the thigh, the popliteal space, the calf, the outer side of the leg, or the outer side of dorsum of the foot. Sometimes the course of the nerve itself is marked out by darts of pain. "Tender points" are found at the sacroiliac synchondrosis, the sciatic notch, the popliteal space behind the head

of the fibula, behind the outer malleolus, and often at other places as well. Some cases of sciatica are of short duration and seem to be of purely functional origin, while in others neuritis plays a large part in the production of the symptoms, causing persistent pain, loss of sensibility, cutaneous eruptions, coldness, and wasting, and increased pain on motion, voluntary or passive. Even where these symptoms are absent, and where the pain is fully intermittent, the absence of neuritis cannot be confidently asserted in cases of long standing.

The prognosis of sciatica depends upon its cause. Except when it is dependent upon some temporary irritation, however, it lasts usually for weeks or months, or even longer, and is liable to relapses and recurrences. The sciatica of diabetes is said to be peculiarly obstinate, even if the usual symptoms of the disease are not severe.

Coccygodynia.—This is a severe neuralgic pain in the region of the coccyx, occurring almost exclusively in women. The pain is marked on sitting or during defecation and micturition, and the end of the coccyx is exquisitely tender to moderate pressure. The condition occurs almost always in neurotic individuals, but may be brought on by trauma of difficult labor. It frequently runs an obstinate course.

It might be well to speak here of the importance of examining the feet in all cases of vague and obscure pains in the legs, knees, thighs, and hips, for the greatest variety of sensations, from constant dull aching or burning to sharp neuralgic twinges, may have their origin in weak or broken-down arches, and immediate relief may be obtained from proper treatment. Metatarsalgia is but one instance of this sequence.

Visceral Neuralgias.—The visceral neuralgias are of great importance, both on account of the suffering which they cause, and because of their constitutional significance. They occur, like the other neuralgias, partly from general nervous causes, such as fatigue, gout, and other constitutional diseases of the nutrition, and especially the neuropathic tendency, and partly as a result of functional and organic disorders of the viscera. To what extent actual neuritis occurs as a cause is not yet known, but it is certain that chronic inflammation of the nerves is often set

up by organic affections of the organs, such as the heart, to the neighborhood of which the pain is referred.

The pain of the visceral neuralgias is usually deep-seated, vaguely located, and dull, but at the same time intense and prostrating, and sometimes attended with faintness, nausea, sweating, and often disorders of the circulation and secretions. Though not sharply localized visceral neuralgias take their name from the organ in the neighborhood of which they seem to be situated, as the pharynx, the esophagus, the heart, stomach, liver, bowels, ovaries, uterus, rectum, testes, etc.

Angina Pectoris (see Vol. I, p. 227), though a true visceral neuralgia, is so often a symptom of heart disease that it is usually described in that connection. It may, however, be mentioned here that it occurs not infrequently, though hardly in its severest forms, entirely independently of organic disease. In a case known to the writers, for instance, it occurred during a considerable period on the slightest exertion, such as rapid walking, in a lady suffering from temporary debility from overwork, and was each time attended with breathlessness, and with pain and numbness in the left arm, yet eventually passed entirely away. Various other such cases are on record.

Gastralgia (gastrodynia, cardialgia, gastric colic) is perhaps the most common form of visceral neuralgia, and in its widest sense covers a variety of sensory symptoms, ranging from sensitiveness and pain accompanying the act of digestion, and perhaps accompanied with signs of delayed or imperfect digestion, yet not due to gastritis or ulcer, to severe paroxysms of pain entirely unconnected with the digestive process.

The etiology is similar to that of the other visceral neuralgias, but it is met with in young children oftener than the rest. It is especially common in gouty subjects and in persons of nervous, mobile temperament, and the writers have several times seen slight symptoms of this general character at the time of the menopause.

The pain in gastralgia is felt primarily at the epigastrium, and radiates thence upward in the direction of the esophagus, and through toward the back, besides laterally through the abdomen. Allbutt ("Visceral Neuroses") says that it may be associated with anginiform attacks, and it may

be attended likewise with superficial neuralgia of the abdominal walls and other parts of the body, as the face.

The relation of gastralgia, as well as of the other sensory visceralgias, to the functional affections of the viscera is very important and calls for further study. There is no question that many digestive disorders which attend gastritis, or even cancer, may also occur as pure neuroses, and it is likewise evident that there is a whole range of nervous disorders, sensory and motor, of which these purely painful affections form only one division.

Neuralgia of the liver is said to be sometimes attended by swelling of the liver and by jaundice; but here, as frequently in the case of the abdominal neuralgias, it is difficult to guard carefully enough against mistaking an organic disease for one of the concomitants of a neuralgic attack.

Neuralgia of the anus and rectum is a well-marked and painful affection, and the tendency to it may be hereditary. The seizures may come on spontaneously, especially after fatigue, or may be excited by slight irritations, such as the passage of hardened feces, or may follow sexual intercourse or seminal emissions. The pain may be accompanied by clonic spasms of the perineal muscles. The rapid injection of hot water into the rectum, or hard and deep pressure with some smooth object will often stop the attack, which otherwise is liable to last for one or two hours.

Besides the more or less typical neuralgias there are a number of other painful affections, of spontaneous origin or provoked by trifling irritations, and of unknown pathology, which occur usually in persons of neuralgic or neuropathic tendency, and are therefore fairly to be classed as neuralgic, although they do not follow the distribution of a special nerve. Such are pains referred to the skin, the muscles, or the joints, not attended by signs of local inflammation or by any appearance of local congestion or anemia, and capable of coming and going with greater or less rapidity. The "growing pains" of anemic children are of this order, together with a similar affection sometimes met with in adults; also the "general neuralgia" of anemic patients, and those dermatalgias which are not due to the organic irritation of sensitive nerve fibres, such as occur in locomotor ataxia and neuritis. The arthralgic pains of false

(hysterical) joint disease might perhaps be included.

Treatment of Superficial Neuralgias—(vide also sections on Neuralgia of the Fifth Pair, Sciatica, etc.).

Casual Treatment.—The importance of removing the causes of the neuralgia is evident to everyone, but it is not equally recognized that it is necessary to remove partial causes, no matter how many there may be. Such causes are principally: (1) Exposure to alterations of temperature and weather, to be met by suitable clothing, change of occupation, temporary removal to a drier, or it may be, to a more relaxing climate; (2) peripheral irritations, either near or remote from the seat of pain; (3) neuritis, primary or induced (vide below under Electricity and Surgical Operations); (4) dyscrasias, such as gout, syphilis, diabetes; (5) fatigue, anemia, lack of proper nourishment. It should be remembered in this connection that a state of health sufficient for ordinary purposes may not be sufficient as counteractive of neuralgia. What would seem excessive nourishment (see under Neurasthenia), combined, if necessary, with massage and rest and cod-liver oil, arsenic, and large doses of iron, if well borne, is useful in a large number of cases.

Treatment.—The chief indications are to quiet the pain and root out the cause. A painstaking study of the history and an exhaustive physical examination are necessary in all cases. The therapy will vary, therefore, widely if the cause be ascertained; a course of quinine will cure one patient, a surgical operation may be called for in another. General rules, therefore, are largely illusory.

Taking up the general therapeutic indications, the analgesics which have proved serviceable may be discussed first. From the true therapeutic standpoint they are solely palliative. Many cases of severe neuralgic pain may be temporarily subdued by the synthetic analgesics and the dangers of a morphine habit averted. Phenacetin, acetanilide, antipyrine, aspirin, pyramidon, lactophenin, and phenocoll are among those that have proved valuable. New ones are constantly being added, and among them some are certain to be of value. The salicylic acid group combinations are at times useful, especially in the milder cases and in patients with arthritic tendencies. In influenza and tonsillitis neuralgias the salicylates are useful. Combinations of these with soporifics,

such as chloral, paraldehyde, sulphonal, trional, or veronal, are useful in procuring sleep, and thus prevent the reduction of the patient's resistance.

If any of the opium group be necessary, it is better to give such in sufficient doses. Usually smaller doses may be given when combined with the analgesics mentioned. Aspirin, gr. vii (0.5 gram), codeine, gr. $\frac{1}{3}$ (9.92 gram), and trional, gr. vii (0.5 gram), for instance, is a useful combination in mild cases to be taken at night. Other combinations are equally effective. In the chronic neuralgic pains morphine is to be avoided as long as possible. This does not apply to a very old patient, or one in whom the neuralgia is simply the expression of some chronic incurable disorder—carcinoma, for example. The gradual immunity acquired, with the need for larger doses, and the pernicious effects of a habit apply to all the members of the opium group.

It is doubtful if chloroform or ether is to be recommended by inhalation in severe neuralgias. They are useful temporarily in great crises.

Other drugs are quinine, which in combination with the salicylates is specially valuable; arsenic, which is serviceable in the neuralgias due to anemia, especially in combination with iron. Atropine and aconitine were used widely before the days of the antipyretic analgesics. Their definitely poisonous qualities have driven them into the background. The unreliability of *Cannabis indica* has done the same for this otherwise useful analgesic. The iodides are called for in the syphilitic neuralgias, and are useful in many neuritic neuralgias.

Counter-irritation is of great service in most cases of severe neuralgia, especially after the acute onset is over. The Paquelin cautery is the best means; mustard paste, cantharides, turpentine, chloroform, ether, and acupuncture all have their place. Local freezing may be carried out by ethyl chloride, methyl chloride, ether, or other volatile substances. Menthol, or other similar derivatives may be used for mild neuralgic pains to advantage.

Nerve-stretching is appropriate for mixed nerves, and has been applied to almost all the superficial nerves of the body, including the intercostals. Its effect is partly to diminish the conducting power of the sensitive fibers, and thereby diminish the irritations reaching the nerve centres, partly to alter the condition of nutrition in the nerve trunks, and partly, no

'doubt, to exert a so-called inhibitory action with regard to the neuralgic condition of the nerve centres. The operation is not often followed by serious results if done under proper antiseptic precautions.

The treatment of tic douloureux is medical and surgical, and the former should be given a thorough trial before the latter is undertaken. If the medical treatment is successful, the immediate attack is prematurely terminated, but permanent cure is rarely experienced. This, however, is often all that is accomplished through the peripheral operations, though the results of the latter are more constant.

Iodide of potassium has many advocates and especially does seem to do good in some cases, especially if given in moderately large doses.

Strychnine in massive doses is recommended by Dana, in cases of not over four or five years' standing. He keeps the patient quiet in bed and administers the strychnine subcutaneously, starting with gr. $\frac{1}{30}$ once a day, and gradually increasing until gr. $\frac{1}{6}$ or gr. $\frac{1}{5}$ is reached. This should be given for four or five days, and then the dose gradually diminished. This should be followed, he says, by an iodide-of-potassium treatment.

Surgical treatment consists in the peripheral operations, which may be regarded as palliative, and the extirpation of the Gasserian ganglion, which gives permanent relief in most cases.

The peripheral operations generally consist in cutting down on the offending nerve—the customary points being at the dental canal, infra-or supra-orbital foramen, or sphenomaxillary fossa and in twisting and pulling out as much of the nerve as possible. This procedure usually gives freedom from pain lasting from a few months to two years. Occasionally a patient will be relieved for three or four years, and some cases of cure have been reported. The average relief from forty-three such operations, recently collected by the writers, was ten months. Three or four peripheral operations had often been performed on the same patient. The Gasserian-ganglion operation, first done by Rose, twenty years ago, is regarded as the only means of affording permanent relief, though it is attended with considerable danger, owing to the location of the ganglion and the liability to hemorrhage. Horsley performed this difficult operation twenty-one times, with only two deaths. The reports of two hundred and one operations, collected by

Turk, show that in seventeen percent of the cases the patients died as a direct result of the operation; ninety-three percent of those who recovered were considered to have been permanently cured. This percentage of cures, is, however, open to some criticism, for sufficient time had not elapsed after some of the operations to make it sure that a cure had been effected. On the other hand, the recurrence of pain after some of the earlier operations may have been due to the incompleteness of the operation.

Spiller and Frazier have recently brought forward the question of division of the sensory root of the ganglion as a radical operation. This was tried twenty years ago by Horsley and resulted fatally. Very little has been attempted since then until later, when it was recommended as being a simpler operation, and as attended with less danger of hemorrhage than the extirpation operations. It is an important recommendation of this procedure that it leaves the motor root intact. The only uncertainty is that regeneration of the sensory root may later take place with return of the pain. How great this danger is can be shown only by time.

Occipital Neuralgia is generally an affection of the occipitalis major and minor and the great auricular nerves. It approaches the neuralgias of the fifth nerve in severity and in its tendency to assume the epileptiform type, and often super-adds itself to them, especially to the supra-orbital variety, by extension. In its typical form it is commonly unilateral, and this, together with its history and the character of the pain, usually serves to distinguish it from the occipital headache met with in neurasthenia, chronic nephritis, intracranial tumor, and eye strain.

In the treatment a diligent search should be made for organic disease of the vertebrae and surrounding tissues. This failing, salicylates or coal-tar products or the above-named anti-neuralgic remedies may be employed for relief of the pain. Galvanism often acts favorably in this form of neuralgia. If, however, the pain proves intractable and relief cannot be obtained from medicine, surgical interference may be resorted to and resection of the nerve may be done. Intradural resection of the posterior root has recently been performed with successful results.

The treatment of sciatica varies with its causation and its stage (vide also under General

Treatment). The removal of diathetic taints, absolute rest, superficial blistering, counter-irritation by a spray of ether or of chloride of methyl, the local wet-pack followed by vigorous rubbing with cold water and by warm applications. If access is obtainable to a hydrotherapeutic institution, the Scotch douche may be used with benefit. Galvanism with long-continued, mild currents, cutaneous faradization, are always in place, and turpentine, quinine, iodide of potassium, or salicylate of sodium in full doses, may be given in fresh cases for limited periods with some hope of relief.

In chronic cases the remedies may be proportionately vigorous. The galvanic applications may be as strong as the patient can bear, and special pains taken to localize the current on the nerve, at the sciatic notch, and in the popliteal space, by pressing the electrode inward, and seeking to excite referred sensations at the periphery. It probably makes no difference whether the anode or the cathode is employed over the nerve, or whether the current is occasionally interrupted. Indeed, a series of sudden reversals of the current are often of service. Static electricity in the forms previously mentioned (vide General Treatment) is of value in these cases. Deep massage along the nerve, even if painful at the time, may be of great value, probably by removing inflammatory exudations. Ice-bags may be applied continuously along the course of the nerve, and deep injections (vide under General Treatment) are serviceable, though not without danger. When other means fail, "nerve-stretching" may be used, and, indeed, under proper antiseptic precautions, it is not a dangerous operation in itself. It has, however, been shown that the effects of the traction are felt in the spinal canal, and myelitis has in a few instances been excited. A substitute operation is the so-called "bloodless stretching," in which, the patient being under ether, the thigh is forcibly flexed on the pelvis and the leg extended at the knee, and this position maintained for some minutes. That the nerve can be stretched in this way is beyond question; but it may be doubted whether the method is really safer as regards its secondary effects than that of the exposure of the nerve by a single incision, and the use of a measured amount of direct traction, upward and downward in turn.

DISCUSSION.

Dr. G. S. Bidwell of Waterbury.—I regret that I was not here in time to hear all of this paper. The old saying that "neuritis is a cry of the nerves for better blood," has, it seems to me, more truth than poetry in it. We have to go back to the laity in whom the idea is present that we have a distinct disease to treat, but we must not be too hard on the laity because too many times (and this is one of them) the belief of the laity of today was the teaching of the medical men of one or two generations ago. It seems to me there is no one condition in which a doctor's acumen should come to the front in search of a cause more than in this condition—this symptom of neuralgia. The treatment, as the doctor has said, are both preventative and curative, both medical and surgical. The doctor in the immediate neighborhood is called upon. I have in mind some of the causes in connection with this old statement as to the cry of the nerves for better blood. How many times these pains come from affections which primarily begin in the kidneys. I have in mind a man who was treated for 20 years by different physicians for periodic attacks of neuralgia. He had been treated with electricity—galvanism—and coal tar products, and so on through the entire list. He would go home to his dinner feeling perfectly well, sit down at the table and be taken with pain anywhere from his head to his heels. When first called to him I commenced examining his urine, and really you couldn't swear that he had Bright's disease. I had consultations twice and neither of the consultants would say that it was contracted kidney, and after I had examined his urine twenty-five times during 3 months, and presented all the papers to one of these doctors, he acknowledged that it was evident that the main trouble was contracted kidney. There is no place where a history should be as carefully and persistently sought for as in these different neuralgias. This man had been a carpenter and had been at work during very hot weather in summer, his work took him alternately between the cellar and the hot sun and then down into some vats. From that time on he had these attacks of neuralgia, and no doubt it started at that time, 20 years before his death. I have had quite a number of cases of neuralgia extending all the way from the thighs to the top of the head. I had a patient last winter who required unusually large doses of morphine—a lady over seventy years old—and when the trouble finally broke on the third day she had an eruption of herpes from the tip of her nose to the crown of her head extending over one eye, and it was over two months before she was much relieved.

Dr. C. W. Peck of Brandon.—I don't rise for the purpose of discussing a paper because I want to go home tomorrow night, but I want to say a word in regard to neuralgia. We have had a most excellent paper and you may think me a fool when I tell you there is no such thing in existence as neuralgia. Neuralgia, of course, you know what it is? It is always secondary or traumatic. The treatment of the neuralgia is to correct the condition of the digestive organs—to diet. You may not believe it, but I do.

Dr. C. N. Haskell of Bridgeport, Conn.—I have treated by injection in the nerve in the case of the trifacial nerve and in the sciatic nerve 100% solution. The technique of the injection into the trifacial nerve

is rather complicated and unless you have opportunity to experiment in advance I should not advise you to attempt it. The technique of the sciatic nerve is simple, it simply means the injection of 100 centimeters of normal solution directly into the nerve. With a long needle and proper syringe an injection of 100 cubic centimeters directly into the nerve you will be able to cure some of the most obstinate cases of sciatica that you ever treated by other methods.

Dr. H. D. Holton of Brattleboro.—For a long series of years I have treated sciatica by atropin with good results. I don't know whether it was the use of the needle—the piercing of the tissue—or whether it was really the atropin itself. The ordinary needle is not long enough to reach within the sheath of the nerve.

Dr. S. W. Paige of St. Albans.—In regard to the pain that comes into the lips, sometimes streaks up the face. Within the last ten or twelve years there have come under my observation four or five cases of elderly people between sixty and seventy years of age. The paroxysms of pain would be so severe that any little movement of the face would bring it on; the causes would be so slight that they wouldn't eat solid food. There wasn't anything that I ever tried that would absolutely relieve those conditions, and I saw two cases operated on, and one of them was relieved for about two years, there was about half an inch of the nerve cut out, and then after two years it gradually came on, although not as bad as previously, but there was quite a good deal of trouble afterwards, but there is no specific treatment that I ever saw that would absolutely relieve those conditions.

**AN ADDRESS READ AT THE NURSES'
GRADUATING EXERCISES OF THE
RUTLAND HOSPITAL AT RUT-
LAND, VERMONT, JULY
2, 1912.**

BY

DR. L. B. MORRISON.

We all take more or less pride in our ancestry whether we be of noble or of lowly birth, and well we may, as it has been wisely said: "People will not look forward to posterity who never look backward to their ancestors."

The profession of nursing has for its ancestral tree such as: Elizabeth of Hungary, Frederica Fliedner, Elizabeth Frye, Florence Nightingale, and Clara Barton.

Let us for a few moments review the evolution of nursing that you may better understand the courage, self-sacrifice and devotion of those who have paved the way to the present standard of efficiency, and that by their good works you may

be inspired to work for a higher and nobler standard than even they have ever dreamed.

The first ideas of nursing were the duty of the servant to his master, or of the maid to her mistress, of the kindly neighbor visiting and caring for the poor and sick in his or her vicinity, or often of a relative who was expected to care for and perform the last offices of death.

Sickness and disease of the body were looked upon by the clergy and early religious bodies of the past centuries as true indications of sickness of the soul. Therefore the care of the sick was brought under the jurisdiction of the church. Science was then unheard of, yet the love and devotion of the true nursing spirit was present, though not clothed in cuffs and collars, and due reverence was paid the tabernacle of the soul more than by the professional nurses of today.

Such beautiful examples as St. Elizabeth of Hungary, unshrinking and tender, confirmed the value of holy deeds in place of holy meditations; then the crusades, filling Europe with poverty-stricken widows and orphans, gave rise to the order of Beguines, lay sisters, bound by no permanent vows but pledged for the time being to serve the ailing and needy. This order was quickly rivalled by the semi-monastic Franciscans and Dominicans till the rendering of bodily as well as spiritual aid had become an acknowledged function of the church, the gain to the nurse's soul being always in proportion to the amount of unpleasantness endured. Not satisfied with bathing his lepers, St. Francis sat with them at meat, eating out of their dishes. St. Hedwig washed the feet of those smitten with scurvy. Heaven as a perfectly sure reward would induce people to undergo such unnecessary dangers and horrors.

Until the Reformation, English hospitals, like those of Europe, were under control of some religious order. After that the sick were cared for by the convalescent patients or by a degraded class of women who were unfit for ordinary domestic service. They were neither religious nor professional, often drunken and brutal, caring only for the small stipend that they received. Hospitals were used only by the very poor who suffered indescribably from the neglect and abuse. In France the best hospitals were run by the church and a more humane care was given to the sick. In one hospital only 22 at-

tendants cared for the 500 patients (many of these were criminals). In this same hospital it is said that there was one bed to 8 patients (4 in a bed and 4 on the floor).

In 1825 organized training was discussed in England but nothing came from the agitation until 4 years later when Southey became interested in the education of a better class of people for nurses. Two doctors in Liverpool hired a house and matron, received inmates and sent out nurses. These nurses were all employed by the upper classes who were suffering from many calamities at the hands of the dirty midwives. In 1852 a professor in a leading American medical college, discussing the symptoms of puerperal fever said: "I prefer to attribute them to accident or Providence, of which I can form some conception, rather than to contagion of which I can form no idea"; but Dr. Oliver Wendell Holmes of Boston said: "Rather due to dirty obstetrics."

Following Southey's attempts to elevate nursing the Kaiserworth system was started in Germany—an order of nursing composed of Protestant Deaconesses; that was the inspiration of many similar orders in England.

In January, 1800, there was born in Northern Germany Frederica, afterwards the wife of Theodor Fliedner of Kaiserworth—a woman possessed of happy disposition, great courage and patience, with a fervor and faith that never wavered in the course of any action which she conceived to be her duty. She was assisted by her husband who possessed as great a spirit of humanity as her own. Both realizing the terrible state of nursing conditions, conceived the idea of forming a society of protestant sisters in which girls should be trained in nursing under charge of a mother, to be held morally responsible for the welfare of their patients, their course of action, and yet lose none of their personal purity of womanhood. This at a time when civic authorities in charge of hospitals were careless or indifferent to the disorder, so that any girl thrown for training into such a den could scarcely fail to deteriorate. This organization progressed rapidly, due to Frederica's indefatigable energy, with the desired result; a better class of girls took up the work. Here really began the first training school for nurses. Frederica Fliedner died in 1843, leaving a reflection of her dauntless spirit as a farewell, written

on the last page of her diary—"Rest and peace are not to be thought of in this world. Above in the Fatherland is the heritage."

In 1840, Elizabeth Frye, England's authority on nursing, visited Kaiserworth and expressed her satisfaction with the work accomplished but it remained for Florence Nightingale, a practical philanthropist, after spending some time at Kaiserworth studying the plan and organization of the work, to bring out from a semichaotic condition and give as a heritage to mankind, broad, practical, tangible laws on nursing. This alone brought nursing from a maze of good intentions to the clear path of practical usefulness, instituting nursing as a profession peculiarly adapted to women, on a scientific basis, thus crystallizing an evolutionary process from generalization to specialization. The self devotion and sympathy of Florence Nightingale in the Crimean War, with its horrors of neglect and mortality, stirred the public mind very deeply. Though not the first nurse, Florence Nightingale was the first non-religious nurse who possessed the self-sacrifice and spirit of obedience and devotion which previously had been displayed only by the members of the religious sisterhoods. It was not her science or technical skill that made Florence Nightingale a great nurse, as in this she was no better than many others. Her claim to being a pioneer nurse lay in her patient loving devotion to the sick and her intense and well-balanced purpose to minimize their pains and soothe their sufferings along the best lines the science of her time could direct. It is only when this spirit is found that the real work of the trained nurse can be said to be perpetuated. Her inspired wisdom and untarnished nobility of purpose set forever the ideal standard, both practical and ethical, and from this time on the care of the sick became a profession for the normally intelligent woman with her living to make.

Prior to 1873, there were no trained nurses in the U. S. The sick and wounded of both the Revolutionary and Civil wars were cared for by the sisters of charity, untrained women and convalescent patients, trained nurses being first employed officially by the U. S. in the Spanish-American war. In 1864 the Red Cross was organized at Geneva, Switzerland. At that meeting twelve governments were represented (the U. S. not being one of them). It had its beginning here in 1882, due to "The Angel of the Battlefield"—Clara Barton—our Florence Night-

ingale of the Civil War. This Red Cross organization, brought about and ratified by twelve foreign governments, for the consideration of better nurse service in times of war. This action through Clara Barton's diplomacy was later amended to include all international calamities or great disasters. The Red Cross is now rendering invaluable aid, as you all well know. The incentive to train individuals in the "first aid to the injured" as carried out by firemen, policemen, working men and women in factories, in shops, on board ships or in the homes, who are prepared to meet any emergency, came first from this master mind, Clara Barton.

We can all heartily endorse the resolution passed by the Central Relief Committee of Texas after the Red Cross had ended the work for the sufferers from the storm at Galveston. Resolved, That we especially thank and render homage to the woman who is the life and spirit of the Red Cross, to her who is the embodiment of the saving principle of laying down one's life for one's friend, whose friend is the friendless and whose charge is the stricken; to her who should be extolled above queens and whose achievements are greater than the conquest of nations or the inventions of geniuses, and who is justly crowned in the evening of her life with the love and admiration of all humanity, Clara Barton. She passed to her reward April 12th last; aged 91—busy to the last in her work of love.

The first training school for nurses in this country was started in May, 1873, at Bellevue Hospital, New York City.

Dr. W. Gill Wylie, a distinguished surgeon of New York, volunteered to visit Europe, at his own expense, to study this subject. He addressed a letter of inquiry to Florence Nightingale and I will give brief extracts of her answer that you may understand her mastery of detail: "You say the great difficulty will be to define the instructions, the duties and the position of nurses in distinction to those of the medical men. Is this a difficulty? A nurse is not a medical man, nor is she a medical woman: on the contrary, the nurses are there and solely there to carry out the orders of the medical and surgical staff, including of course the whole practice of cleanliness, fresh air, diet, etc. The whole organization of discipline to which the nurses must be subjected is for the sole purpose of enabling the nurses to carry out faithfully and intelligently such orders and such duties as constitute the

whole practice of nursing, and the reason why this is to be done *this* way and not *that* way (and for *this* very purpose); that is, that they may be competent to execute medical directions, to be nurse and not doctor. They must be, for the sake of discipline and internal management, entirely under a woman whose whole business is to see that the nursing duties are performed according to this standard.

In the autumn of '73 the Massachusetts General Hospital of Boston started a training school, and since then there have sprung up throughout all the country regular courses of training in the many hospitals.

Modern bacteriology has revolutionized the care of contagious diseases and aseptic surgery has introduced a nicety of treatment hitherto undreamed of; consequently the increased demand upon a nurse, actual deftness of hand and intelligent comprehension calls for a much higher and finer training than in the days of unclean surgery and unisolated infections. Yet even today we occasionally hear some layman, aye even medical man, wish for the return of the nurse with slight education and 6 months' training; but rest assured that you, with your advanced preliminary education and long training in the latest, most scientific methods of nursing can and will give far better satisfaction. No one will willingly return to the old standards.

With the constant agitation for higher standards in all lines of educational advancement the nursing service has likewise increased so that in the past few years the course has been extended from two years to three years in many hospitals and the preliminary education increased from that of a grammar school to one year in a high school or a diploma from the same.

Many of the states have already passed registration laws giving the title of R. N. if certain educational requirements have been met, thus certifying to the people at large that a nurse so registered has the proper qualifications. So rapid has been the advancement and so high the qualifications in New York State that the hospitals were and are today unable to get sufficient nurses to care for the sick. The superintendents from some of the largest and best hospitals of New York City found it necessary to enter a protest to the educational department, advising somewhat lower standards or else the necessity of accepting nurses with preliminary education below the present standard. Vermont has a

good law with a standard sufficiently high to meet the requirements of nursing, thanks to the efforts of your own Dr. Gale.

Soon hospitals are to be investigated by the A. M. A. as to their qualifications for training both internes and nurses; thus are standards to be maintained. In nearly all states there is the Graduate Nurses Association, a power for good in helping to govern educational standards and in controlling their members, by keeping in touch with medical men and patients with whom they come in contact.

These higher requirements of nurses have, in a measure, opened many positions in hospitals for your members. Today, instead of only the superintendent and matron of a hospital, there are positions as night superintendent, graduate nurse in charge of wards, of the operating department, of the out-patient department, of dietetics, and in many of the large hospitals even the anesthetics are in charge of graduate nurses.

Outside of hospitals many new lines of service have opened which the nurse seems especially well qualified to fill and in the working out of many more sound problems you will find more and more opportunities; as district nurses; in social service work, working hand in hand with the medical fraternity in the great work of preventive medicine you have a labor for universal good never before equaled. Our great industrial insurance companies are finding out that prevention saves money, so that in the larger places they furnish nurses to minister to the health of their clients.

I believe the near future will see trained nurses regularly engaged in every shop, factory and hotel where men and women are employed.

You are now going into the world ready to take up, on your own responsibility, the work in which you have been trained and it remains for you to maintain the high standards of your school. Doubtless you have many times felt the duties and discipline tiresome, but it is these same duties many times performed, this same discipline, perhaps oft repeated, that gives you the training of greatest value and makes the performance of your duties absolutely instinctive and renders you fit to hold positions of responsibility. It is just as essential that a nurse, aside from mastering her handicraft and intelligent understanding of symptoms, should know how to behave. I would here leave a word of warn-

ing, as we are constantly hearing criticisms of the work. I do not mean a nurse should be a saint, as saints are born and not made—and then not in sufficient quantities to justify reliance on a steady supply. Pages might be filled with the enormities nurses have been known to commit, the property they have destroyed, family secrets they have divulged, the servants they have caused to give notice, and worst of all, family ties broken. You will go into the homes of the wealthy, of the middle class, and of the poor—in each home you must fit in to meet the conditions and you must always endeavor to do your work in the best manner possible, taking into account that it is possible to destroy and waste more than your earnings. It's the little things that count—a gas stove run 10 minutes when 5 minutes is sufficient—an electric light burning when not needed, and laundry work that might have been prevented. Systematize your work to correlate with the family's as far as possible, being dictatorial only when necessary for the welfare of the patient; always kind, quiet and thoughtful and attentive to the wishes of the family as well as of the patient, with a reserved, quiet dignity and irreproachable manner. *Tact*—the perfecting of sweetness of service, of exactness, of gentleness, of all the womanly graces, and above all, the charity of true sympathy are to be fostered. Character is the essential. You may be well trained and intelligent, but without character you will be found wanting.

You have just finished your training here but let me tell you, your real training and work has just begun. Here you have been under the charge of certain doctors, now you will work for many different ones with perhaps methods far different from those of your training. Go along watchfully and slow, not critical nor showing surprise at their ways; just remember that there are six or seven ways of doing the same thing well. Be observing of the patient's symptoms and help your physician all you can. Many are the things you can observe about a patient that never come to the physician's attention except by your telling. Don't criticise physicians or nurses to your patients or indulge in gossip, or, to use the slang phrase, "talk shop." Read good books to enable you to converse intelligently, be ever cheerful, and *smile*, for

"The thing that goes the farthest towards making life worth while,

That costs the least and does the most is just a pleasant smile,
The smile that bubbles from the heart, that loves its fellow-men
Will drive away the cloud of gloom and coax the sun again;
It's full of worth and goodness too with manly kindness blent;
It's worth a million dollars and doesn't cost a cent."

Take care of your health. It's your bank for future earnings. At times you will have to give constant attention to your patient, especially at critical periods, but strive ever to get regular rest. Holidays are essential. Even though strong do not be ashamed to confess physical weakness to your physician and drag on doing poor work. Rest occasionally—and by this I mean take vacations. Just remember there are no old nurses—nor, may I add, rich ones. It behooves you to save against that time when health gives way. It is sad fact and true, nurses as a rule are extravagant and do not accumulate money even though well paid, lodged and fed. But again, no profession better qualifies a woman for all the attributes of a true homemaker than yours and it is a position well worth your consideration.

In closing I would urge upon you, the graduates of this school, to be loyal to your Alma Mater, ever ready to lend a hand to help broaden its work in all lines. Your loyalty will strengthen the work of the undergraduates and the future of the school. Be faithful to the physicians for whom you work, withholding criticism by word or action, striving to give the patient that confidence in his or her physician that is so essential many times to his or her recovery. Remember it is the physician's privilege to direct the treatment. His the responsibility—yours to obey. Be true to each other and lend a helping hand. And be faithful to the patient however lowly—whatever the disease—ready with sympathy and tender care to minister to his or her wants as did the Samaritan of old; and finally, in this profession of great opportunities, where never before has the future been so bright, *radiating* with occasions for self-advancement and universal good, this above all—"To thine own self be true and it must follow as night the day, thou cans't not then be false to any man."

For much of the above material I am indebted to the following articles:

The Work of Clara Barton, by Ida Husted Harper in the *North American Review*, May, 1912. P. 701-12.

The Evolution of the Trained Nurse, by Mrs. Bedford Fenwick in the *Outlook*, Jan. 6, 1900. P. 56-67.

The Nurse of the Future, by Josiah Oldfield in the *Westminster Review* for Dec., 1902. P. 655-62.

An Address to Nurses of the Pennsylvania Hospital, by Dr. Weir Mitchell.

CRIMINALITY—THE PHYSICIAN AS A FACTOR IN PREVENTION—CRIME ON THE INCREASE.

BY

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Statisticians differ in their figures. However the *study* of crime is on the increase. As a result some very interesting situations have come to light. One fact in particular is becoming evident and that is, that before long the physician will be called upon to deal with the crime problem, as he now does with tuberculosis, yellow fever, etc. For crime is a disease. It is first of all disease of the mental make-up, and secondly of the social system. A splendid definition for crime was recently given by Dr. F. W. Sears, in a paper read before the Burlington Clinical Society, entitled "Crime, Its Etiology and Treatment." He defined it as "a variation from the standard of conduct set up by a community; and a criminal, one who does not measure up to the standard set up by the community in which he lives." Measure up to the standard! Verily in this is included the sum and substance for the *reason of being* of the criminal. What prevents such an individual from measuring up to the standard? Obviously a defective physical or mental construction, and obviously too, the extent of a crime committed by an individual, will depend greatly upon the fact, whether it is committed before or after the defect has been recognized. Even the most superficial reasoning will convince one that the physician is the qualified judge of such defects.

A case in illustration: A certain physician—an ordinary practitioner—attended a woman in her first confinement, and left both mother and baby in an apparently healthy state. A peculiar listlessness however, on the part of the mother attracted his attention but not desiring to frighten the family, he made as an excuse, an interest in the baby, to have both come up and visit him as soon as the woman was able. A week passed and finally another and still no call. By accident he met the mother wheeling the baby in front of his office. He spoke to her, and the answer he received, increased his suspicions, that she was mentally unbalanced. He apprised the husband of his suspicions, and the latter said that he had noticed she acted kind of queer of late, but supposed most women were that way after a confinement. The family now began to watch her and at one time shortly after, interfered just in the nick of time, as she had bolted the door on herself and baby, and had turned on the gas. Of course she was then sent to an asylum. By simply reasoning along his line of experience this physician had prevented both a suicide and a homicide. The next illustration is of an experience that occurs in the practice of almost every physician. A boy of about 17 came from a farm into the city. He had schooling and obtained a position as clerk. After he had been at this position for about a year he began complaining of headache. He took some patented headache cure, and obtained considerable relief at first, but finally had to take large doses, and take it more frequently. Incidentally his employer noticed that he was beginning to fall below his previous high standard. An especially conspicuous maldevelopment was his carelessness with reference to his employer's property. Being called to account one day for some error, he picked up a heavy ink well and let fly at the head of the manager of the office, and then burst out weeping, exclaiming all the while that "everybody was against him. He didn't have a friend in the world. Before he did away with himself he was going to do away with some others he had in mind. Everybody made mistakes." The physician called in to treat quite a gash in the manager's scalp, also took the clerk in tow, and sent him to a hospital. Eventually, the correction of a very high grade of astigmatism cured both this fellow's headaches and disposition and he felt no further inclination to do away with anybody. This now

over three years. Thousands of examples may be cited where the physician was the "stitch in time" where criminality first manifested itself. And it is fit that the man who is trained in the ills of the body and mind, should be given the opportunities and empowered to act in the prevention and treatment of this great human ill.

Medical schools must realize that it will be greatly to the advantage of the human family to give special courses in the analysis of the human mind. From an analytical study will develop a well defined system of therapy. The State will learn the value of men thus trained, and the latter in turn will save the State millions in wealth. Already we in Vermont have joined the pioneer communities that have adopted the probation system. Also we have appointed a neurologist to the penal board. In other words we in common with other progressive States are seeking to minimize the quantity of crime by studying the criminal and treating him as a social affliction. But the criminal is more than a social affliction. He, or she, is a weed in the garden of useful growth. There are useful weeds of course, but they do not belong in the cultivated space. Transplanted—treated—taken in time, these may be turned to some good.

At the present time general interest is aroused in the criminal class. We are beginning to realize that like the insane, the criminal is a defective for whom there is a possible remedy. The remedy universally proposed, and which I am happy to say was first suggested by American investigators, is to train the mentally defective child—one of the greatest steps forward. In at least one correctional institute (Elmira, N. Y. Reformatory) 30 to 40 per cent of the criminals are said to belong to the class of mentally defective delinquents. From an examination of the prison reports of Massachusetts and Indiana the average would be even greater than that. It is hard to obtain statistics from other States, for while mental delinquency is recognized as a factor in crime, actual measures for the segregation of these have not yet (to my knowledge) been undertaken anywhere. Dr. F. W. Sears, who is doing pioneer work in this State stated sometime ago (*Vermont Med. Monthly*, Sept. 15, 1911) that at the Industrial School at Vergennes, there were a *very few low grade, a larger number of medium grade and a goodly number of high grade imbeciles*. The Hon. Homer Folks, President of the State Probation

Commission of New York, speaking of these delinquents, states, that "despite appearances to the contrary, children in their teens are often no further developed than the average child of 6 or 7 years, and that some adults, who are chronologically twenty or thirty years of age, are mentally no more than seven or eight years old."

This is certainly worth thinking over.

Who, therefore, should be the judge when these are apprehended the first time? Manifestly the physician. To the physician trained in psychiatry, and criminal psychology, crime is a scourge. It is the pathology of the social system. Think of it, in the year of 1911, the police of the cities of New York and Chicago, which conjointly have a population of 6,952,166, arrested for various crimes 215,702 individuals! In other words, one out of thirty-two. In some places I understand the ratio is as high as 1 to 15. Also every 31 persons in New York and Chicago must support—besides hospitals, almshouses, etc.—one criminal. And here are just a few items of expense necessary to maintain the criminal class. Judges, prosecuting attorneys, court-houses, police, prisons, wardens, turnkeys, and transport conveyances. Count also the loss of time on the part of the officers aforementioned, and the prisoner becomes indeed very expensive to the community. By a series of calculations, I have come to the conclusion, that one criminal sentenced for a felony and serving a three years term, is during these three years an expense to the community of a little over \$700.00. This too, allowing that he is so-called *self-supporting*.

The medical profession is taking very effective care of some scourges and by sacrificing their interests in behalf of preventative medicine, have lengthened the average life of individuals, have made certain places habitable, and have saved the community untold wealth by conserving the health factors. In the treatment of the scourge of crime, the physicians' duty too, will in time become that of prevention.

Forty per cent of mental defectives in prison! Two-fifths of the prisoners incarcerated had already committed *some* crime, before they were recognized as defectives. In the cities of New York and Chicago hundreds of thousands or perhaps millions, had suffered in body, and property, because 180,000 individuals were not recognized as mentally delinquent. I venture to say that ultimately, it would be a great saving to the State if it recognized the value of medical super-

vision of its criminals, also that much suffering and many lives would be saved to the community by the same procedure. Note for example the number of boys arrested and put on probation in New York State for a number of crimes, classified under the head of *malicious mischief*—234 out of 2,187 (10%). Malicious mischief in a boy means more capital offence later on, if that same boy is not taken in custody early and subjected to the proper treatment.

Malicious mischief is the expression of the degenerate mind that has not the opportunities to commit a greater crime. And the degenerate mind must be taken care of by a competent psychologist.

Dr. Sears is perfectly correct, when he says that the scholars in school should be classified according to their psychology. In other words, get the criminal before he has had a chance to commit a crime. Segregated that way it will be surprising to learn how many physical states are responsible for mental conditions especially *incurribility*. It is to be hoped that before very long the state will recognize the potentialities for good in their direction, on part of the physician, and will support in the medical colleges men who signify their intention of devoting themselves to the study and prevention of crime. "State ——— You spend a dollar on him, and he will save you a hundred!"

TREATMENT OF GONORRHEAL VULVOVAGINITIS IN YOUNG GIRLS.

Dr. Tische of Zurich (*Correspondence Blatt für Schweizer Aerzte*, No. 5) reports the following interesting case: A girl, two years of age, was infected through the mother with exudation for over two months. Treatment commenced Dec. 5th, 1910. Daily injection per Urethra and Vagina of 10 c.c. of ½% solution of Syrgol. Washed daily with boracic lotion. Dec. 12th, 1910, no material change, 1% solution recommended. Dec. 25th slight watery discharge, no gonococci. Mother is continuing treatment. Jan. 12th, 1911, a few leucocytes in mucus but no discharge. No secretion, no gonococci in slime, Feb. 20th, 1911.

I have frequently seen a complete cure in from five to eight weeks, by means of ½ to 1% nitrate of silver, but relapses could not be avoided al-

though they did not occur in the majority of cases. It has not been demonstrated that relapses will not take place after Arthigon injections.

A case of Vulvovaginitis which came under the writer's notice in 1909 was complicated with rectal Gonorrhoea in a girl of seven years. This was a very intractable case with frequent, painful slimy motions, charged with leucocytes and Gonococci. Such complications are rare, and it is the first case he had met. Kaunheimer describes a rectal case with these symptoms which were the prominent features in the above case. It can not be denied that recurrence may take place from chronic rectal gonorrhoea. It is therefore advisable to examine the stools carefully for the slime indications. The action of vaccine on Rectal Gonorrhoea is at present unknown, therefore local treatment with Ichthyol suppositories of Syrgol cones is the safest course to follow. Good results were obtained in female gonorrhoea by urethral injections of 1 to 2% solution of Syrgol and douching with 1 to 3%, also tampons soaked with ½% solution.

The author therefore strongly recommends this preparation of silver in the treatment of Vulvovaginitis.

THE CHLOROSIS OF YOUNG GIRLS.

To permit the blood stream of chlorotic girls to remain in an impoverished state, is to expose them to more than one peril. Such patients are usually high-school or seminary girls, struggling with duties that tax their every ounce of force. When the break comes, as it almost inevitably will, the physician has on his hands a girl whose recovery takes much time and care. In most instances this could be avoided were the girl put on Cordial of the Extract of Cod Liver Oil Compound (Hagee).

As a blood-maker and general tissue builder, it is of much value in chlorosis. Not only are the blood corpuscular elements increased in number, but also a noticeable improvement takes place in their quality. Cord. Ext. Ol. Morrhuæ Comp. (Hagee) will prove its merit in these cases and its systematic administration over a considerable period of time will save chlorotic girls much of the distress to which they otherwise would be subjected.

Vermont Medical Monthly.

*A Journal of Review, Reform and Progress in the
Medical Sciences.*

H. C. TINKHAM, M. D., }
B. H. STONE, M. D., }*Editors.*

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EDITORIAL.

The following quotation from a speech recently delivered by the Honorable John D. Works in the United States Senate in connection with the bill for the establishment of an independent health service requires very little comment in a journal that goes to medical readers. It speaks for itself, but it is such scurrilous talk, we will not dignify it by the name of argument, that thwarts the establishment of a public health service on a reasonable and efficient basis and makes possible the natural reproach that we look more carefully after our cattle and swine than we do our human lives. There are plenty of dishonest people whose interests are served by spreading such ideas and there are also plenty of honest but ill-informed individuals who are willing to believe such statements. These people little know that the league for medical freedom cited in the quotation and undoubtedly behind the attack in this speech was established by those hit hard by the pure food and drug act of 1906, and is officered and directed by men who not only oppose the establishment of a national board

of health but also fight the pure food law, vaccination, medical inspection of schools and in some cases even antiseptic surgery. From the position of this league in these matters it has been very aptly dubbed the league of the propagation of disease.

"Mr. President, there are various healing agencies at work in this country to-day. Some are schools of medical healing which depend upon drugs as the means of cure. Others depend upon manipulation of the body; others depend upon the action of one mind upon another as a means of healing; and still another upon the operation of Divine mind in the establishment of harmony, the regeneration of man and his restoration to health by that means. To the latter the use of drugs is regarded as a menace to life and health and opposed to their conscientious religious beliefs.

These different schools and other modes of healing may be divided into groups. It is impossible in the scope of such an address as this to consider or even mention them all. I will, therefore, confine myself to a few of the leading ones of each class. In the schools of healing by drugs may be named the allopaths, the homeopaths, and the eclectics. The healing by the action of one mind over another may be classed under the general designation of mesmerism, hypnotism, or suggestion—all meaning practically the same thing—and Christian Science, the only distinctive mode of healing by the operation of the Divine mind according to the teachings of Jesus of Nazareth.

No two of these schools of medicine or other modes of healing agree with each other. While some of them agree in the use of drugs, as a means of healing, they are entirely at variance as to the kinds of medicines to be used, the quantity to be administered, and the principle upon which the system of drug healing is based. The allopathic school of medicine is the oldest and

best known. Its devotees are wholly dogmatic and intolerant. They assume that there is no other efficacious mode of healing but theirs, and that all other practitioners are incompetent and a menace to the public health. They have formed one of the most powerful organizations of any kind in the country. They are ruthlessly using that power not to improve the practitioners of their own school only, but to coerce all people to accept their remedies and to suppress by law and persecution the practice of other means of healing. The American Medical Association is working in every state in the union to secure laws which will prevent any but practitioners of their school from practicing the art of healing. They have secured such laws in some of the states as I shall show farther along and are tireless in their efforts to secure other like restrictive laws in all other states. Having only partially succeeded in their efforts in this direction in the states, they have for a long time been beseeching Congress to help them to entrench themselves with all other powers of the government behind them where they may be supreme and may absolutely exclude all other practitioners than theirs from the practice of healing. They are using all the money and influence they can bring to bear and are practicing on the credulity of the ignorant public sentiment by the pretense that all of this is for the public good. Through their efforts the much dreaded practice of vaccination, which has, in my opinion, sacrificed more lives than it has saved, and maimed and made invalids of thousands, has been made compulsory by law; and now other serum remedies alleged to be preventives of various diseases and equally dangerous, loathsome, and objectionable, are being forced upon the people whether they want them or not.

The officers of the army and navy are the willing instruments of these medical men to compel American citizens to submit to be poisoned

with their loathsome preparations. If a soldier or sailor refuses to submit to vaccination or other serum treatments, for typhoid fever, and other diseases, he is promptly dismissed from service or placed in irons until he submits or is otherwise punished; and now these doctors want Congress to so legislate as to give them full control of the medical, the sanitary and hygienic activities and bureaus of the government that their powers may be complete.

The doctors of this school hold every medical position in the government to the exclusion of every other school and no one who believes in the prevention or healing of disease by any other means than theirs, need apply.

Mr. President, the one great trouble is that the people do not think for themselves in any matter affecting the public health; they have preferred to rely upon the doctors and to be guarded and controlled by them. Public officials and the Congress of the United States do not trouble themselves about it nor hold themselves responsible. They generally evince a sublime indifference to the subject beyond what the doctors say or recommend and the people are fleeced of millions of dollars in alleged works for the public health which had better be thrown away. They have much more faith in the doctors than the doctors have in themselves or in each other. The competent doctor has long since learned that drugs are poisons and that they do not heal. Consequently the conscientious doctor no longer gives or advises the giving or taking of drugs, but the incompetent and unselfish, and unworthy still makes his living that way.

The allopathic school of medicine is noted for the quantity of medicines they administer and their nauseous and distasteful character—so much so that their mode of treatment is often characterized as cruel and inhuman. So deleterious and harmful are their drugs that the homeopaths claim that a large part of their

practice comes from those who have temporarily or permanently suffered from the effects of the allopathic's drugs. But I am glad to say that the better and more intelligent physicians of their school have given up the use of their strong drugs in a great degree. Their experience has taught them that such drugs do not heal but engender and cause disease. Let us hope that they may soon reach that degree of intelligence that will lead them to cease the use of any drug altogether. It would be a blessing to the human race if they would at the same time teach their patients to know that they have learned that the inanimate drug has no human quality and had better not be used. The people have been erroneously taught to rely upon drugs for their healing and have blindly believed in them so long that to deprive them of them would be disastrous until they learned that lesson. Drugs and the drug doctor's administration of them have healed disease only because of the faith of the patient in the doctor and in his drugs and for no other reason. Doctors themselves bear witness to this fact.

In a recent case of malpractice against a dentist the question of the competency of a physician to give an expert opinion regarding the alleged malpractice was questioned. The trial judge held that the testimony was incompetent and the case has gone up to the superior court on this point. The practitioner's question was one involving the fracture of the jaw during the extraction of a tooth and a consequent sepsis. From the point of view of the non-legal mind there would seem to be only one answer. It will be interesting to watch for the legal decision on this point.

The Vermont State Medical Society is to be congratulated on having secured for their next annual meeting which is to be held the 10th and 11th of October, addresses by Dr. John D. Mur-

phy, who will speak on the recent advances in surgery of bones and joints, and Dr. John F. Anderson, director of the Laboratory of the Public Health and Marine Hospital Service at Washington, who will speak on recent work in the etiology and communicability of infectious disease and Judson Deland, professor of clinical medicine in the Medico-Chirurgical College of Philadelphia, who will speak on the diagnosis and treatment of syphilis. Seldom has the program of the society been graced by so many names of such national repute.

The recent bulletin issued by the Carnegie Foundation on Medical Education in Europe stripped of its redundancies and repetitions cannot fail to favorably impress the unbiased medical teacher not only by the painstaking manner with which the facts were gathered but also by the fearlessness and candor with which the conclusions are drawn from the facts.

The inconsistencies and hasty judgments which so weakened the bulletin on medical education in the United States, issued two years ago, seem to be entirely absent from this report perhaps because our knowledge of foreign universities is less intimate than of those at home but more probably because the writer of the bulletin was less exposed to local influences and less hampered by preconceived theories.

To even the superficial reader it is obvious that Mr. Flexner has rung the knell of the proprietary medical school. By a formidable array of facts he has uncovered its weaknesses and by irrefutable argument has shown that however it was suited to former conditions the reason of its being is past. Hereafter the medical school must be an institution for education and not for exploitation. It must be an integral part of a university supported either by endowment or by state appropriations.

The second point that Mr. Flexner dwells upon is the necessity for a good basis of medical education. In this respect the university schools of this country compare favorably with those of Europe, requiring a high grade of secondary education together with at least a year of biology, chemistry and physics. The question immediately arises since these subjects are so intimately connected with medicine, can they

be better taught in the scientific department of the university or should they constitute the first year in the medical course of five years.

Third. Emphasis is laid upon the fact that no longer is it adequate that the teaching of medicine be confided to the extra hours of the busy practitioner but that the teaching of medicine is a profession as much as the teaching of Greek, Latin or Physics and a man must devote all of his time to the medical sciences if he is to be a successful teacher. In the clinical branches the conditions are different. To train the student to go out into private practice it would seem that a teacher should understand well the exigencies of private practice so different from those of hospital practice. He should understand the art of medicine as well as the science. He should understand not only the patient's disease but also his attitude toward disease as well as his attitude toward the physician—things which can never be learned in a hospital and which are so necessary to successful practice.

Therefore in the clinical branches it would seem almost obligatory that the teacher should retain some of his private practice but not enough to interfere with his teaching.

Fourth. The statement that anatomy should be learned in the dissecting room and disease by the study of sick people seems to need no argument for its support. This does not mean that the student should dissect hundreds of subjects for the purpose of seeing all the anatomical anomalies but that he should intelligently dissect every part of the human body at least once and in this way he studies each part at least three times. Nor does it mean that he should examine hundreds of cases of pneumonia but the careful examination of a few cases will suffice. More than that causes the student to lose interest and clouds the clear cut picture. This practical work accomplishes little if not constantly gone over by demonstrations, quizzes and recitations on the parts dissected or the diseases exhibited to fix it in the memory and to get a clear concept by the use of all the senses.

Fifth. Clinical instruction is better in Europe than in America. This according to Mr. Flexner, is because the hospital and medical schools are in much closer relation. A hospital in Germany is not only for healing the sick but also for teaching and for research, and both the public and the hospital managers know this, and

know, also, that such a broad minded attitude best subserves the public good.

Every hospital trustee in America could read with profit the chapter on clinical instruction in Germany.

In the introduction Mr. Pritchett says, "Probably no other men have in their hands so great an opportunity to advance medicine as the trustees of hospitals."

In a short article it is impossible to even mention many other admirable points brought out by this investigation. The object of this paper is to inquire how the Medical Department of the University of Vermont measures up to these modern requirements of medical education, for, as Mr. Pritchett says, "No medical school that lacks proper facilities has any other motive than the selfish advantage of those that carry it on."

1st. The Medical School of the University of Vermont is one of the few in this country which is actually and not merely nominally an organic part of the university.

2nd. The basis of medical education depends largely upon the quality of the secondary education. The secondary education of the State of Vermont as in many other states, is not up to the standard. It lacks organization and thoroughness. Although it may nominally cover the ground, actually the student is allowed to pass the grades with but little real knowledge of the subjects taught. The Medical Department, in common with other medical schools, suffers from this defect but its requirements for entrance are those recommended—a high school diploma and one year at a university in the study of Biology, Chemistry and Physics.

3rd. The medical sciences with the exception of legal medicine are taught by men who devote their whole time to teaching these subjects and to research work. The laboratory facilities are excellent and plenty of material is available. Considerable research work is being done and more will be done and the whole laboratory system is above reproach.

4th. Anatomy is taught in the dissecting room with ample material and the constant attendance of teachers.

Medicine is taught from a study of the sick and the surgical material is more than enough for all our needs but should be made more available for teaching purposes. The medical material although considerable is as yet inadequate.

Burlington and Winooski have a combined population of 26,000 and Burlington is the natural medical center for 125,000 more. In this section there should be an abundance of clinical cases but as yet the medical side of the hospitals has not been managed in such a manner as to attract all the available material nor has it all been used for medical education.

5th. The Medical School of Vermont, and the same can be said of almost all medical schools of the U. S., suffers from the prevailing idea that hospitals are simply for the cure of the sick and the professional benefit of the hospital staff. The trustees of the Mary Fletcher Hospital are an able body of men. They have placed the hospital on a sound financial basis. They have developed in a remarkable manner the surgical side and they are deserving of unstinted praise and support from the medical profession of Vermont. They have yet before them the development of the medical side and the placing of the whole institution on a higher scientific plane. This will be better accomplished by a closer affiliation with the medical school and a more liberal policy in encouraging research work by the scientific workers in the school and freer opening of the wards for teaching purposes.

Six months study in the Johns Hopkins Hospital convinced the writer that more careful and more scientific diagnoses were made in the wards open to the medical student than in the private wards. Years ago a woman clothed in a seal skin coat and wearing diamond earrings presented herself at the Vanderbilt clinic. When the writer asked her if she could not pay a physician, she replied "yes," but that she "had learned that she could get better treatment in the clinic because they taught students there." The patients must of course be safe-guarded against any harmful excitement or fatigue. The old fear of rowdyism among the students is past. The medical student of today is a gentleman with a love for his scientific work and a love for humanity. We agree with Mr. Pritchett when he says that "no hospital can serve either its own patients or its own community more efficiently than by opening its facilities in the fullest way to a rightly conducted medical school."

The Medical School of the University of Vermont is a rightly conducted medical school. It has more than fulfilled the demands of modern medical education; it measures well up to the standard set by the most progressive universities.

Its recent graduates have taken an extremely high stand before the examining boards of many states.

We may accept as proven that the Vermont medical school is now turning out a fine body of well trained physicians but we must face the question is there a good reason why there should be any kind of a medical school in Northern New England? The answer is yes. As long as the University of Vermont Medical School keeps pace with modern education it is a great good to the state and should be supported by the state. If it falls below the standard on account of lack of funds or inefficiency in management then it should cease to exist and the state will suffer.

The two great problems which today confront the student of social conditions in Vermont are first how to keep the people on the farms and out of the cities and second, how to stop the population of the back districts from degenerating. A well trained country doctor is an important factor in the solution of these problems. His presence in the small nearby village robs farm life of one of its greatest drawbacks. The uplift of the educated doctor, appealing to the secular part of the community is as great or greater than that of the minister. In these small communities by sometimes cultivating the soil of a small farm he is able to live where the city trained doctor would be starved out. He is one of the community, interested in its interests and he would never have been a doctor if it had not been for the nearby medical school. No Harvard or Johns Hopkins medical graduate would or could make a living in the back towns of Vermont. But the man whose childhood has been spent in one of these towns, who knows the life and its limitations and who could not afford to attend the larger universities, goes to the state medical school and after his graduation, and usually an extra year of hospital service, returns a well equipped physician, able and willing to attend his neighbors in the surrounding country.

The writer is not a theorist trying to dictate affairs in the country districts from a twenty storied building in New York. He has driven over the hills of Vermont in actual country practice but has also spent many years in the great medical centers of this country and of Europe. Close the doors of the University of Vermont Medical School and you will destroy the greatest

educative and revivifying force in the state. No man gets so close to the people as the doctor. The tide of emigration will in a few years again begin from the back districts, leaving a rapidly degenerating residue.

The medical school needs more medical material which can be easily obtained by the enlarging of the hospitals on the medical side and their closer affiliation with the school. We can depend upon the loyalty of the profession in the city and surrounding towns to furnish us with all the patients we can take care of. The surgeons of the medical school give every year, to the poor of the state, more than \$150,000 worth of surgical service. The medical men are able and willing to give an equal amount of skilled medical service if opportunity is offered them. From a pecuniary as well as a social and a scientific standpoint the facilities of the medical school should be increased. Every move of this kind calls for more money and more money must be forthcoming either from greater state support or more liberal endowment, if the University of Vermont is to continue the great work it has been doing in recent years. The people of Vermont sit up and swell with pride when educators from other states praise the Morrill law which has done so much for government support of education. Why should not this same people follow the lead of their great senator?

Mr. Flexner and Mr. Pritchett are doing a wonderful thing for medical education, and they are doing it fearlessly. Unfortunately some educators are profiting by their work to further their own private interests. Mr. Flexner's own words must set at rest the contention about the medical school in small towns, "A school of medicine can be developed in a small university town. The ideals are there, the contiguous departments are there, *there is an absence of the distractions which have thus far proved so damaging to city clinicians.* A faculty of distinction with a hospital well equipped for the care of the sick and for teaching and research can successfully overcome the most serious difficulties of the situation. The problem can be solved by intelligent organization and liberal support."

F. W. SEARS.

OVERLOOKED CASES OF DIABETES.

Von Noorden and others have drawn attention to neurogenous glycosuria, due to shock or injury to the brain, mental stress or excesses.—*Medical Council.*

NEWS ITEMS.

✓ Dr. L. R. Brown, who has practiced for a number of years in Winchester, N. H., is now located in Laconia, N. H.

Dr. T. H. Hodskins of Tilton, N. H., has gone to Europe for a trip which will extend over two or three months.

Mr. John White, the well known representative of John Wyeth & Brother, has been seriously ill with pneumonia at St. Johnsbury during the last month.

✓ Dr. I. H. Purdy, who practiced for a time with his father in Keene, N. H., is now located in Bellows Falls, Vt.

Dr. J. B. Hyland died suddenly in Keene, N. H. The doctor was born in Arlington, Vt., 1862, and graduated from Harvard in the class of 1884. He came to Keene over twenty-five years ago and became one of its teaching physicians in addition to which he took a prominent part in politics and city affairs. He was also a thirty-second degree Mason.

✓ Dr. J. L. Miner, who had been practicing for several years in Windsor, Vt., leaves at once for Oklahoma to locate for practice. Dr. Miner's home is in St. Johnsbury.

✓ Dr. H. H. Miltimore of St. Johnsbury, Vt., has gone to Chicago for post-graduate study.

Prof. William L. Hooper, who has been associated with Tufts College for thirty years, has been appointed acting president.

✓ Dr. MacDonald has left Concord, N. H., and is now doing institutional work in Massachusetts.

✓ Dr. Duffy, formerly of Gardner, Mass., is now located in Concord, N. H., where he limits his practice to the eye, ear, nose and throat.

✓ Dr. R. H. Barker left Chester, N. H., and is practicing in Derry, N. H.

Dr. J. S. Roberts has removed to Chester, N. H., from Nashua, N. H.

The September number of the *Proctologist* will contain the papers and discussions of the American Proctology Society for 1912.

The 14th annual meeting of the American Hospital Association will be held in the Hotel

Ponchartrain, Detroit, Mich., on Sept. 24, 25, 26, 27, 1912.

✓ Dr. W. G. Watt, 1912 U. V. M., will take a post-graduate course at the New York Post-Graduate School during the months of August and September followed by a course at Hill's Maternity Hospital, after which he will practice in Vergennes.

✓ Dr. H. Tyndall, 1912 U. V. M., has an appointment as interne at St. Vincent's Hospital, New York.

Dr. W. D. Tanner, 1912 U. V. M., has accepted an internship at Fanny Allen Hospital.

✓ Dr. A. C. Kinney, 1912 U. V. M., has accepted an internship at the Backus Hospital, Norwich, Conn.

✓ Dr. G. A. Ferguson, 1912 U. V. M., has accepted an internship at the Backus Hospital, Norwich, Conn.

✓ Dr. A. R. Weed, 1912 U. V. M., is taking a course at Hill's Maternity Hospital, New York City.

✓ Dr. E. G. Hudson, 1912 U. V. M., has an appointment with the New York Lying-In Hospital.

✓ Dr. W. H. Wright, 1912 U. V. M., has located in Georgia, Vt.

✓ Dr. B. C. Powers, 1912 U. V. M., has an appointment as interne in the Western General Hospital, Montreal.

✓ Dr. H. L. Mains, 1912 U. V. M., has an appointment as interne in the Western General Hospital, Montreal.

✓ Dr. H. L. Frost, 1912 U. V. M., has located in Pittsford, Vt.

✓ Dr. J. C. Williams, 1912 U. V. M., has received an appointment as interne in the St. Francis Hospital, Hartford, Conn.

✓ Dr. A. A. Cross, 1912 U. V. M., has received an appointment as interne in the St. Francis Hospital, New York.

✓ Dr. A. B. Fitzgerald, 1912 U. V. M., has received an appointment as interne in the Mary Fletcher Hospital, Burlington, Vt.

✓ Dr. Warner Hiltbold, 1912 U. V. M., has been appointed as interne in the hospital at Salem, Mass.

✓ Dr. C. A. Peterson, 1912 U. V. M., has been appointed as interne in the hospital at Salem, Mass.

✓ Dr. H. B. Small, 1912 U. V. M., has received an appointment as interne at the Mary Fletcher Hospital, Burlington, Vt.

Dr. C. P. Munsill, 1912 U. V. M., has opened an office for the practice of medicine in West Hartford, Vt.

✓ Dr. M. D. Riordan, 1912 U. V. M., has received an appointment in the Waterbury, Conn., Hospital.

✓ Dr. G. B. Verbeck, 1912 U. V. M., has accepted an internship in the Orange Memorial Hospital, Orange, N. J.

✓ Dr. A. H. Montford, 1912 U. V. M., has received an appointment as interne at the Mary Fletcher Hospital, Burlington, Vt.

✓ Dr. T. J. Allen, 1912 U. V. M., has received an appointment as interne at the Mary Fletcher Hospital, Burlington, Vt.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MALE LACTATION.

R. C. CREASY, Wiconisco, Pa. (*Journal A. M. A.*, March 16), gives the history of a case of a fireman, aged 24, very muscular and robust, who complained of pain in the mammary glands and a milk-like secretion oozing from the nipples. This had appeared within eight weeks and was especially troublesome during and after his working hours. The secretions increased to such a degree as to saturate his clothing. He had been in the habit of rubbing his left breast, and Creasy considers this a chief cause. The left gland was larger than the right, the nipple was pointing, but there was little pigmentation in the area. There were, however, shot-like nodules within the skin tissue simulating the Montgomery nodules of the female gland. In other respects the patient's condition was normal. Under the microscope fat cells were numerous in the secretion but there were no pus-cells or erythrocytes. Belladonna internally to full physiologic effects and local application of belladonna ointment checked the secretion and relieved the patient's symptoms.

THE HAY FEVER PROBLEM

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The Adrenalin Solutions

These are undoubtedly the most widely used products in the treatment of hay fever. They control the nasal discharge, allay congestion of the mucous membranes, and thus reduce the swelling of the turbinal tissues. They are prompt in action, reasonably certain, and have no deleterious constitutional or local effects.



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Applied to the nasal mucous membrane these preparations afford prompt relief. They were used with marked success during the hay fever season of 1911. The fact that they afford relief which continues for several hours in many cases is worthy of consideration when one remembers the fleeting character of most local anesthetics.

Solution Adrenalin Chloride

Adrenalin Chloride, 1 part; physiological salt solution (with 0.5% Chlorotone), 1000 parts.

Dilute with four to five times its volume of physiological salt solution and spray into the nares and pharynx.

Ounce glass-stoppered bottles.

Adrenalin Inhalant

Adrenalin Chloride, 1 part; an aromatized neutral oil base (with 3% Chlorotone), 1000 parts.

Dilute with three to four times its volume of olive oil and administer in the manner described above.

Ounce glass stoppered bottles.

Anesthone Cream

Adrenalin Chloride, 1:20,000; Para-amido-ethyl-benzoate, 10%; a bland oleaginous base.

A small quantity (about the size of a pea) is applied three or four times a day, the patient snuffing it well into the nostrils.

Collapsible tubes with elongated nozzles.

Anesthone Inhalant

Adrenalin Chloride, 1:10,000; Para-amido-ethyl-benzoate, 10%; an aromatized neutral oil base.

Apply with a nebulizer or by means of a pledget of cotton.

Ounce glass-stoppered bottles.

Anesthone Tape

A selvage-edge tape, one-half inch wide, impregnated with a 1:20,000 solution of Adrenalin Chloride and 5% soluble salt of Para-amido-ethyl-benzoate, agreeably perfumed.

A piece two or three inches long is cut off and inserted in each nostril.

Small vials.



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THERAPEUTIC NOTES.

POULTICES SHOULD BE STERILE.—Prof. George Howard Hoxie of the University of Kansas in his most excellent book on "Symptomatic and Regional Therapeutics," states under the heading of localized inflammation that "the danger of infection should ever be in mind in applying a poultice, for the maceration incident to the poultice favors infection, even if in ordinary circumstances one might consider the area germ proof."

Again he refers under the chapter on Pain, to the dangers from using dirty poultices and that skin affections have been added to the ordinary disorder when bread-and-milk or linseed poultices have been used to relieve pain.

It is thus noted how important then, it is, in the employment of a poultice for the relief of pain and inflammation, that a sterile and trustworthy product be applied. Inasmuch as poultices are a means of producing Hyperemia by the use of heat and insofar as they do this better than by other means, it is interesting to observe that in the belief of Prof. Hoxie that "the clay poultices, known best in the form of Antiphlogistine, are the best to employ, as they are sterile and clean."

Antiphlogistine affords not only a safe but clean method of utilizing the advantages of hot moist heat in the treatment of pain or inflammatory conditions. It maintains heat in contact with the part for hours and its adaptability is only secondary to its therapeutic value.

THE RETURN FROM THE COUNTRY.—Almost every city family, whose exchequer will permit, is accustomed to spend a goodly portion of the heated term away from home. This is both natural and salutary, provided good judgment is exercised in the selection of the country place or summer resort, as regards its general healthfulness and sanitary environment. Unfortunately sanitation on farms and in rural communities is not always what it should be and the result is that many health and pleasure seekers return in the Autumn depressed and run down or perhaps infected with malarial or typhoidal poison. In other cases, especially at crowded fashionable resorts, because of the continual round of exciting amusements, some are tired and fagged out instead of rejuvenated as the result of their summer's outing. Many are certainly in need of that general constitutional reconstruction and building up of force and resistance which is necessary to withstand the business or social strain of the fall and winter. In such cases there is no one single remedy quite as dependable as Pepto-Mangan (Gude). It increases appetite, restores strength and general vitality, reinforces the hemoglobin content of the blood and acts as a prompt and efficient general tonic and reconstructant for patients of all ages.

THE NEGLECTED THERAPY OF CONVALESCENCE.—The physician of education and experience, who keeps in touch with the progress of medicine generally, is well informed as to the treatment of most of the "thousand and one" ills that he is called upon to combat. The diagnosis and treatment of acute conditions as well as the successful management of the

more chronic affections are subjects which he is constantly investigating and studying. It so happens, however, that after the dangerous shoals of medical navigation have been successfully negotiated and when the crisis or danger point has been passed, the physician is all too liable to relax his vigilance and to allow the patient to convalesce without sufficient attention to the therapeutic details of this important period. While the feeding of the convalescent is of great importance, the medico-tonic treatment is equally essential, in order to improve the appetite, tone the digestive, assimilative and eliminative functions generally and to hasten the time when the patient shall be once more "upon his feet." Among all of the general reconstituent and supportive measures in the therapy of convalescence, none is more essential than the reconstruction of a blood stream of vital integrity and sufficiency. Pepto-Mangan (Gude) is distinctly valuable in this special field, as it furnishes to the more or less devitalized blood the necessary materials (iron and manganese) in such form as to assure their prompt absorption and appropriation. One especial advantage of administering these hematinics in this form, is that digestive disturbance is avoided and constipation is not induced.

From the University Eye-Clinic at Jena, Prof. D. W. Stock (Director), come very excellent reports from Dr. G. A. Hegner, Senior Clinical Assistant, upon the results obtained from the use of Syrgol in conjunctival inflammation, especially gonorrhoeal conjunctivitis.

The favorable reports of Kollbrunner regarding the use of Syrgol in specific urethritis induced the ophthalmologists at Jena to make experiments with the new preparation. Hegner states that their results have been so gratifying that Syrgol is looked upon by them as a most valuable addition to the various means of treating suppurative diseases of the conjunctiva. He says that, where there is thickening of the eyelid with extreme edematous swelling and the tissues became so hard as to render it difficult to inspect the diseased structures in order to confirm the diagnosis, treatment should be given with the purpose of allaying the inflammation and reducing the swelling of the lid. "Protargol, Sophol and Argyrol have in the past proved beneficial, but since our experience with this new salt, Syrgol, we regard it as superior in its ultimate results."—Hegner.

Syrgol is a brownish-black, odorless colloidal oxide of silver. Physically it consists of shining crystalline scales which dissolve in two parts of water. A five per cent. solution is almost painless and does no damage to the cornea.

In twenty cases of gonorrhoeal conjunctivitis, he reports that gonococci disappeared from the secretions in a short time and speedy recovery took place in every instance. Three exceptionally severe cases are reported in detail, speedy recovery resulting in each instance. In the three cases described the most noteworthy feature was the rapid disappearance of the gonococci and the prompt subsidence of inflammation.

Good results were also observed in many cases of ophthalmia neonatorum. By using Syrgol healing took place usually in about a week. In two cases recovery took place in four days, and seldom was it necessary to continue treatment longer than two



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weeks. An interesting fact that he mentions was that two cases which were not doing well previously showed rapid improvement when transferred to the clinic where Syrgol was employed.

Syrgol proved of much service also in cases of conjunctivitis following operation for cataract. Favorable results were obtained also in cases of inflammation of the lachrymal ducts. He mentions a patient suffering from an acute dacryocystitis in which there was swelling and considerable redness, together with feeling of pressure over the duct. The sac was washed out thoroughly with a one per cent. solution of Syrgol and complete recovery followed in eight days. A similar result was obtained in a case where there was a purulent discharge from the lachrymal sac, but no inflammation present. Two such cases, of course, are not sufficient to enable one to draw positive conclusions, but they certainly indicate that good results in both acute and chronic inflammations of the lachrymal sac may be obtained by irrigation with Syrgol.

The manner of applying the remedy is quite simple. In acute cases of blenorrhea a five per cent. solution is dropped into the conjunctival sac from two to three times a day, and the eye is bathed frequently with a solution of boracic acid in order to wash away accumulated secretions. In some cases it may be found advisable to use a two per cent. solution.

The treatment of gonorrhoeal conjunctivitis is made easy because of the absence of irritation following the use of Syrgol. Instillation of this remedy in the eye and using an antiseptic solution as a wash is quite often sufficient to effect a cure.

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MEDICAL COLLEGE GRADUATES.

In 1880 there were graduated 3,241 physicians from all schools. In 1904 the number graduated was 5,747—perhaps the high water mark. Ever since, possibly because of more stringent supervision of standards, the number has decreased, till last fall it reached 4,273. In 1880 there were for every 100 graduates, 82 regulars, 12 homeopaths and 6 eclectics. In 1911 there were for every 100 graduates, 94 regular, 3½ homeopaths and 2½ eclectics. The homeopathic colleges graduated 380 in 1880 and only 152 in 1910. The reduction in the eclectic graduates has been from 188 to 110. The physiomedical has ceased to exist. This shows the trend of medical education.—*American Medicine.*

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WHAT THE SANITARY CRANK SEES.

The *Monthly Bulletin* of the Indiana State Board of Health reports the following phenomena as having been observed in cafés by a sanitary crank. We commend the habit of observation to everyone interested in health, remembering, however, that it is not the mere fact of observing that will change conditions, but by getting awfully busy in a clean up campaign:

"I have seen a waiter wipe his sweaty forehead with the towel he carried on his arm for wiping dishes.

"I have seen knives, forks and spoons which had been used a short time before simply wiped on a not too clean tea-towel without even dipping them in water.

"I have seen tumblers, after having been used at table, simply wiped on a not too clean tea-towel without even dipping them in water.

"I have seen knives, forks, spoons and tumblers, after use at table, rinsed in greasy yellowish dishwater and then wiped with a tea-towel which was an approach to rubber roofing in color.

"I have seen restaurant kitchen help pass hands through their hair and then handle sliced bread.

"I have seen two mice jump out of a bread box and the sliced bread therein sent to the table as if nothing had happened to it.

"I have seen a waiter pick two flies out of a glass of milk with his fingers and then place it on a table to be drunk by a child.

"I have seen a cook at a nickel bound grill in white cap and coat, insert his finger in his mouth to scratch the interior surface and upon removal immediately pick up a nice porterhouse steak and place it upon the broiler.

"I have seen flies proceed direct from a spittoon to a bowl of berries on the counter which were waiting there to be served when called for.

"I have seen a cook change his shoes and socks in his kitchen and then, without washing his hands, proceed with the handling of food.

"I have seen a bowl of sugar spilt upon the floor, then picked up with the hands and carried directly to the table.

"I have seen a basket of lettuce sitting on the floor in a restaurant kitchen and a dog belonging to the cook, but never mind—

"I have already probably seen too much and will cease with the observation that we eat heaps of microbes without receiving any harm, and then again harm does result."

ACUTE CATARRHAL HEADACHE.

After an acute catarrhal cold has been well established, it is quite common to find a most persistent and aggravating headache, resulting from the infection of the antrum, the frontal sinus and the Eustachian tubes. The openings from these structures are so contracted that a tough secretion finds no means of outlet. Ammonium chloride will, in due time, liquify the secretion and allow of its discharge. But the patient may meanwhile suffer most intensely, and some relief must be sought.

The coal-tar synthetics give temporary relief; but, in our experience, a relaxation of the parts will promptly bring reasonable relief. This can be accomplished by administering full doses of tr. gelsemium. This drug is comparatively safe, and we give large doses to physiologic effect. One or two large doses will give better results than will several small ones, and the peculiar ocular symptoms of this drug is the signal to discontinue. The relaxation resulting is long continued.

ALTRUISM AND FEDERAL QUARANTINE.

The estimated damage from injurious insects and plant diseases to horticulture and agriculture was, for the year 1910, about \$750,000,000. Strenuous efforts are being made to establish a Federal quarantine, but the importers of foreign nursery stock and fruits are fighting the plan. Federal quarantine against diseases affecting human beings are even more imperative, and this measure is being urged by altruistic physicians.

If the Federal power largely prevents the importation of disease, physicians will suffer a financial loss through reduction of practice. On the other hand, plant quarantine is to the financial advantage of the tillers of the soil. We confess we are speculating over the question of who will beat the other to it. If we are as altruistic as we profess to be, we surely ought not to let the farmers "get there first."

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CATALOGUES

The Medical Department of the University of Vermont will appreciate it very much if any of the Alumni can furnish catalogues of the Medical Department of the following dates to complete the files, 1857-66-7-8-9-71 and 73. These may be sent to the Dean.

MAL DE MER.

A Philadelphian, on his way to Europe, was experiencing seasickness for the first time. Calling his wife to his bedside, he said in a weak voice: "Jenny, my will is in the Commercial Trust company's care. Everything is left to you, dear. My various stocks you will find in my safe deposit box." Then he said fervently: "And, Jenny, bury me on the other side. I can't stand this trip again, alive or dead."—*Lippincott's*.

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PUBERTAS PRECOX AND OVARIAN TUMOR.

An interesting case of this kind, of which there are only 126 reported in medical literature was recently reported by Verebily to the Kgl. Artzengesellschaft of Budapest. The patient was a girl 6 years of age, who, up to her fifth year, was of normal development, and childish behavior. In the course of one year she developed regular monthly menstruations, and other phenomena of the female pubescence. She grew 10 cm. above the average height for a child of her age. Her breasts were the size of small oranges, and presented a glandular structure, and pigmented areolae. There was an abundant growth of hair both in the axillary and pubic regions. The labia were thickened, and pigmented, the vagina broad, and the examining finger passed readily through the rounded hymen. Her voice was deep, and she behaved rather coquettishly. A notched tumor the size of a child's head, and attached to the left uterine cornua, could be palpated in the abdomen.

Operation revealed a very vascular ovarian sacroma. The uterus was the size of that of an 18 or 19 year old female. The right ovary was normal.

Recovery was uneventful. Post-operative history: Menstruation has ceased. The new growth of hair has disappeared. The breasts have shrunk, and infantility has returned. Only the deep voice remains. But two other cases of those reported in literature were caused by a genital tumor.

 DRUGS TO BE WITHHELD DURING MENSTRUATION.

Hartwig Kandt, in the *New York Medical Journal*, points out that menstruation involves physiologically an engorgement of both uterine and ovarian circulation. During this period, therefore, we should withhold:

1. Drugs which tend unduly to increase this normal pelvic congestion, as drastic purgatives (aloes, podophyllin, salts), hot drinks (alcoholic or otherwise), hot water, sitz or full baths, vaginal douches, poultices of mustard, flaxseed or kaolin to the lower abdomen.

2. Drugs which would tend to hinder this normal congestion, as cold water (ice cold

drinks, full or sitz baths), cold applications to the lower abdomen (ice coil, ice bag).

3. Drugs changing the coagulability of the blood (calcium chloride, calcium and strontium lactate).

4. Drugs tending to cause abnormal contraction of involuntary muscle, by either paralyzing the nerve endings (belladonna, atropine) or by direct stimulation of the uterine muscle (ergot, quinine, strychnine, asafetida).

With the average modern woman, menstruation is not merely a localized pelvic process, but seems to unbalance to some extent her mental and psychic equilibrium. We should not add to this disturbance by the exhibition of general stimulants (strong alcoholic beverages) or general depressants (bromides, chloral).

Finally, it may not be amiss to protest against the administration of opiates during this period, except in emergencies, for fear of creating a habit.—*Med. Brief.*

 A RECORD FOR FECUNDITY.

A report comes from Boynton, Okla., that the station master of that town and his wife are the parents of eleven children born in three years. Their eldest child is fourteen years of age and twins are now five years of age. A year after the birth of the twins triplets were born and the following year another set of triplets made their appearance; a year after this five children arrived on the same day, making a record of eleven in three years.—*Medical Record.*

 INFANT DEATH RATE.

The total number of infant deaths in New York City from January 1 to August 12 was 9,398, as compared with 10,365 for the same period in 1910, a total decrease of 967. It is the hope of the Health Commissioner to show a difference of 1,000 by the end of the summer. For the week ending August 12 there were 410 deaths of infants under one year of age, and for the corresponding week of 1910, 422. The week ending August 19 shows 412 deaths of infants under one year of age, as against 396 for the corresponding week of 1910.



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Official Organ of the Vermont State Medical Society.

Vol. XVIII, No. 9.

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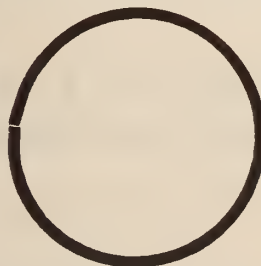
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“there is no surgeon of any experience who is not convinced of the soundness of the principle which underlies Bier’s hyperemic treatment, and this being accepted there is every reason to discard the ice bag since the latter brings about a condition directly opposite to what we strive to accomplish in carrying out this principle in the treatment of inflammation involving the peritoneum.” Dr. A. M. Fauntleroy, Surgeon, U. S. Navy, *Medical Record*, August 3rd.

Dr. Fauntleroy demonstrates that while the ice bag relieves pain by practically producing numbness as in a frost bitten toe or ear, it also decreases hyperemia, leucocytosis, and encourages stasis in the part to which it is applied.

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MEDICAL STUDENTS IN FRANCE.

Bonnette, discussing in *Presse médicale* for May 18, 1912, the military requirements of naturalized citizens of France, points out that there were registered on January 11th, in the various educational institutions of France, 8,265 medical students, 7,400 men, of whom 742 were foreigners, mostly Turks, Bulgarians, and Roumanians, and 865 women of whom 357 were French and 508 foreign.—*N. Y. Med. Journal*.

A MATTER OF EDUCATION.

A newly made magistrate was gravely absorbed in a formidable document. Raising his keen eyes, he said to the man who stood patiently waiting the award of justice:

"Officer, what is this man charged with?"

"Bigotry, your worship. He's got three wives."

The new J. P. rested his elbows on the desk and placed his finger tips together. "Officer," he

said, somewhat sternly, "what is the use of all this education, all these evening schools, all the technical classes, and what not? Please remember, in any future like case, that a man who has married three wives has not committed bigotry, but trigonometry. Proceed."—*St. Paul Dispatch*.

DR. WILEY'S GONE AWAY.

The little germs that hide in cheese,
In butter, eggs, sardines and teas
All dance the Turkey Trot today—
Dr. Wiley's gone away.

The busy little microbes all
That wait the Grim Destroyer's call
Are happy, care-free, blithe and gay—
Dr. Wiley's gone away.

We'll just sit down and starve to death,
Afraid almost to draw our breath:
Don't ring the dinner bell today—
Dr. Wiley's gone away.

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INFECTION.

A baby smiled in its mother's face;
 The mother caught it, and gave it then
 To the baby's father—serious case—
 Who carried it out to the other men;
 And every one of them went straight away
 Scattering sunshine thro' the day.

A peritonsillar abscess as a rule is more painful than serious. But one should not forget that patients have died of suffocation and that erosion of a vessel may take place in the wall of the cavity and cause death.—*Amer. Jour. of Surg.*

In cases of chronic suppurative disease of the middle ear, with perforation of the drum, when the discharge cannot be arrested by appropriate treatment, there is good reason to suspect tuberculosis as the cause.—*Int. Journal of Surg.*

Occasionally a humorist has the laugh turned on him in unmistakable fashion. Several years

ago Samuel G. Blythe, the writer, dashed off a funny little thing explaining that Representative Joseph W. Babcock, of Wisconsin, had shaved off his voluminous whiskers.

Then Babcock died.

Two months later the magazine to which Blythe had sent his effusion printed it, thereby demonstrating that there are barber shops in another world.

There was a most determined look in her eye, however, as she marched into the optician's shop.

"I want a pair of glasses immediately," she said, "good, strong ones. I won't be without them for another day!"

"Good, strong ones?"

"Yes, please. I was out in the country yesterday, and I made a very painful blunder, which I have no wish to repeat."

"Indeed! Mistook an entire stranger for an old friend, perhaps?"

"No, nothing of the sort. I mistook a bumblebee for a blackberry."—*Western Med. Review.*

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Vermont Medical Monthly.

VOL. XVIII.

SEPTEMBER 15, 1912.

NUMBER 9.

ORIGINAL ARTICLES.

THE OPERATIVE TREATMENT OF RECENT SIMPLE FRACTURES.

BY

JOHN B. WHEELER, M. D.

Mr. President:

When a simple fracture, reduced and treated in the ordinary way, gives an unsatisfactory result it has long been the practice to try to remedy matters by operation. But to employ operation as prophylactic against such results, that is, to operate on a recent fracture in order to avoid the unsatisfactory results which *might* follow the employment of the usual methods of treatment, is a comparatively recent practice. The dissatisfaction always felt with the usual methods when our unaided senses inform us that a fracture has turned out badly, has been much increased, of late years, by the unfeeling way in which the X-ray often shows that our attempts at reduction have not been as successful as we had fondly supposed. This disappointment with non-operative treatment, together with the general confidence in the perfection of modern aseptic technique has led to the favorable consideration of the idea of substituting operative for non-operative measures in the treatment of recent fractures.

Nevertheless, there is great diversity of opinion as to the wisdom of operating in such cases. One bunch of enthusiasts insist that it is the only thing to do. On the other side of the fence, another crowd maintains that the results of non-operative treatment are good, in the great majority of cases, and that therefore it is very seldom that we are justified in subjecting a patient to the risks of operation. Of course any number of intermediate opinions lie between these extremes.

The most distinguished advocate of operations on recent simple fractures is Mr. Arbuthnot Lane of London. He has so little confidence in non-operative treatment that he asserts that only in very rare cases does it produce accurate, or anything approaching accurate, approximation of the displaced fragments. Consequently he

operates on nearly all of his fractures and claims that by so doing he approximates the fragments accurately and thus promotes rapidity of healing, diminishes the danger of non-union and leaves the patient's "skeletal mechanics" as they were before he was hurt. Mr. Lane lays great stress on the importance of exact anatomical approximation of fragments and declares that it is hardly ever followed by delayed union or non-union.

On the other hand, Dr. Stimson of New York, widely known as an authority on fractures and author of one of the best text-books on that subject, maintains that the accurate approximation obtained by operation may be theoretically important, but is practically insignificant and that the main practical value of operation consists in the removal of interposed soft parts or small fragments which may delay or prevent union. While admitting that this is an argument in favor of operation, Dr. Stimson claims that repair is slower, not quicker, after an operation in which the fragments must be temporarily still further displaced and the periosteum be still further injured by the manipulation necessary in drilling and suturing. As regards the matter of non-union, he says that it rarely occurs and when it does, it is due in most cases to general causes and only in a small minority of cases to causes which operation could remove.

Such are the views of two leading experts on the subject of fractures. "and," as Mr. Dooley says, "there ye are."

It is easy to explain this difference of opinion. No class of operations demands such perfection of aseptic technique as those performed on recent fractures. The medulla is a substance peculiarly vulnerable to infection and the danger of infection which occurs when a simple fracture is converted into a compound one, is still further increased by the inclusion in the wound of foreign bodies such as plates, screws, staples and wires, with which the broken fragments are held together. If infection occurs, the operation is a failure. Union is delayed, weak, or attended with deformity, or it may not take place at all, and in any case the condition of the broken bone is likely to be worse than it would have been if no operation had been done. There

is also, of course, the chance that the patient may lose his life from sepsis. Then, beside the problem of a sepsis, the approximation of the ends of the broken bone often takes a great deal of mechanical skill. The rules of a sepsis may be most carefully observed and yet, unless the operator is a good mechanic, he may find that, after he has laid his fracture bare, he is unable to approximate the ends satisfactorily. Now a man whose experience in bone surgery has demonstrated that he is equal to the aseptic and mechanical problems involved in the operative treatment of simple fractures, gets good results from his operations, takes a pardonable pride in his adequacy to such emergencies and naturally feels that the operative method is the one of choice for nearly, if not quite all fractures.

But another surgeon may realize that by care and thoroughness in reduction and in the application of apparatus, he can get results in a great majority of cases which are practically as good as those obtained by successful operations. The X-ray may not show such an absolutely accurate approximation as a successful operation would have produced, but in spite of Mr. Lane's statement, it is well known that absolutely accurate approximation is not necessary to a perfect functional and cosmetic result. We all have seen skiagrams of united fractures in which the ends did not fit evenly, but the functional result was perfect and no deformity could be detected by the eye. Then, if the X-ray can be depended on, an anatomically perfect reduction without operation is not so rare as Mr. Lane would have us believe. In support of this statement I show you these skiagrams of a case now in the hospital, which were taken by Dr. Morrison before and after non-operative reduction under ether. In a case like this, operation would have been absurd.

The true place for the operative treatment of recent simple fractures is with such as cannot be satisfactorily reduced or held in position by non-operative means. In such cases operation is the only way, and if properly conducted, is a very satisfactory way of avoiding deformity, crippling and perhaps non-union. But where non-operative reduction is accomplished without visible deformity, without shortening enough to be detrimental and with proper alignment of the parts, it seems to me that even the expert, to say nothing of the average surgeon, is not justifi-

fied in subjecting his patient to the discomfort, pain and risks of an operation.

Although this view seems to be held by the leading surgeons in this country (such men as Ochsner, Scudder, Richardson, Murphy and others), all of them are doing more operating on recent simple fractures than was formerly done. This is not because every case is operated on, but because cases which resist non-operative attempts at reduction are no longer put up in as good position as possible and "let go at that," but are treated by operation.

But although most kinds of fractures can be successfully treated without operation, there are some kinds in which operation is necessary to a successful result, at least in most cases. Such are fractures of the patella, the olacranon and the posterior portion of the lower jaw. The non-operative treatment of these cases is so often unsatisfactory that operation is really the method of choice with them.

After these fractures, the ones in which non-operative treatment most often fails and operation is required are those of the femur, especially in the upper and lower thirds, and those of the surgical neck of the humerus. By taking proper precautions, that is, by bringing the long fragment into line with the short one, instead of trying to bring the short fragment into line with the long one, these fractures can often be treated satisfactorily. But there are some of them in which the fragments cannot be held together in any other way than by some appliance the use of which necessitates a cutting operation.

The appliances now generally used are either staples or metallic plates fastened with screws. In some cases wire answers the purpose better, but as a general rule wire does not hold as firmly as the other materials and it is more difficult to apply. Of course it is not to be supposed that plates or any other appliances which merely grasp the ends of the fragments will keep them in position without the aid of splints, plaster of Paris bandages, or some external means of support. If plates, staples or wire are properly used, they will prevent displacement of the fragments during the careful application of a plaster bandage and will prevent subsequent displacement by muscular contraction, which no kind of extension or splinting will completely do in such a fracture, say, as an oblique one of the femur.

But they do not get purchase enough on the fragments to hold them together without help from the outside, and if the external appliances do not do their part and completely steady the injured limb, screws, staples or wire will work loose, cease to afford support and by acting as irritating foreign bodies, really defeat the purpose for which they were employed.

The most rigid aseptic technique must prevail in operations of this kind. The operator of course wears rubber gloves, but his constant effort is to get along without putting his fingers into the wound. He handles the fragments, so far as possible, with instruments exclusively for fear that his gloves may be punctured by bone fragments with resulting infection. As soon as the skin opening is made its edges are covered with gauze, held in place during the operation by clamps. Hemostats which compress powerfully are used in order that their pressure may stop hemorrhage and obviate the necessity of putting the fingers into the wound to tie ligatures. All instruments, hemostats, sponge holders, forceps, screw-drivers, etc., are made with long handles so as to keep out of the wound so far as possible not only the hand, but the part of the instrument which the hand has touched. No drainage is used, as in these wounds drainage seems to favor infection rather than to diminish it.

In conclusion, I wish to reiterate that operation is a very valuable way of treating simple fractures which resist the ordinary methods of reduction and retention, but that the risks attendant on it are great enough to render its employment unadvisable in cases which give fair promise of a functionally successful result without operation. The place for operation, a place which it fills admirably, is where the so-called bloodless methods have been given a thorough and conscientious trial and have failed.

A man's ingress into the world is naked and bare,

His progress through the world is trouble and care;

His egress out of the world is, nobody knows where.

If we do well here, we shall do well there;
I can tell you no more if I preach a whole year.

—John Edwin (1749-1790)—*American Medicine*.

HEREDITY, CRIMINALITY AND THE MEDICAL INSPECTION OF SCHOOLS.*

BY

DR. C. F. BALL,

Rutland.

That the President's address for last year read before this society struck a key-note has been well evidenced by the large number of papers subsequently appearing. Each deals with the subject in one way or another, all tending toward a study of the cause for the increase of criminals and for an efficient remedy. Dr. Marshall ably dealt with the subject from a sociological standpoint. The criminal cost to any community is enormous. It is the purpose of this paper to study into some of the factors that appear to predispose man to criminal acts. If investigation makes it evident that a criminal predisposition may be passed on from one generation to another, then the subject of medical inspection of schools is proposed as a possible means of detecting in younger life the person who might be classed as a presumptive criminal.

The subject of heredity has not been given due consideration by the general practitioner. It is evident in his work as a physician that he has not used to advantage the knowledge he has gained along these lines, for no physician is unaware of the fact that certain families, with undesirable parentage on both sides, are forming unions and producing offspring that to his better judgment should never have been. Facts are now staring us in the face showing that the mental defective, degenerate and epileptic are increasing in a greater proportion than the normal individual. This result is undetected by the majority, but careful observation shows that not many years hence the present normal individual may be as rare as the degenerate of a few decades past.

When honest investigation reveals this alarming increase of defectives it certainly becomes essential that just as honest an effort be made to determine those factors that tend to produce this undesirable finding. It is a blot upon the standard and morals of any nation to find this increase, as it bespeaks decadence, intemperance in sexual matters, use of alcohol, drugs, and habits, such as our great haste in eating and

*President's Annual Address read before the Annual Meeting of the County Medical Society.

drinking, the deleterious effects of our strenuous life, etc.

If it is evident that these excesses are detrimental factors in the proper development of an individual, it is then apparent that no organism can produce the germ cell with the highest degree of vitality when it is itself fighting against great odds for the existence of its own (somatic) or body cells.

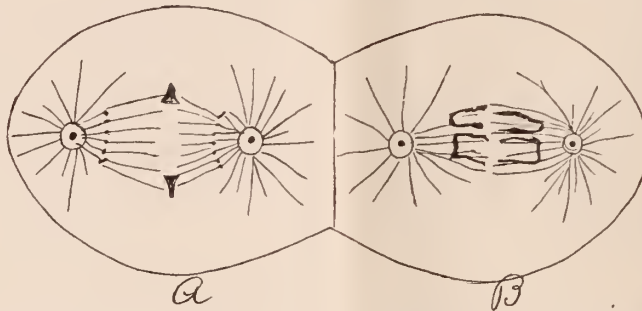
When heredity is spoken of in a loose way as the apparent transmission of certain tendencies, deformities or diseases from parent to offspring it may appear as a problem of ready solution. However when we begin a closer study to determine which of these characteristics (that we

These act directly upon the somatic cells, through them indirectly upon the germ plasma.

In the lower forms of unicellular individuals it is noticeable that the fusion of the male with the female cell occurs with each being apparently equal as to size, form and quantity of cell elements.

In the higher order of individuals of multicellular forms, there becomes a distinct differentiation between the two elements, the male element becoming much smaller, reducing itself so that it consists practically of little more than nucleus, centrosome, and an actively motile tail or flagellum, making it the aggressive element. The female cell or ovum is much larger, and is

Segmenting Egg.
(*Oecaris Megalocéphala*)



Destined to give rise to body cells, shows diminution and casting out of some of its chromatin.

The germinal blastomere, shows no such reduction.

(After Bonni)

are inclined to refer to as being inherited) are transmitted by the progenitors, or are acquired as prenatal or postnatal conditions, it is then that the subject begins to assume one of complexity. There are sufficient salient facts established by experimental study in heredity that warrant acceptance and practical application.

It is against our scientific sense to reason that in any way are specific organisms transmitted by the germ cell of the parent to its offspring.

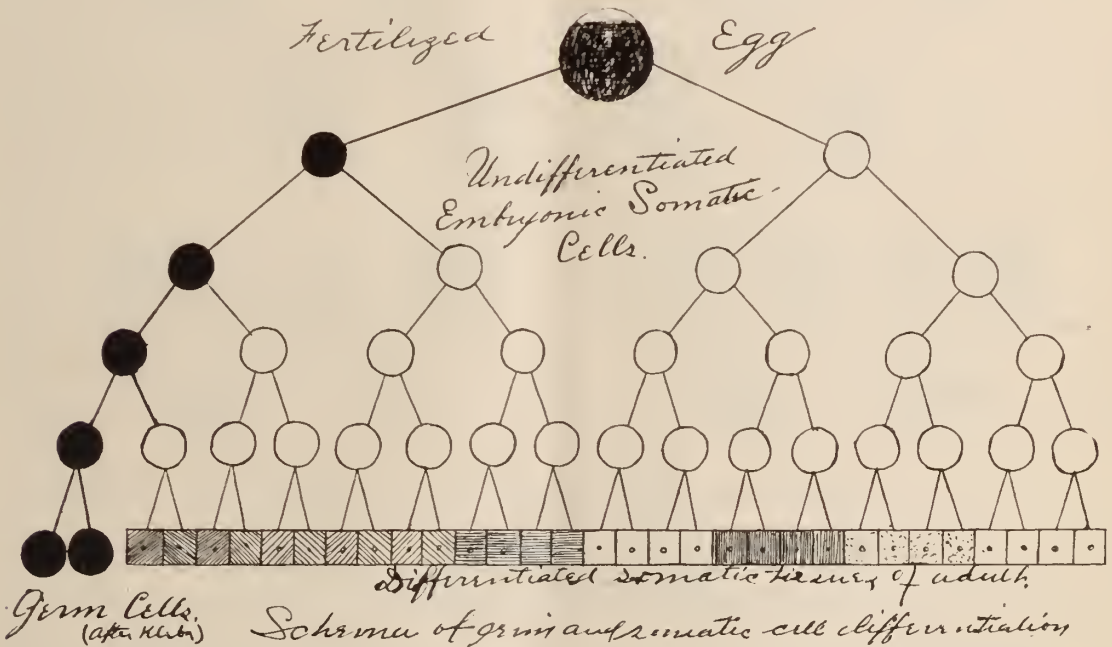
The germ cell may be influenced by septic processes, intemperance in the use of alcoholic beverages, sexual excesses, over indulgence in eating and drinking, the strenuous life, etc.

considered the passive element. The germ cell destined to give rise to either the ova or spermatozoa is marked off from the body cells (somatic cells) at a very early period of the development of the new individual. Adam¹ quotes Professor Wilson as making the following distinction between the germ and somatic cells in "that the former retains the sum total of egg chromatin elements handed down to them from the parent, whereas, by one or another process the somatic cells (the body cells) retain only a portion of the same." Thus it is evident that there is a distinct difference between these two classes of cells. The somatic cells of man

become involved in the duty of building up a retaining receptacle supplying protection and nutrition for the germ cell with the added function of conjugation for the purpose of procreation.

Then what concerns us in this study are the conditions or circumstances which may possibly affect the somatic cells in such a way as to interfere with their making a suitable receptacle for the protection and transmission of the more important element, the germ plasm. To repeat: the somatic cells undergo an extended process of reduction, giving rise to the various tissues of the body while the germ cell does not undergo any form

the male and the female element contribute through the mature ovum and spermatozoon, just one-half the number of cells characteristic of the somatic cells of the particular species. It has been shown that the number of chromosomes have some determining influence as to the species, a certain number of chromosomes being constant in any given species. There is no explanation given for this determining factor. Through a special process too elaborate to attempt to explain in detail here the chromosomes of either ovum or spermatozoon receive an equal number, from the male parent one-half and from the female parent one-half, thus insuring an equal opportunity for both parents to influence



of reduction, being a part of the parent which divides itself in such a way as to transmit an integral part of itself and of its parents to its offspring.

Adami² says, "This is essentially the process that occurs. We are agreed that there is the closest possible relation between the nuclear biophores and chromatin, and that a permanent reduction in the amount of the latter is the expression of a reduction in the amount of the former." The accompanying chart "expresses graphically this relationship in descent of the germ cells to the rest of the organism." Recent investigations appear to demonstrate the fact that in the production of the fertilized egg,

the offspring. That the chromosomes of each parent are not of equal value is evident.

It is this peculiarity in the fusion of chromosomes of unequal value that makes the study of heredity intensely interesting. When we consider that a recessive element may become dominant in a future union we are able to explain how that an individual may skip certain peculiarities characteristic of its parents, and take those of its grandparents, or how that certain dominant features in the parent may not show up for several generations and that certain characteristics may disappear entirely. When considering this in the light of a peculiarity exhibited by certain individuals, we speak of that

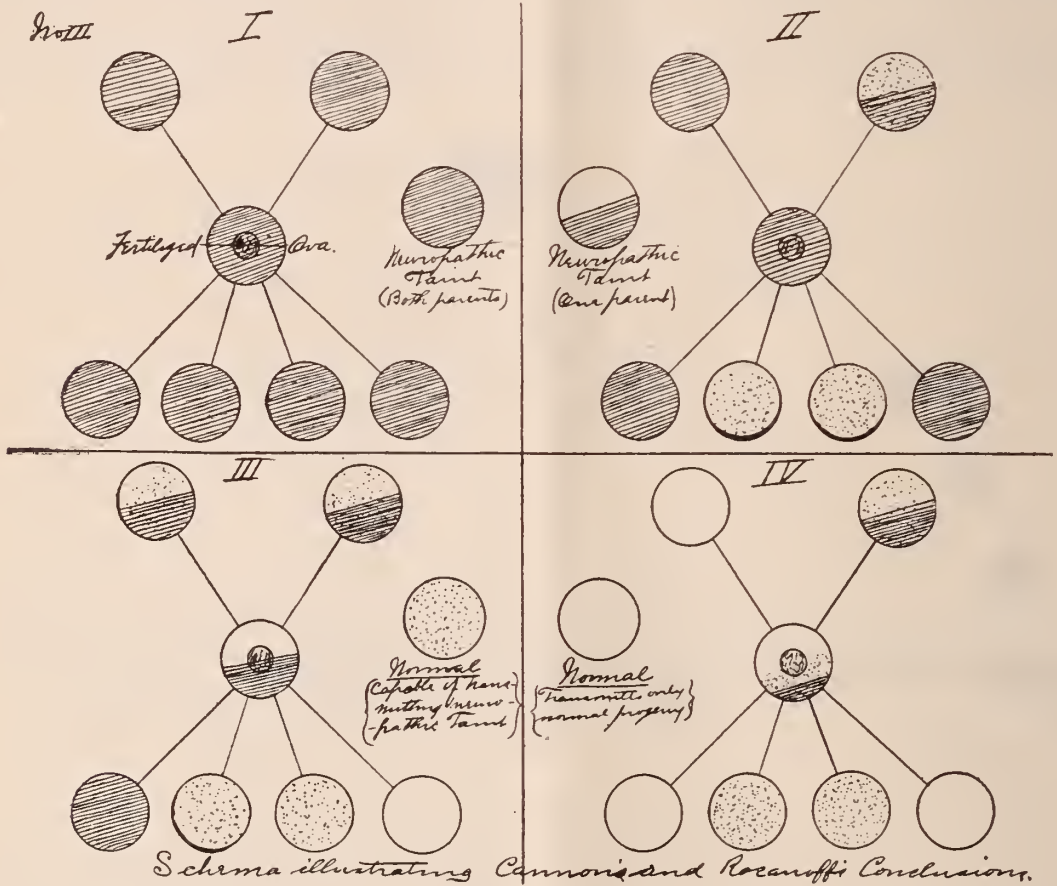
individual as "harking back" to characteristics that have been recessive in his recent progenitors, but dominant at some time in one or the other great grandparent.

The extent to which this nuclear division takes place in the germ cell is variously stated by different authors but all arrive at practically the same conclusion as to the approximate amount of chromatin passed on by the nucleus of either the ovum or spermatozoon of the parent, grandparent or great grandparent.

be represented in chromosomes only to the extent of having contributed but one-half of their respective number to either of the grandparents just considered.

This same reasoning goes back from generation to generation always revealing the fact of a possible biophore, characteristic of a forefather, coming down through various generations to subsequently reappear.

"Heredit^y," says Ribot, "is that biological law by which all beings tend to repeat them-



If the ovum of spermatozoon each passes on but one-half of the chromosomes making up the new individual it is evident that either one or the other can transmit to this new individual but one-half of the number of chromosomes passed on to it by either of its parents, that is, one-quarter of the chromosomes of the grandparent are passed on to the grandchild, the other half having been cast off by the process of oogenesis and of spermatogenesis respectively. By this same process the great grandparents would

selves in their descendants; it is for the species what personal identity is for the individual. By it a groundwork remains unchanged amid incessant variations; by its nature ever copies and imitates herself."

Adami⁴ says: "The power of reproducing the individual has become restricted to a group of cells (the germ cells), which, so long as they remain integral portions of the parent organism, present a minimum of differentiation. In these, presumably, the biophores undergo minimal

modification. They are characterized histologically by showing no primary reduction in their chromatin in the process of successive division."

In all multicellular organisms (and in unicellular, save the lowest forms) the species is continued and the specific living matter propagated, if not in every successive generation, at least ultimately, by conjugation and fertilization. Sex has been developed and fertilization is the process of fusion of the male (invasive) with the female (receptive) germ cell. The process is essentially one of combination of equal amounts (or numbers) of biophores from the two parental germ cells to constitute the nucleus of the new individual.

This new individual is not alone a product of the fusion of equal numbers of biophores from the two parental germ cells, but it has other determining factors influencing its individuality.

Two prominent elements tend strongly to alter the make-up of the new individual. The parent germ cell may have been modified by environmental influences, which tend to alter the constitution of its biophores within certain limits. This is referred to as variation or adaption.

Pertinent to these findings I quote from the Report of the Commission of the State of Massachusetts to Investigate the Question of the Increase of Criminals, Mental Defectives, Epileptics and Degenerates.⁵

"We have also been impressed anew with the fact that in considering criminals, the insane, mental defectives and paupers, we were largely studying different phases or expressions of the same fundamental defect. These people often represent individuals or families who for some reason were unable to hold their own. In many families it is found that the form of defect has varied from generation to generation, alcoholics in one generation, paupers or criminals in the next, possibly insanity or mental defect in the next, etc.

"Crime, insanity, mental defect, epilepsy, pauperism and drunkenness, the conditions of degeneracy which this commission is considering are largely perpetuated by the transmission of defect and disease from degenerate or diseased parents."

Good or bad environment then may influence in a definite way the development of the somatic cells within certain limits. If influences may possibly alter, through the body cells, the germ

cell, it then becomes the duty of those appreciating this possibility to make efforts to change the environmental influences in one way or the other that the future generations may be better equalized.

Mott⁶ summarizes his excellent paper as follows:

"1. Hereditary predisposition is the most important factor in the production of insanity, imbecility and epilepsy. It is the tendency to nervous and mental disease, generally speaking, which is inherited. This may be termed the neuropathic taint.

2. Education, sanitation and the rest, as Bateson has stated, are only the giving or withholding of opportunity for good or ill.

3. Alcohol is a powerful coefficient, but not of itself the main cause in the production of insanity, except in the rather infrequent cases of alcoholic dementia.

4. Certain types of insanity may be transmitted with greater frequency than others. This has been termed similar heredity. The types are: Periodic insanity (also termed "manic-depressive"), delusional insanity and epilepsy. The general rule, however, is for a different type to appear.

5. Mothers transmit insanity and epilepsy with much greater frequency than do fathers, and the transmission is especially to the daughters.

6. Anticipation or antedating is the rule whereby the offspring suffers at a much earlier age than the parent; more than one-half of the insane offspring of insane parents are congenital idiots or imbeciles, or have their first attack in the period of adolescence.

This adolescent insanity may take an incurable form of dementia in a large number of cases; in others it is usually mania, melancholia, or periodic insanity, and not infrequently epilepsy with or without imbecility. Very rarely does the parent become insane before the offspring. This is a strong argument of hereditary transmission, possibly hereditary transmission of an acquired character.

7. Regression to the normal average may be (1) by marriage into sound stocks, or (2) by anticipation or antedating leading to congenital or adolescent mental disease terminating the perpetuation of the unsound elements of the stock.

8. High-grade imbeciles who are not at present in any way checked in procreating owing to social conditions interfering with survival of the fittest, together with chronic drunkards, neurasthenics and neuropaths, are continually reinforcing and providing fresh tainted stocks.

9. Recurrent insanity owing to the fact that patients are not segregated for any length of time, is probably the most potent cause of insane inheritance. Facts tend to support the opinion that the recurrent types of insanity during lucid intervals may breed a stock of potential lunatics and paupers.

10. Nature is always striving to go back to the normal average and only relatively few of a stock are insane. A stock with a streak of insanity when combined with genius is not bad, and the same may be applied to a nation; but we only want a streak of genius and insanity, the great body of the nation should be of good normal average for Mott believes that nation will possess the greatest potential virility in the struggle for existence that can breed from the greatest number of men and women with good bodily health, who possess a large measure of the three attributes of civic worth, viz., courage, honesty and common sense, combined with parentage, pride of family and pride of race."

Man has allowed himself to reproduce with less thought as to the value of his offspring, than he gives to the rearing of either his horses or cattle. He has allowed himself to reproduce his kind apparently with only one thought in mind, that of self gratification.

The second determining influence is spoken of as amphimixis, defusion and intermixing of germ plasms of entirely different individuals. In amphimixis there is a possible help, if it could be properly used in correcting many of the marks of degeneracy that have developed as the result of man's looseness in his matings. History is replete with records of families where inferiors marry, their offspring being epileptics, idiots, degenerates and criminals. It is however possible for the inferior individual to materially improve his progeny by selecting a mate of sound stock.

The following conclusions drawn by Cannon and Rosanoff substantiate this assertion.⁷

"The material on which the authors made their observations consists of the pedigrees of eleven patients and includes thirty-five different matings, a total of 221 offspring. They found

that both parents being neuropathic, all children will be neuropathic. One parent being normal, but with the neuropathic taint from one parent, and the other parent being neuropathic, half the children will be neuropathic and half will be normal, but capable of transmitting the neuropathic make-up to their progeny. Both parents being normal each with the neuropathic taint from one parent, one-fourth of the children will be normal and not capable of transmitting the neuropathic make-up to their progeny, one-half will be normal but capable of transmitting the neuropathic make-up, and the remaining one-fourth will be neuropathic.

Both parents being normal, one of pure ancestry and the other with the neuropathic taint from one parent, all the children will be normal, half of them will be capable and half incapable of transmitting the neuropathic make-up to their progeny. Both parents being normal and of pure normal ancestry, all children will be normal and not capable of transmitting the neuropathic make-up to the progeny."

From the above it becomes very evident how readily man may influence his posterity for good or ill.

"Ribbert⁸ argues that inheritable pathologic changes in the body must have appeared first in the germ cell, not in the developed organism, insisting that there can be no inheritance of acquired properties."

"He who inherits a predisposition to insanity," says Maudsley,⁹ "does not necessarily get it from a parent who happens to be insane; no not even though his father was insane, when he was begotten, or though in madness his mother conceived him. He gets it from where his parent got it—from the insane strain in the family stock."

Centuries having elapsed in ignorance as to the terrible results of unwise matings, it is evident that it will take centuries to return to a normal stock. Such an ideal condition is impossible, but we should correct our present ways that future conditions may not get even worse.

No one contends that heredity passes on a definite form of criminality, that is, a child is not necessarily a burglar because his parents have been given to that habit, or one is not necessarily a murderer because he originates from a strain of murderers. The bad heredity passes on to the offspring an inability to inhibit

actions that his better judgment would teach him to be wrong, but because of his heredity he is not able to resist the influences of bad environment. When he gets out with the "boys" he is not able to check himself from going any length, provided he is associated with others of more mature experience to lead him on.

This lack of inhibition or check operates in the same way in one's inability to refuse the drink offered by a friend, a tip for illegitimate purposes, etc. It is also this deficiency that allows a girl to go too far in her relations with her associates and friends. She is unable after certain influences have been brought about her to protect herself by her inhibiting power.

It is wilfulness on the part of but few to be criminals. It is the fact that they become associated with those of experience and are thrilled by the excitement of the occasion and only awake to their senses when they find that they have been unable to extricate themselves from their situation. Normally this power of inhibition should be asserted in the way of not allowing one's self to become entangled in this kind of association.

There are types of degenerates that are lower in the scale than those just referred to, whose thought and action (from their hereditary influence and environment) can be only upon the mean and vulgar. They are not able to think connectedly, to reason or to associate fact and circumstance. They act by impulse, being governed by those things only that please and excite. It is this class that are especially dangerous to society for their tendency to sexual excesses is proverbial. The number of their legitimate and illegitimate children is large and their offspring are usually of a lower grade of degenerates than themselves.

I apprehend that the speaker to address us this afternoon will be able to give us the results in this state of just such unions as are here pictured.

It appears to the writer of this paper that in the medical inspection of schools we have a possible means of relief. I do not mean to contend that it is the full solution of the problem, but I feel that it will be a long step in the right direction when this state can have compulsory medical inspection of schools and the law is so framed that there will be a definite system of inspection, and of making reports. When

this work is done systematically throughout the state, every child will have a record made of the medical inspector's findings, together with a history of family conditions. Then it is, that the state will have data of inestimable value. This data will include a history of the child's mental state from the day he enters school until he passes out. Such data will be of great value in future studies upon the influences of heredity and environment with relation to disease, degeneracy and crime. It will be of value, in a financial way, to the state in pointing out the child whose inhibitive powers are reduced and environment bad, as being a possible future danger to the community. It will be of value in determining proper individuals for asexing when such a law shall have been enacted. Time will demonstrate that instead of harboring thousands of criminals within its institutions the state will spend money protecting its youth in order to save the expense of their criminal acts and maintenance. The state will asex certain inferiors instead of caring for them and their progeny.

From our study of heredity this afternoon it seems to be apparent that we can look forward to the child that will "hark back" knowing its heredity. That it will be a better policy for the state to look forward to these possible conditions rather than come up to the time when they appear and simply content itself with the fact that the individual has "harked back." He will hark back to some degenerate strain in his ancestry that we know of today and should prevent. Preventive methods are infinitely in advance of curative efforts in political economics as well as in medicine. Today the greater duty of the physician is to prevent the possibility of disease; so it should be the duty of the state with crime.

- (1) Principles of Pathology, Adami; Vol. 1, p. 146.
- (2) Principles of Pathology, Adami; Vol. 1, p. 147.
- (3) *Jour. Amer. Med. Assn.*, p. 1562, Nov. 4, 1911.
- (4) Principles of Pathology, Adami; Vol. 1, p. 158.
- (5) Report of the Commission to investigate the question of the increase of Criminal, Mental Defectives, Epileptics, and Degenerates. (Mass.) Jan., 1911.
- (6) *Jour. Amer. Med. Assn.* (11) 1763, June 10, 1911.
- (7) *Jour. Amer. Med. Assn.* (42) 1683, June 3, 1911.
- (8) *Jour. Amer. Med. Assn.* (84) 173, July 8, 1912.
- (9) *Jour. Amer. Med. Assn.* p. 1381, Nov. 17, 1911.

**FURTHER CONTRIBUTIONS TO A METHOD
(GLUZINSKI'S) FOR DETERMINING
THE CHARACTER OF A PYLORIC
STENOSIS WITH ESPECIAL
REFERENCE TO THE
TRANSITION OF THE
ROUND ULCER
INTO CANCER.**

BY

PROF. ANTON GLUZINSKI

Abstract translation from the *Wiener Klinische Wochenschrift* for the Department of Pathology, College of Medicine, University of Vermont, by Barnet Joseph, M. D., assistant to the Chairs of Pathology and Anatomy.

The method in question was first described in detail by the author in the *Gazeta Lekarska* (1901 Warsaw, Russia) and in Vol. X of the *Mitteilungen Aus den Grenzgebieten der Medizin und Chirurgie*.

Its object was the early recognition of the character of a pyloric stenosis, i. e.: Whether it is caused by a round ulcer or cancer and eventually whether one is dealing with just a simple ulcer, or an ulcer becoming malignant.

Principal conclusions detailed in former works:

(1) Ninety per cent of gastric ulcers are situated in the pyloric region.

(2) An ulcer in the pyloric (not the cardiac or fundus) region which produces stenosis is almost invariably accompanied by an abundant hypersecretion—the result of acid catarrh.

(3) Statistics obtained by autopsy show that 86% of gastric ulcers present evidence of carcinomatous metaplasia; clinically, however, this can be demonstrated more frequently. The importance of early diagnosis is therefore self-evident.

(4) In pyloric obstruction the result of a simple ulcer, the removal (resection or gastroenterostomy) does not relieve the hypersecretion which may instead continue for quite a while (months, and at times, years).

(5) A pyloric ulcer which produces stenosis and is beginning to undergo cancerous change, may be recognized by a decrease in the aforesaid hypersecretion, (harbinger of the future catarrhal state of the mucous membrane) as well as by a certain diminution in the secretion of gastric juice—secretory insufficiency.

(6) To demonstrate this decrease of hypersecretion (in cases of established stenosis), the gastric function is tested three times within the course of one day. Examination is made of the

contents of the early morning stomach, that after a test breakfast and finally a test dinner.

“My observations have proven,” says the author, “that, if in pyloric stenosis a hypersecretion be found constantly after the three tests, we are perfectly justified in pronouncing the same a simple ulcer. Should there be found however a diminution, or total absence of free hydrochloric acid following any of these tests, we have cause to believe that in such a case, carcinoma has made its appearance. This rule holds good even if tests made at other isolated times, have shown a sufficient hydrochloric acid content. If necessary this examination should be repeated for a few days. The following is the method of procedure:

Patient comes to the laboratory at about 8 o'clock in the morning, the empty stomach is aspirated and then washed with water. The test breakfast is then given, and this aspirated about one hour afterwards. The patient is now instructed to go about his work, but at 12 o'clock to take the test dinner, and at four o'clock present himself again at the laboratory, when the last aspiration is performed. Should all tests show a constant hypersecretion, the patient is given appropriate treatment, and instructed to return in from two to three weeks for control examination to determine whether the hypersecretion is still existent. Experience has shown, that in *ulcus pylorix*, hypersecretion persists in spite of improvement in the mechanical function and, that variations in the gastric secretions even though accompanied by well being, is characteristic of malignant change. It is to be remarked however, that in the beginning stages of secretory insufficiency, a constant hypersecretion is usually found after a test of one day, and it becomes an index of cancerous change, only then, when it is found after two or three tests, and when the stagnant residual food has been removed by appropriate means.

It is to be noted, that gastric activity is influenced by stagnation of food to the extent that stagnant material stimulates (though gradually paralyzes) the function of the mucous membrane. That is why, for example, phenomena of *achylia gastrica* are known to follow the operative removal of a pyloric obstruction, though previous to such removal, there was hypersecretion.

In benign stenoses, hypersecretion continues even after operative removal, and the same is

found to be true although to a lesser extent, when a benign stenosis is treated dietetically or by gastric lavage.

In order to probe the value of Gluzinski's procedure, Sigel, acting under the direction of Ewald, conducted a series of tests on 18 cases of suspected carcinoma of the stomach. Perfect controls were assured to this investigator by reason of exact determinations made of the total acidity, free HCl and combined HCl (Sigel, zur Diagnose des Magenkarzinoms, *Berl. Klin. Wochenschr.*, 1904, Nos. 12 and 13). Gluzinski himself determines only total acidity and employs Gunsburg's reaction for the free HCl (the results obtained by this reaction are marked *weak, distinct*, or very marked—a sufficient index in the hands of a trained observer).

Sigel divided his cases into two classes: First, those with chronic ulcer in the pyloric region, suspected of undergoing carcinomatous change, and, secondly, cases which upon examination showed (in the *Gluzinski sense*) a *secretory insufficiency*, consequently the presence of a carcinomatous ulcer.

Of the first series, eight patients were examined, in two of them, a tumor was palpable in the pyloric region. Tested by the author's method, these all proved to be benign conditions as evidenced by the fact that during many months of continued examination, none of them showed effects of malignancy. Only five patients were tested in the second series, in four of these subsequent operation corroborated the diagnosis of malignancy.

The fifth case was doubtful, although a tumor was found during operation, inasmuch as the patient's condition made extirpation impossible, gastro-enterostomy was performed, but the tissue removed showed no evidence of cancer. After five months, the patient felt well, had gained 18 kilo, and examination of the stomach contents showed high acidity, and free HCl acid.

In commenting upon this latter case, Sigel questions the absolute validity of the Gluzinski test, but as the author remarks, carcinoma may very safely be excluded here, for one thing the tumor as developed during the operation, was not situated in the gastric mucosa but was around the pylorus and duodenum. Also, as the author has emphasized time and again, an isolated test is no criterion, for hypersecretion may be found at the first test, even in the presence of cancer. In his cases that were operated, the

author has without exception, been able to substantiate his diagnosis.

Two cases which like the one of Sigel's, seemed to antagonize Gluzinski's theory, are cited to show that more than a one day test is necessary to establish a diagnosis.

S. K., 45 years of age, had been ailing for three years. The trouble began with moderate pain in the region of the stomach, which came seldom at first, but later on increased in severity. For 2½ years heartburn, salivation; for two years vomiting; for ten months gradual failing, daily acid vomiting accompanied by great pain, at one time—two months—a constant showing of blood in the vomitus.

Physical examination: Patient poorly nourished, internal organs, normal. Lower boundary of the stomach beneath the umbilicus; poor motility from left to right; marked tenderness in the pyloric region. No tumor palpable.

Examination of gastric contents: Early morning stomach—reaction acid; contents 160 ccm. of turbid yellow fluid. Microscopic examination showed meat fibers, starch granules, sarcinae and yeast fungi. Total acidity 28. Free HCl 10.

Four hours after the test breakfast—total acidity 20. Free HCl 10. Two hours after the test dinner—food remains present; total acidity 44. Free HCl 16.

Reasoning along the lines of my conclusions this was manifestly a case of benign stenosis. From previous experience however, and in the view of the relatively low, free acid content I decided to withhold my verdict until another examination was made. Meanwhile gastric lavage was performed (for manifest reasons) daily. After two weeks of this treatment, and dietary regulations, the distressing symptoms were markedly improved, though the body weight remained unchanged. Examination of the stomach contents gave the following results: Early morning stomach—contents 75 cm. of light turbid fluid. The microscope showed fat and starch granules. Total acidity 10. Free HCl 0.

After test dinner—total acidity 97. Free HCl 0. In spite of subjective improvement therefore, this patient presented a classical picture of secretory insufficiency, necessitating change of diagnosis to read *malignant stenosis*. Operation was advised. Four weeks after the first consultation, a resection of the pylorus was performed. A tumor the size of a hen's egg was

found surrounding the pylorus, which microscopically proved to be a scirrhus carcinoma. A year later metastasis occurred in the mesenteric glands.

In reporting the next case I want to call attention to the fact how some cases—fortunately but very few—may throw doubt on a diagnosis, without however assailing the fundamental principles set up by me.

J. S. 34 years of age, mason, has suffered for about $\frac{1}{2}$ year with gastric distress, pressure, eructations and pain after eating, nausea and vomiting; blood never found in the vomitus; suffered from constipation, but the feces were never black in color.

Patient emaciated; marked symptoms of pyloric stenosis; peristaltic movements from left to right; inflation of the stomach is attended with pain; lower curvature three fingers breadth above the symphysis; upper, at the level of the umbilicus. Tumor not palpable. Examination of the stomach contents showed in all three tests besides an abundant chyme residue a high total acidity and a distinct reaction for free HCl.

Inasmuch as the patient would not consent to operation, he was treated for a month with large doses of bismuth carb. The phenomena of stenosis persisted, and material aspirated from the stomach showed no change.

During the period of observation the benzidine test in the stools often present in spite of milk diet.

Our diagnosis on this case was *stenosis pylorix benigna propter ulcus ventriculi ad partem pyloricam*. By the time the patient left the clinic he had further lost 2 kilo in weight. After two months, he returned however with a further loss of 7 kilo and complaining of continuous gastric distress.

Examination of the gastric contents showed again, stagnant food remains, a high total acidity, and the reaction of free HCl somewhat more distinct than the one of two months previously. The usual three tests were carried out.

We held to our original diagnosis in spite of

the fact that upon inflation of the stomach a distinct tumor could be made out in the pyloric region. The patient was now willing to undergo operation. The conditions found upon paracentesis were as follows: Stomach markedly dilated; a hard movable tumor which the surgeons recognized as cancer. The condition of the patient at this time made it impossible to undertake radical procedures; gastro-enterostomy was however performed. The findings in this case seemed to cast doubt upon my argumentation although previous to operation there was constant presence of a high total acidity, and free HCl. The patient bore the operation well. The gastric distress attendant upon stenosis disappeared; he took on weight and upon leaving the clinic was instructed to return immediately in order that the more radical operation could be carried out. He first came back after two months and presented a picture of extreme emaciation, and neoplastic cachexia. Further examination showed unquestionable evidence of *peritonitis carcinomatus* of which there was not a trace during the operation. Verily these findings seemed to substantiate the diagnosis of cancer the first time, and be at complete variance with my assumptions.

The patient soon died and autopsy proved my contention of a benignant stenosis showing that the three test method is not misleading. These were the autopsy findings: *Ulcus ventricula chronica ad pylorum usque ad pancreatum tendens. Carcinoma pancreatius primarium, metastasis glandulae meseraic, omenti et hepatis, peritonitis serofibrinosa hemorrhagica carcinomatus*. Our patient therefore had two processes: One steinotic ulcer in the pylorus, producing the peculiar state of the stomach, and the other, pancreatic cancer, which brought about the second course of events.

This strange coincidence by no means minimizes my line of reasoning. From quite a series of cases I shall abstract the following inasmuch as I have been able to follow these more accurately.

Case No. and year.	Sex and age	HISTORY.	STATE OF THE STOMACH.	EXAMINATION OF GASTRIC CONTENTS.	DIAGNOSIS.	OPERATION.	REMARKS.
I 1910	F. 50	For ½ year oppression after eating, acid eructations, heartburn, no vomiting except that which patient herself induces (putting finger on epiglotus) to give herself relief.	Bulging of the umbilicus upon inflation of the stomach. Lower boundary 4 fingers' breadth beneath the umbilicus. A longitudinally situated hardening in the pyloric region.	Oct. 12th. Early morning stomach—(480 ccm) total acidity 58, HCl 22. After test breakfast—tot. acid. 36, HCl 0. After test dinner—tot. acid. 50, HCl. 34. Oct. 21st. Early morning stomach (50ccm.) tot. acid. 20, HCl. 0. After test breakfast—tot. acid. 22, HCl 0. After test dinner—tot. acid. 61, HCl. 50.	Cancerous stenosis of pylorus.	Pyloric resection.	A longitudinal hard tumor. Microscopic exam. colloid cancer.
II 1902	M. 45	Since one year pain of varying intensity localized in the gastric region and radiating to the back. At first spontaneous vomiting but lately self induced, for the relief obtained. Blood never seen by patient, either in vomitus or stool.	After inflation, lower border at the level of umbilicus. Left side (fundus) readily inflated. No peristalsis visible. Tenderness and diffuse resistance at the pit of the stomach.	Early morning (50 c. cm.)—tot. acid. 22, HCl traces. After the test breakfast—tot. acid. 12, HCl. 0. After the test dinner—tot. acid. 76, HCl. marked traces.	Ulcer turning malignant.	Gastro-enteros.	A tumor (hard cancer) in the pyloric region, not completely removable on account of invasion and involvement of surrounding structures.
III 1902	M. 40	Affection began 3 months ago with pain in the pyloric region, after ingestion of food; acid eructations, vomiting every other day. Patient never observed blood in the vomitus.	Upon inflation, upper border of the stomach at the level of the umbilicus, the lower, five fingers' breadth beneath. A diagonal, hard, tumor like resistance palpable in the median line.	Aug. 14. Early morning (1000 c. c.)—tot. acid. 22, HCl. traces. After test breakfast—tot. acid. 21 HCl traces. After test dinner—tot. acid. 40, HCl. 0.	Stenosis pylori carcinomatous.	Gastro-enteros.	A hard tumor in the pyloric region infiltrating the surrounding structures. Very much enlarged glands in the large omentum, near the greater curvature.

Case No. and Year.	Sex and age.	HISTORY.	STATE OF THE STOMACH.	EXAMINATION OF GASTRIC CONTENTS.	DIAGNOSIS.	OPERATION.	REMARKS.
IV 1903	M. 32	Some years ago icterus. Present illness began 3 months ago with pain in the gastric region, nausea and gaseous eructations. This was followed by acid vomiting. For the last two weeks vomitus stained brownish. Stool also dark. Patient lost considerable weight and strength.	Abdomen flat; gastric region sensitive to pressure, especially at the pit. A small superficial tumor beneath the xyphoid cartilage (hepato-epigastrica); no rigidity of the stomach wall and a tumor was not palpable.	Nov. 6th. Early morning (50 ccm.) — tot. acid. 5. HCl. 0. After test breakfast—total acidity 5. HCl. 0. After test dinner—tot. acid. 22. HCl. 0.	Carcinoma ventriculi post ulcus rotund.	Gastro-enteros. after Hacker.	Stomach pulled towards the right side by adhesions and adherent to the liver. A tumor on the posterior wall of the pylorus encroaching on the lumen of the same. Resection impractical. Walnut sized glands in the large omentum, some of which were found to be cancerous.
V 1903	M. 48	For 1½ years constipation and acid eructations; for one year pain in gastric region and emesis after eating.	Abdomen flat, peristalsis present. Lower border 3 fingers' breadth beneath the navel. No tumor palpable.	March 2nd. Early morning (70 ccm.) tot. acid. 20. HCl. traces. After test breakfast—tot. acid. 8. HCl. traces. After test dinner—tot. acid. 45. HCl. present in traces. March 10th. Early morning (120 ccm.) — tot. acid. 28. HCl. 7. After test breakfast—tot. acid. 30. HCl. traces. After test dinner—tot. acid. 54. HCl. 0. Least possible trace of lactic acid.	Stenosis pylori carcinom.	Gastro-enteros.	Neoplastic formation in the pyloric region with infiltration of the mesenteric glands.
VI 1904	M. 48	Dyspepsia for a year and a half. Pain after eating. For one year vomiting after eating. Blood never observed in the vomitus or stool.	Lower border of stomach beneath the umbilicus; walls distended, peristalsis present; tumor not palpable.	Early morning — tot. acid. 32. HCl. 8. After test breakfast—tot. acid. 6. HCl. 0. After test meal—tot. acid. 48. HCl. 6.	Ulcus ventriculi in carcinoma ventens.	Gastro-enteros.	A tumor the size of a hen's egg in the pylorus region. Mesenteric glands infiltrated.

<p>VII 1906</p>	<p>53 Ill for a year. Sex not given</p>	<p>Abdomen retracted, nothing abnormal to be found on palpation. Upon inflation, lower border of stomach found on a level with the umbilicus. Deep palpation—an orange sized tumor left to the median line, which disappeared when the inflated air was relieved.</p>	<p>Early morning stomach (300 c. cu.)—tot. acid, 38. HCl, 0. After test breakfast—lo. acid, 0.</p>	<p>Carcinoma ventriculi.</p>	<p>Tumor proved to be cancer.</p>
<p>VIII 1908</p>	<p>49 Stomach trouble for the past 15 years. At times pain and vomiting after partaking of food. Aggravation of symptoms in last 6 months. Blood never noticed in vomitus</p>	<p>Lower border of the stomach beneath umbilicus. Occasional peristalsis. No tenderness or tumor.</p>	<p>Early morning—tot. acid, 27. HCl, 41. After test breakfast—tot. acid, 6. HCl, 0. After test dinner—tot. acid, 26. HCl, 11.</p>	<p>Stenosis pylori carcinom.</p>	<p>Tumor present—scirrhous cancer.</p>
<p>IX 1909</p>	<p>44 For three years pain after eating and eructations. Occasional vomiting.</p>	<p>Lower border of the stomach three fingers' breadth beneath the umbilicus; organ tense. Tumor not palpable.</p>	<p>Early morning—tot. acid, 6. HCl, 0. After test breakfast—tot. acid, 46. HCl, 26.</p>	<p>Ulcus ventriculi in carcinoma ventens.</p>	<p>On the posterior surface of the lesser curvature a flat tumor the size of a hen's egg, diagnosed microscopically as cancer.</p>
<p>X 1901</p>	<p>M. 43 For ten years, occasional pain in region of the stomach after meal time, relieved by the ingestion of sod. bicarb. For quite a time no distress. For two months, symptoms increased in severity. No blood observed either in the vomitus or stool. Patient very emaciated.</p>	<p>Region of stomach tender to pressure. Tumor not evident. Upon inflation—lower border four fingers' breadth beneath the umbilicus.</p>	<p>Dec. 13th. Early morning (180 ccm.)—tot. acid, 20. HCl, traces. After test breakfast—tot. acid, 32. HCl, marked traces. After test dinner—tot. acid, 60. HCl marked traces. Dec. 17th. Early morning (60 ccm.)—tot. acid, 8. HCl, 0. After test breakfast—tot. acid, 18. HCl, traces. After test dinner—tot. acid, 70. HCl, marked traces. Dec. 30th. Early morning (70 ccm.)—tot. acid, 6. HCl, 0. After test breakfast—tot. acid, 7. HCl, 0. After test dinner—tot. acid, 58. HCl, traces.</p>	<p>Ulcus ventriculi in carcinoma ventens subseqn. stenosis pylori.</p>	<p>Patient would not consent to operation.</p>

Case No. and year.	Sex and age.	HISTORY.	STATE OF THE STOMACH.	EXAMINATION OF GASTRIC CONTENTS.	DIAGNOSIS.	OPERATION.	REMARKS.
XI 1901	M. 50	Gastric symptoms for several months. Began with pain which increased in severity as time went on. Acid eructations. Vomited after every meal. Blood not observed.	Abdomen moderately hard, not tender to pressure, greater curvature, lower than usual. Gastric walls moderately tense, but not resistant.	Dec. 24th. Early morning (100 ccm.)—tot. acid. 30. HCl. traces. After test breakfast—tot. acid. 20. HCl. 0. After test dinner—tot. acid. 64. HCl. traces. Dec. 27th. Early morning (80 ccm.)—tot. acid. 12. HCl. 0. After test breakfast—tot. acid. 24. HCl. traces. After test dinner—tot. acid. 70. HCl. ?	Stenosis pylori post ulcus carcinatosum ventriculi.	Patient did not consent to operation.	Patient stayed a month at our clinic, during which time he lost 3 kilo. in weight. Symptoms increased in severity; died after several months.
XII 1902	Sex not given	50 Alcoholic. Since two years burning sensation in the region of the stomach after partaking of liquor. Condition became better after abstinence. A year later symptoms recurred. Pain after eating, eructations, vomiting. For weeks coffee colored vomitus.	Abdomen soft. The outline of the stomach visible upon inspection, as is also its peristalsis. No tumor palpable.	April 18th. Early morning (40 ccm.)—tot. acid. 38. HCl. 0. After test breakfast—tot. acid. 48. HCl. 10. After test dinner—tot. acid. 112. HCl. 8. April 24th. Early morning (40 ccm.)—tot. acid. 12. HCl. 0. After test breakfast—tot. acid. 22. HCl. 4. After test dinner—tot. acid. 28. HCl. 0.	Stenosis pylori carcinatosum prob. post ulcus ventriculi.	Patient would not consent to operation.	Left our clinic in a few days. Died subsequently of cancer.
XIII 1904	M. 60	Since a few years, pain 1-2 hours after eating. Symptoms relieved by self induced vomiting. Spontaneous emesis has never occurred. Blood never noticed.	Lower border of the stomach noticeable beneath the umbilicus. No increased peristalsis or resistance to touch.	Nov. 29th. Early morning (70 c. cm.)—tot. acid. 68. HCl. 36. After test breakfast—tot. acid. 42. HCl. 18. After test dinner—tot. acid. 97. HCl. 37. Dec. 9th. Early morning stomach (40 c. cm.)—tot. acid. 16. HCl. 0. After test breakfast—tot. acid. 30. HCl. 10. After test dinner—tot. acid. 104. HCl. 24.	Stenosis pylori carcinoma post ulcus ventriculi.	Patient did not consent to operation.	Died as a result of cancer of the stomach.

<p>XIV 1906 M. 50</p>	<p>Thirteen years previously suffered with pain at the pit of the stomach and occasional vomiting. Treated by gastric lavage and felt better; not troubled for several years. Uses quite a good deal of alcohol. Trouble progressively worse for the last 6 months. Began with a diarrhea which lasted two months. This was followed by pain in the region of the stomach, eructations of disagreeable odor. Nausea without vomiting. Very emaciated.</p>	<p>Inflation showed the lower gastric border 3 fingers' breadth beneath the umbilicus. Peristalsis very moderate. No tumor.</p>	<p>Oct. 11th. Early morning (100 c. cm.)—tot. acid. 7. HCl. 3. After test breakfast—tot. acid. 31. HCl. 17. After test dinner—tot. acid. 63. HCl. 0. Nov. 27th. Early morning (60 c. cm.)—tot. acid. 26. HCl. 17. After test breakfast—tot. acid. 15. HCl. 0. After test dinner—tot. acid. 82. HCl. 18.</p>	<p>Carcinomatous ulcer.</p>	<p>Would not consent to operation.</p>	<p>Patient stayed at the clinic for 2 months, during which time he was treated by gastric lavage. His condition was markedly improved and he took on 13 kilo. A year later he died of cancer of the stomach.</p>
<p>XV 1909 M. 68</p>	<p>For six months, heart burn, eructation, pain under the costal margins—especially after meal time. Black stool for the last month.</p>	<p>Lower boundary of the stomach beneath the umbilicus; marked peristalsis; a movable tumor in the pyloric region.</p>	<p>Jan. 18th. Early morning (60 c. cm.)—tot. acid. 38. HCl. 26. After test breakfast—tot. acid. 36. HCl. 6. After test dinner—tot. acid. 108. HCl. 38. Jan. 24th. Early morning—tot. acid. 22. HCl. 0. After test breakfast—tot. acid. 46. HCl. 30. After test dinner—tot. acid. 100. HCl. 58.</p>	<p>Ulcer ventriculi in carcinoma ver-teus in parte pylorica.</p>	<p>Would not consent to operation.</p>	<p>Three months later the patient returned with well developed symptoms of a cancer. Operation impracticable.</p>

XVI 1910	55 For six months pain at the pit of stomach, especially after eating; eructations but no vomiting.	Very moderate distension at the gastric region; a hard tumor palpable two fingers' breadth above the umbilicus.	May 26th. Early morning (40 ccm.)—tot. acid. 32. HCl. 14. After test breakfast—tot. acid. 34 HCl. 20. After test dinner—tot. acid. 59. HCl. 33. June 2nd. Early morning (30 ccm.)—tot. acid. 2. After test breakfast—tot. acid. 16. HCl. 0. After test dinner—tot. acid. 3. HCl. 0. June 7th. Early morning (90 ccm.)—tot. acid. 10. HCl. 0. After test breakfast—tot. acid. 30. HCl. 10. After test dinner—tot. acid. 42. HCl. 10. June 20th. Early morning (50 ccm.)—tot. acid. 18. HCl. 0. After test breakfast—tot. acid. 16. HCl. 0. After test dinner—slight lactic acid reaction in contents of early morning stomach.	Stenosis pylori carcinomatousum.	Would not consent to operation.	The secretory insufficiency made strides. Lactic acid present.	insufficiently made rapid
XVII 1909	M. 47 For a year acid eructations, vomiting. Coffee colored vomitus 3 times in course of a year.		Oct. 7th. Morning (100 ccm.) neutral in reaction. After test breakfast—tot. acid. 50. HCl. 34. After test dinner—tot. acid. 40. HCl. 28. Oct. 11th. Morning (30 c. cm.)—tot. acid. 10. HCl. 0. After test breakfast—tot. acid. 22. HCl. 16. After test dinner—tot. acid. 86. HCl. 58. Oct. 22d. Contents of early morning stomach neutral in reaction. Neutral in reaction after test breakfast. After test dinner—tot. acid. 16. HCl. 0. Nov. 12th. Lactic acid present, in all tests for this day. Early morning (48 c. cm.)—tot. acid. 10. HCl. 0. After test breakfast—tot. acid. 4. HCl. 0. After test dinner—tot. acid. 10. HCl. 0	Stenosis pylori carcinomatousum.	Patient would not consent to operation.	The secretory insufficiency made strides and the presence of lactic acid became permanent.	insufficiently made rapid

A review of the above will show that all presented a greater or lesser degree of pyloric stenosis, and that the early morning stomach contained more or less food residue (the quantity found is indicated by the parenthesis in the corresponding column). In almost all of the 17 cases, the youngest of whom was 32, and the oldest 68, the diagnosis of malignancy was made in spite of the absence of a palpable tumor.

In nine of these cases operation corroborated the diagnosis; in eight who would not consent to operation, the subsequent course of events established the same beyond doubt. The majority of these cases showed evidence of *secretory insufficiency* (along with the pyloric stenosis) even during the first day of examination. Their symptoms were: Faint total acidity, diminution or complete absence of free HCl in the contents of the early morning stomach, but an abundance of the same after the test breakfast or dinner. (Cases IV, VII, VIII, XII) some of them (cases IV, VI, VIII, XI, XV) lacked in HCl only after the test breakfast, while others (cases III, XI) were found deficient after the test dinner.

If a second examination becomes necessary, I always wait from ten to fourteen days after the first, in order to give the patient a chance to recuperate somewhat, and thus obtain better conditions for an eventual operation. By repeated tests on these patients, and under proper conditions (meaning above all evacuation of stagnant and irritating food products) evidence of secretory insufficiency will come to light. In patients XVI and XVII who would not consent to operation, the original continuous HCl secretion, not only failed in a month's time, but lactic acid made its appearance. Attention is again called to case XII who showed variations in the chemical function. Thus for example, during May 26, all tests showed the presence of free HCl; on the second of June only the combined acids could be detected; on the 7th of June free HCl again made its appearance after the test breakfast and dinner, and finally, on the 20th of June, it was altogether absent.

It is to be remarked that in cases operated for malignancy (resection or gastro-enterostomy) *secretory insufficiency* is quite evident—a state of affairs that does *not* follow operations for ulcer, which instead show a hypersecretion for quite a while following surgical interference.

In conclusion I shall report another exceptional case.

Rosa N., 23 years of age, was admitted to the clinic Oct. 19, 1909, patient had suffered from gastric distress for the past two years. Very emaciated, and shows evidence of pyloric stenosis. Examination of gastric contents: Oct. 20th, early morning stomach 50 c. cm. of fluid. Total acidity 45. Free HCl 40. Microscopically—fat globules, starch cells, muscle fibres and sarcinae. After test breakfast total acidity 16. HCl 6. After test dinner total acidity 33. HCl 0. Oct. 26th early morning stomach contained 370 c. cm. of fluid. Total acidity 60. HCl 40. After test breakfast total acidity 10. HCl 0. After test dinner total acidity 70. HCl 0.

Malignant stenosis was diagnosed and pyloric resection performed. A month after operation, examination of the stomach contents showed a neutral reacting secretion—a constant finding after operations for malignant stenosis.

The pathologic examination showed an entirely different state of affairs. It was as follows: The wall of the stomach thickened in all its layers, particularly the mucous membrane, which was also thrown into excessive folds, running radially to the pylorus, and capable of being smoothed out. Besides that the whole surface of the mucous membrane presented pea sized thickenings, elevated in some places, and attaining the outline of a polyp in the region of the pylorus, and the pylorus itself.

Pylorus thickened throughout and its mucous membrane thrown into prominent and confluent folds. The anterior wall of the stomach in the region of the pylorus presented an ulcer the size of a quarter, which undermined the mucous membrane, and had its long axis pointing towards the duodenum. Beneath this ulcer, and almost within the mucous membrane of the pylorus was another and somewhat smaller ulcer, which hidden beneath the folds of the thickened mucous membrane, presented for quite a distance in the duodenum—duodenal mucous membrane somewhat thickened. Epithelial proliferation could not be found in any of the sections taken (and these were from many different localities). The epithelium in general was normal though separated from the submucosa, and its cells did not show karyokineses. Here and there denudation had occurred. Inflammatory infiltration was present

in all the coats, this infiltration being characterized by an abundance of eosinophile cells. The latter cells were especially numerous in the places where the small round cells were thickest. Giant cells were demonstrable at various points, among the areas of infiltration, particularly in the mucosa, and to a less extent in the submucosa. The result expected from examination of the stomach contents was in this case not borne out either by the microscopic or macroscopic findings. Neither the eosinophiles, nor the giant cells can be regarded as indices of the development of a malignant condition. Although Jedlica (*Zur Operation Behandlung des Chronischen Magengeschwürs Prag., 1904*) claims that it is extremely difficult to demonstrate microscopic areas of carcinomatous degeneration in round ulcers, the author is of the opinion that his case was one of benign stenosis, and that it forms the one exception to his numerous others.

HAY FEVER HINTS.

We are now well into the season when the services of the physician are urgently demanded by the victim of vasomotor rhinitis—a season dreaded not alone by the patient, but, not uncommonly, by his medical adviser as well. Particularly is this true of the latter if he has not kept abreast of the most modern ideas on the therapy of hay fever. In any event the disease is one that tries the patience and calls for the application of remedial agents that have been proved beyond peradventure.

In the treatment of hay fever the physician rarely has an opportunity for the application of preventive measures. His help is usually sought only after the attack has manifested itself—when the patient is suffering (acutely, in most cases) from the ravages of the disease. Effective treatment is then demanded—and promptly, too. Administration of the suprarenal substance in the form of its isolated active principle, Adrenalin, is undoubtedly the wise procedure at this juncture. One feels safe in saying this in view of the long and effective service which has been rendered by this agent in critical emergencies.

There are a number of forms in which Adrenalin is successfully used in the treatment of hay

fever. Adrenalin Chloride Solution and Adrenalin Inhalant come naturally to mind in this connection. The substance is also incorporated in the several Anesthone preparations—in Anesthone Cream, Anesthone Inhalant, and Anesthone Tape, all worthy of confidence, and especially worthy of trial in cases in which for any reason the older Adrenalin products seem not to be indicated. The Adrenalin and Anesthone products, as is well known perhaps to most physicians, are manufactured by Parke, Davis & Co. An exposition of their uses in the malady in question, together with the technique of administration, is now appearing in the commercial pages of the leading medical publications. Practitioners are advised to consult these current announcements.

MOUTH DISINFECTION.

There never was a time when so much thought was devoted to the prevention of disease as now. Modern science has shown that true prophylaxis starts with the individual. It is, accordingly, the age of personal hygiene, not the least important detail of which is mouth disinfection.

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EDITORIAL.

EXPERIENCE.

Innumerable and invaluable experiences in the lives of many great men remain unwritten and untold. Given to the world at an opportune moment, what progress might they have wrought! That they are lost is the fault of circumstances which both for our own sakes and that of humanity, we must try to minimize.

In the medical profession there are multitudes of men who work in obscurity, die in obscurity and whose labors are doomed to remain obscure. But these have learned lessons—lessons, which were they the property of men who could apply them on a larger scale, would mean the mitigation of much suffering and the saving of many lives. As he passes onward, each of these men *can not* be replaced by the novice, skillful as the latter may be.

There is the medical missionary, also the man who spends his life in treating the uncivilized, the barbaric. Think of the wealth of empirical knowledge in the possession of him who min-

isters to the poor and ignorant of the large cities. Obviously, the physician whose practise is in a community remote from active civilization, must make use of improvised methods, created in emergency and resulting in the saving of limb or life. And he is witness to many situations which are not described in books or the annals of sciences.

Some of us who have chosen cities or large clinical centers may occasionally have indulged in drollery about the country practitioner's knowledge. But the country practitioner must by necessity study and learn his patients. That can not be done very well in a city where the patients are at liberty to change as often as they desire. On the average, the country doctor has greater peace of mind and more moderated ambitions. This leaves him opportunity to learn facts about his people and their environment which are not taught him by lecture or reading and which are incalculable in the treatment of endemics, epidemics and in psychotherapeutics (Of course you smile at the association of psychotherapy with a country practitioner. Spend a week with him on his rounds and note your change of mind).

Experience is ability gained by error, venture or unavoidable participation. Each of these factors has innumerable possibilities and the person who has the care of any other person's health, may witness some of these possibilities every day.

The human body is admittedly the most complicated collection of machinery. The human mind likewise, has untold channels for the evolution of thought. Now give to the trained thinking mind the care of a body afflicted with a somewhat uncommon malady, or a common malady with uncommon manifestations, and conditions are produced favoring the acquisition of experience which is not written in text-books and is but seldom discussed in medical con-

course. Thus in their daily calling even the humble of our profession, steadily acquire ability which is redundant to the welfare of their charges.

I take it that the application of an experience is proportionate to the impression it creates in our faculties. Coming in daily contact with the nudities of life, the faculties of any practitioner of medicine become the clearing house for many secrets, the peculiar property of his patients.

Volumes may be written on the knowledge of human characteristics gained by the practitioner of medicine. The longer he practices, the clearer and the more extensive becomes this knowledge. Personal characteristics modify the course of ailments just as surely as barometric pressure does the state of the weather. He therefore who tempers his diagnosis by his experience is bound to have advantage over him who learns in the conventional manner, for the storehouse of the former is full of essential treasures and he becomes a keen analytical instrument.

I want to cite the case of a man who applied his experience to teach others an interesting lesson. He is one of the professors of medicine in the local university. A patient came to the hospital presenting almost the typical symptom-complex of cancer of the liver. A tumor was palpable. Several excellent diagnosticians pronounced it unquestionable carcinoma. Reasoning along his line of experience, the professor of medicine thought otherwise and pronounced the patient's condition gumma of the liver, in spite of the latter's high standing in society and his astute denial of any possible infection. A positive Wassermann reaction and its explanation to the patient, made him change his mind about the infection. Potassium iodide cleared up the "cancer" rather rapidly.

The above cited incidence brings to light a very peculiar characteristic of some patients—

the tendency to lie to the man they come to for treatment. The experienced physician is on the lookout for these people and he acquires a sort of sixth sense in dealing with them. The reason the erstwhile mentioned doctor did not believe in the existence of cancer in his patient, was because he observed that the patient lied in detailing his history.

Experience gained in the study of certain mannerisms become as invaluable in the doctor's armament as his ability, for example, to interpret the different cries of a baby or the expressions of delirium, unconsciousness and coma.

Most peculiarly equipped are the eyes of the man who has learned to watch certain phenomena.

Facies! that valuable adjuvant in diagnosis, has its main existence in the eye of the observer. I venture to say that if certain men were asked why they interpret certain phenomena in the manner they do, they could not give a good reason. Nor could any of us at times. It is simply that we recognize the picture. The more he sees that particular facies, the more detail does the physician learn about that particular disease and before long he can tell by a glance the faintest nuance for change. What of the myriads of pictures presented in diseases of the skin and mucous membranes! The accustomed eye only can judge.

Who can deny the superiority of the trained sense of touch? It must be conceded that here at least is one ability that is acquired by experience only. Thus the older the physician gets to be in his practice, the more invaluable does he become to the community. He may not write or be able to tell others the why and wherefore of his ministrations but he knows them to be successful. We may call that judgment, but *judgment is for the most part applied experience*. Indeed therapeutics is learned as much in the sick room as in the

library. A hint on the part of patient, family or friends will guide the trained mind in the breaking of traditions to suit the individual case.

That every person is a law unto himself can be learned by experience only. Phenomenal cures of ordinary ailments are never attained, for we all know how to treat *ordinary* ailments. Phenomenal cures of *individual* ailments are being wrought every day by men who apply their experience to suit the individual case.

So let us respect other men's activities in the cause of humanity, for with the exception of the charlatan, who has been clever enough to obtain a medical license but then prostitutes it, all physicians employ their experience to obtain quicker and more effective cures. The older physicians are due the respect of the younger, for the younger are beneficiaries of the others' knowledge. Attend the county, state and national meetings and exchange knowledge and experiences. Above all write the experiences that strike you as peculiar and so give stamina to medical statistics.

BARNET JOSEPH, M. D.

Several months ago we called attention to Wassermann's promising results in chemical therapy as applied to cancer. This investigator's encouraging lead has been followed by others, and now Neuberger, Caspari and Löhle (*Berl. Klin. Wochenschr.*) describe results obtained by the use of the colloids of a number of the heavier metals, particularly cobalt and silver. These colloids were injected intravenously in doses ranging from .005, .066, and produced striking and rapid results. Frequently within a minute of the injection the tumor became hyperemic and in twenty-four hours soft and fluctuating. A microscopical examination showed that the cells were broken down and autolyzed, leaving the end products of proteid decomposition. Primary and transplanted car-

cinomas of mice, rat, sarcomas, and adeno-carcinomas of the dog all yielded to treatment, and disappeared completely. The danger of the treatment was found to lie in the too rapid absorption of these protein by-products. The work of these observers seems to have demonstrated that Wassermann's theory of the essential difference of tumor cells and those of normal tissue is well taken.

The continued occurrence of a disease whose etiology and methods of transmission are as well known as those of typhoid fever is often cited as a stain upon our method of sanitary control. The fact that the typhoid rate in cities and large towns is continually decreasing and that the instance of the disease in these places corresponds to the period of home coming of the vacationists points to the true key of the situation. Sanitation in large towns has given wonderful results wherever people are aggregated in such a way that they can be supplied with water from a common source and a sewage disposal system. The problem of handling these intestinal diseases is comparatively simple. In the country, however, these conditions do not exist and the problem of sanitation devolves largely upon each individual household. This means that the cost of a safe water supply and an efficient waste disposal is for the individual many times higher than in the city. The average country dweller is just as anxious to have things right for the protection of his family and his city guests as anyone but he can not turn the matter over to a water or sewage department especially versed in handling such problems. He must settle the matter himself and pay for it out of his own pocket. As a natural result of this the country is fast becoming a much less safe place to dwell in than the city. The difference is not altogether in the improved city conditions as the country community grows older its soil becomes

more and more saturated with organic filth and the well which was once pure shows more and more the results of seepage through this filth laden soil. While this family staid at home, and received no visitors from beyond its borders, there was comparatively little danger from typhoid. Even with these conditions now there are very few communities which do not entertain the summer boarder. Some of these people from a distance may be typhoid carriers and with the opportunity which is so apt to exist in the country for the spread of infectious material, through the water or by means of flies, a focus of disease is apt to be started. Thus the country home whose inmates have always been blest with good health may be afflicted with typhoid fever and may send it back to the city. The prevention of this disease like the prevention of all other communicable diseases should of course, aim first at the removal of the cause, that means the spread, but with the migratory habits of our people, this idea is and will be for a long time, impossible of accomplishing. There is, it would seem, another method by which the individual can protect himself—anti-typhoid vaccination has been proved to be splendidly efficient. The value of this measure which has been a matter of dispute for a decade seems to have been positively demonstrated by the experience of the manouver division of the United States Army in camp at Texas along the Mexican border in the summer of 1911. The vaccination which consists of two or three doses of an emulsion in normal salt solution of typhoid bacilli killed at 60 degrees C. (five hundred million and one thousand million, and one thousand million given at ten day intervals in the United States Army), seems to be attended with very little local disturbance and absolutely no serious danger to the individual. Such a vaccination renders the recipient immune for a period of two or three years. Metchnikoff and Bes-

redka in experimental work upon the chimpanzee in whom they have succeeded in producing a typical attack of typhoid fever, have shown that a vaccine of living non-virulent typhoid bacilli produce an absolute immunity in these animals. From their results they maintain that this vaccine is much more efficient than that described above. They have applied the method to 745 individuals with no bad results and they therefore feel sure that this vaccine can be used with perfect safety. It seems then that the tourist or summer visitor has at his disposal a means of protection against this disease and the medical profession should be prepared to give him information upon the subject and administer the prophylactic doses, wherever desired.

NEWS ITEMS.

The ninety-ninth annual meeting of the Vermont State Medical Society will be held at Montpelier, October 10th and 11th, with the following program:

"Recent Contributions to the Surgery of Bones and Joints," Dr. John B. Murphy, Chicago, Ill.; discussion by Dr. J. B. Wheeler and Dr. C. E. Chandler.

"The Diagnosis and Treatment of Syphilis," Dr. Judson Daland, Philadelphia, Pa.; discussion by Dr. W. W. Townsend and Dr. E. M. Crane.

"Recent Additions to Our Knowledge of the Etiology of the Infections," Dr. John F. Anderson, Washington, D. C.

"Inebriety, Home and Office Treatment," Dr. T. D. Crothers, Hartford, Conn.

The President's Annual Address.

"The Physician and His Relation to the Public Health," Dr. F. T. Kidder, Woodstock, Vt.

The Vice-President's Annual Address.

"Ether Anesthesia by the Drop Method," Dr. Wm. Lindsay, Montpelier, Vt.

"Crime: Cause and Prevention," Dr. F. W. Sears, Burlington, Vt.

"Rupture of Urinary Bladder: Report of Case," Dr. Alan Davidson, St. Albans, Vt.

"Blood Pressure: Its Control by Drugs," Dr. David Marvin, Essex Junction, Vt.

"Mechanical Ileus—Report of Two Unusual Cases," Dr. M. R. Crain, Rutland, Vt.

"Diarrhea in Infants and Children," Dr. C. K. Johnson, Burlington, Vt.

Paper—Title not given, Dr. F. E. Farmer, St. Johnsbury.

ENTERTAINMENTS.

There will be a reception for the ladies at the Apollo Club Thursday afternoon from 4 to 7. Members and guests of the society are invited to be present after the afternoon session.

Friday noon the ladies are invited to a luncheon at the Country Club.

The ladies are also invited to the banquet at the Pavilion on Thursday evening.

Return postal cards will be sent out in a few days to members by the local committee of arrangements in regard to accommodations. On account of other meetings and the presence of legislators the hotels will be taxed, and the committee in planning to care for all who come, need to know the number who will attend. Numerous entertainments are being planned for the visiting members and ladies. The banquet will be held at the Pavilion on Thursday evening. The meetings will be held in City Hall, where there are ample accommodations for the general meetings, the house of delegates, and the exhibits of which we are assured the usual goodly number. There are a number of matters of especial interest to come up at this meeting, among them being the new articles of incorporation; the report of the committee on plans for the celebration next year of the centennial anniversary of the incorporation of the society; the change of date of the fiscal year.

Dr. J. W. Coolidge, formerly of Bristol, N. H., is now located in Concord.

The New York Board of Health in its July bulletin says house flies cause \$350,000 loss annually in nation's vital assets through the spread of disease, particularly typhoid fever. Added to this is \$10,000 paid annually for screens.

Hereafter foreign students coming to France to enter French Universities to obtain licenses or doctorates in law, science, literature or medicine must show the originals of their diplomas or certificates of study obtained in their own country. They must also be accompanied by translations in French.

At the International Otolological Congress just held in Boston, Dr. Clarence J. Blake, Boston, was elected president, Dr. C. R. C. Borden read a paper on Diseases of the Middle Ear and Mastoid Cells, based on a study of 454 autopsies in 2,232 cases of diphtheria, scarlet fever and measles. The interesting fact is noted that this congress was reported by the use of the dictograph and the telegraph horn and not a word uttered at the meetings was lost.

Dr. Arthur B. Bisbee, medical director of the National Life Insurance Company of Montpelier, and Dr. M. F. McGuire of the same city, sailed from Montreal, August 31st for a visit to England. They intend to return about the 15th of October.

The young son and only child of Dr. David W. Parker of Manchester, N. H., was accidentally burned to death, August 17th in their home.

The medical alumni of Dartmouth College will meet at Hanover for a general reunion the second week of September. It is the first general reunion ever held by the medical men of Dartmouth and all who have received a degree in medicine there and graduates of Dartmouth who received the degree from other medical colleges will attend. A three days' entertainment has been laid out for the visitors. The original Dartmouth medical college building erected just 100 years ago, is still in use, and it is the oldest medical building in the United States used to-day for medical purposes. The medical department of the college was founded by Dr. Nathan Smith, also the father of medicine at Yale, Vermont and Bowdoin.

Dr. S. J. Allen, who has been away for some months, has returned to West Lebanon.

Dr. W. H. Wright has gone to Georgia Centre to practice.

According to statistics compiled by the Boston Health Department for an exhibit at the National Health Congress at Washington, held in September, 77,931 school children out of 118,781 have physical defects. Only 133 had tuberculosis, while 25,121 had enlarged tonsils.

Dr. J. E. V. Mathiew, a widely known Rhode Island physician, died suddenly at his home in Central Falls, July 12th. He had been state senator for three years. He was 49 years old.

Dr. John E. Runnels has resigned the position of superintendent of the State Sanatorium at Glen Cliffee, N. H., to accept a similar position at Plainfield, N. J.

Dr. John M. Wise of the Rutland Sanatorium takes the position made vacant by the resignation of Dr. Runnels.

The bill prohibiting the misbranding of drugs and medicines with false statements about their curative properties has been passed by the House of Representatives and Senate. "If the package or label shall bear any statement, design or device regarding the curative or therapeutic effect of such article which is false and fraudulent, then the drugs and medicines shall be considered as misbranded." Such is the wording of the amendment called the Shirley bill.

Dr. Ray Russell Dearborn of Burlington and Miss Octa Hawes were married at the home of the bride in Littleton, N. H., August 20th.

Dr. H. O. Joyal of Newport, Vt., has gone to New York for a course in eye, ear, nose and throat. He will do no general practice when he returns to his home.

Dr. Harvey W. Wiley states that the amendment to the pure food law recently enacted by congress contains a joker and will not accomplish its purpose which was to wipe out the patent medicine fakes.

The parcels post which goes into operation January 1st, next, will be of great benefit to doctors. The following are the rates established:

	First pound.	Each additional pound.	Eleven pounds.
Rural route and city delivery	.05	.01	.15
50 mile zone	.05	.03	.35
150 mile zone	.06	.04	.46
300 mile zone	.07	.05	.57
600 mile zone	.08	.06	.68
1000 mile zone	.09	.07	.79
1400 mile zone	.10	.09	1.00
1800 mile zone	.11	.10	1.11
Over 1800 miles	.12	.12	1.32

The Milk Committee of the Board of Health of New York City has just published a report to the effect that of two hundred and thirty hotels, restaurants and lunch rooms visited by milk inspectors the better and higher class hotels and restaurants furnished the very lowest and poorest grade of milk to their patrons. The lowest grade of milk was in the restaurant of one of the best known hotels, while in the bar-room the best grade of milk was furnished at less than half the price charged in the restaurant.

Dr. Ernest H. Buttles, Assistant Professor at the University of Vermont College of Medicine, and Miss Sarah Lake Willard, youngest daughter of the late Dr. G. F. B. Willard of Vergennes, were united in marriage at the home of the bride in Vergennes, September 4th.

The United States Civil Service Commission announces that the examinations for trained nurse in the Isthmian Canal and the Indian services will be held on October 16, 1912, as scheduled, but that the announcement of the examination for this position in the Philippine service is canceled because of advice from the Bureau of Insular Affairs that future vacancies in this position in the Philippine service will likely be filled by Filipino women.

Issued Aug. 14, 1912.

Dr. Geo. I. Cutler, aged 79, a practitioner for 48 years, recently died at his home in West Swanzey. He was a graduate of the University of Vermont, in the class of 1864. He was many years a member of the Pension Ex. Board of Cheshire Co.

Dr. and Mrs. E. V. Melville of St. Albans, Vt., have returned home after a 6 months' tour abroad. Dr. C. E. Loftis (U. V. M. '10), who has been assistant to Dr. Melville since Dec. '11, will open an office in St. Albans.

Professor Dr. H. Strauss of Berlin will lecture at the New York Post-Graduate Medical School and Hospital, Second Ave. and Twentieth Street, on October 12th, 14th and 15th, on the Diseases of the Stomach and Kidney. Professor Dr. Carl von Noorden, Physician in Chief to the City Hospital, Frankfort, Germany, will also deliver a series of lectures on the Pathology and Treatment of Diabetes, Radium Therapy and Arteriosclerosis at the same place, on October 28th to October 31st inclusive.

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Bio. 16—1000 antitoxic units.	Bio. 20— 5000 antitoxic units.
Bio. 17—2000 antitoxic units.	Bio. 21— 7500 antitoxic units.
Bio. 18—3000 antitoxic units.	Bio. 22—10,000 antitoxic units.

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THERAPEUTIC NOTES.

HIGH-POTENCY ANTITOXIN.—A noticeable preference for concentrated antidiphtheric serum (globulin), as compared with the older or "regular" form of diphtheria antitoxin, has manifested itself among the medical fraternity. "High potency, small bulk," appears to be the order of the day. A good index to the tendency in this direction may be found in the offerings of the manufacturers, who, as a matter of course, are promptly responsive to each new demand of the profession. For confirmation of the belief that the concentrated product is now in the ascendancy, one has but to turn to the announcement of Parke, Davis & Co. in the current number of this journal, "Antitoxin That Justifies Your Confidence." Here one finds prominently featured the concentrated antidiphtheric serum (or globulin). It is interesting to note in this connection that a wider range of dosage than formerly is now offered—from 500 to 10,000 antitoxic units—the larger doses, of course, being provided for severe, late or other exceptional cases. And herein, at least, is one undisputed point in favor of the concentrated antitoxin: when a large dose is needed, it can be administered in this form without difficulty and with little danger of disturbance, owing to the comparative smallness of its bulk.

Some physicians, it may be noted, are under a misapprehension as to the nature of the concentrated antidiphtheric serum (globulin), assuming that it is widely different from the product which they have known for years as antidiphtheric serum. The idea is wholly erroneous. Concentrated antidiphtheric serum (globulin) is the regular product, precipitated and purified, from which most of the serum constituents have been eliminated except those bearing the antitoxin. It is in no sense inferior to the original serum—on the contrary, as previously noted, it possesses the advantage of lesser bulk.

In order further to popularize the demand for BACTERINS (Bacterial Vaccines) and enable physicians to make more general use of these products, we call attention to the downward revision of prices on Mulford Bacterins, effective August 5th.

The Mulford Bacterins are in every case "polyvalent," which means that the bacteria contained in a bacterin, although of the same species, are obtained from many different sources. For instance, streptobacterin is polyvalent, the bacteria used for its preparation are all streptococci and are isolated from different patients suffering with streptococcal infections among which may be mentioned puerperal sepsis, general septicemia, erysipelas, tonsillitis, empyema, cellulitis, etc.

A number of the Mulford Bacterins are "mixed" by which is meant that they contain the various bacterial species generally present in a mixed infection. For instance, the mixed vaccine of chronic gonorrhoeal infections, besides the gonococcus contains various staphylococci, colon bacilli streptococci, and other organisms isolated from cases of chronic urethritis and prostatitis.

In some cases, diseases from their inception are due to mixed infections, while in many others the infection becomes a mixed one as the disease develops. Past experience and results have fully established the advantages claimed for these "polyvalent" and "mixed bacterins."

THE POWER TO RECUPERATE resident in the tissues, may be markedly augmented by Cord. Ext. Ol. Morrhuæ Compound (Hagee), and with many physicians it is a routine practice to employ it for this purpose.

The usefulness of Cord. Ext. Ol. Morrhuæ Comp. (Hagee) as a reconstructive lies in the nutritious elements contained, which when fed to impaired tissues build up and strengthen them. Each fluid ounce of the cordial represents the extract obtainable from one-third fluid ounce of cod liver oil (the fatty portion being eliminated), 6 grains calcium hypophosphite, 3 grains sodium hypophosphite with glycerin and aromatics. It is free from grease and the taste of fish.

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THE ICE BAG IN APPENDICITIS.—In a most interesting article by A. M. Fauntleroy, Surgeon of the United States Navy, *Medical Record*, Aug. 3, 1912, the fact is brought out, basing the same upon a large number of cases of appendicitis operated, that the ice bag is positively harmful in this condition. In 50% of the cases operated, where the ice bag was used, the condition seemed to indicate that there was a noticeable lack of effort on the part of nature to wall off, from the rest of the abdominal cavity, the appendix, which was frequently very much congested, gangrenous or perforated. He also observed that in the ice bag cases there was a surprisingly low white cell count when one took into consideration the condition found in the abdomen at the time of the operation. From 8,000 to 11,000 white cells was the rule in these ice bag cases when one would be justified in saying that the pathological condition warranted a constitutional reaction of from 20,000 to 30,000 leucocytes, or even higher.

On the other hand, in those cases in which the hot water bag or morphine had been used prior to operation (the ice bag not being used at all), the white count corresponded to what one would expect. Dr. Fauntleroy advances from his findings the logic that while the ice bag causes numbness, practically the same as in the condition of frost-bitten ear or toe, it also decreases hyperemia, leucocytosis and stasis in the part to which it is applied. That heat is the direct antithesis of cold in encouraging favorable physiological action in inflammatory processes, whether superficial or peritoneal, seems to be from his report most logically and conclusively proven.



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The twenty-second annual session of the New York and New England Association of Railway Surgeons will be held at the Hotel Astor, New York City, on Wednesday, November 13th, 1912. A very interesting and attractive program has been arranged. Dr. John B. Murphy, of Chicago, will deliver the "Address in Surgery." Railway surgeons, attorneys and officials and all members of the medical profession are cordially invited to attend.

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OBITUARY.

Dr. Clarence E. Carruth, a graduate of the University of Vermont College of Medicine, class of 1880, died at his home in Cohoes, N. Y., August 31st. Dr. Carruth was mayor of that city and was serving his fifth term. Dr. Carruth served as surgeon at the Mary Fletcher Hospital, later going into general practice at Island Pond and then going to New York State.

BOOK REVIEWS.

THE SURGICAL CLINICS OF JOHN B. MURPHY, M. D., at Mercy Hospital, Chicago. Volume I, Number IV, (August). Octavo of 154 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Published Bi-Monthly. Price per year: Paper, \$8.00, Cloth, \$12.00.

The Fourth (August) number of the Surgical Clinics of John B. Murphy has just been issued. It contains discussion of the following cases—Acute Appendicitis and Pneumonia; Chronic Appendicitis; Ankylosis of the Knee; Arthroplasty; Joint Infections; Angiophlebitis of Leg and Thigh; Old Muscular Hemangioma; Hypertrophy of the Prostate; Nephropyloplasty; Ankylosis of the Left Elbow Joint; Fracture of Joint with Deformity; Tumor of the Abdomen; Retroperitoneal Sarcoma; Concession of the Spine with Impacted Fracture of the Vertebrae; Traumatic Epilepsy; Decompression; Transplantation of Bone; Carcinoma of the Lip; Carcinoma of the Splenic Flexure of the Colon; Intestinal Obstruction and Students' Clinic—Fractures.

logically descriptive way that one can read page after page with genuine interest.

THE SURGICAL CLINICS OF JOHN B. MURPHY, M. D., at Mercy Hospital, Chicago. Volume I, Number II. Octavo of 291 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Published Bi-Monthly. Price per year: Paper, \$8.00. Cloth, \$12.00.

The second number of the report of the surgical clinics of John B. Murphy contains history, discussion of diagnosis, and treatment of cases of Ununited Fracture of the Tibia; Charcot's Ankle-Joint; Ununited Fracture of the Neck of the Femur; Arthritis of the Knee-Joint; Pelvic Tumor; Ununited Fracture of the Humerus; Lengthening of the Tendo Achilles; Inoperable Sarcoma of the Face; Salvarsan; Cutaneous Syphilis; Salvarsan; Gastric Ulcer; Secondary Operation; Ankylosis of the Knee; Arthroplasty; Volkmann's Contracture; Ankylosis of the Hip; Arthroplasty; Prolapsus Recti; Exploratory Laparotomy, Appendectomy, Megaduodenum; Plastic Operation of the Face; Cyst in the Left Iliac Fossa; Trauma of Cystadenoma of the Breast; Anastomosis of the External Popliteal Nerve. The cases are discussed very fully by Dr. Murphy and several photographs, X-Ray cuts are incorporated. These discussions come as near an actual attendance at the clinics as is possible, and have the advantage over that that the record is permanent and does not depend upon the memory.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

RENAL SURGERY.

The frequency of the several pathologic conditions which make up the group of surgical diseases of the kidney and ureter has been studied by E. M. STANTON, Schenectady, N. Y. (*Journal A. M. A.*, March 16). He gives tables indicating their relative frequency as shown by autopsy statistics and hospital practice and operations. He classes them under the following heads: Calculus disease in kidney or ureter, or both; other obstructions interfering with passage of urine from kidney to bladder; pyogenic infections involving the kidney and ureter; tuberculosis; tumor growths and traumatism. From his first and third tables as given he says we may safely estimate that surgical lesions of the kidney or ureter of at least practical diagnostic interest are found in approximately from 4 to 6 per cent. of patients coming to autopsy and that the great majority of these could have been at some time cured or greatly helped by timely, accurate diagnosis and surgical treatment. With very few exceptions in these cases the renal

A TEXT BOOK OF PATHOLOGY. For Students of Medicine.—By J. George Adami, M. A., M. D., LL. D., F. R. S., Professor of Pathology in McGill University, Montreal, and John McCrae, M. D., M. R. C. P., (London), Lecturer in Pathology and Clinical Medicine in McGill University, formerly Professor of Pathology in the University of Vermont. In one octavo volume of 759 pages, with 304 engravings and 11 colored plates. Cloth, \$5.00, net. Lea & Febiger, Philadelphia and New York, 1912.

We cannot too highly praise the volume. The work shortens within the scope of a student book the whole range of pathology so admirably and intimately covered by the two volume work of Adami and Nichols and yet it loses none of its simplicity, clearness or vigor. It (with the two volume work) is the only text book on the subject which is written in such a

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CATALOGUES

The Medical Department of the University of Vermont will appreciate it very much if any of the Alumni can furnish catalogues of the Medical Department of the following dates to complete the files, 1857-66-7-8-9-71 and 73. These may be sent to the Dean.

lesions were the chief cause of death, and they constitute a group that are particularly fatal, sometimes killing quickly but more often adding to the handicap which determines the fatal outcome whenever the bodily resistance is diminished by intercurrent disease. In the table showing the frequency as shown clinically in hospital practice, compiled from statistics from ten representative American hospitals during the years 1908 to 1910 inclusive, about 1 per cent. of the patients suffered from surgical kidney disorders, which Stanton thinks probably represents a fair average of these conditions as recognized by the average standards of diagnosis. In 25,243 surgical cases treated in three American hospitals where cystoscopic and x-ray examinations are made in all suspicious cases there are 527 operations on the kidney and ureter, or nearly 2 per cent. of the whole,

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as compared with about 1 per cent. in seven hospitals in which the x-ray and cystoscope are used to only a limited extent.

CARBON-DIOXID-OXYGEN.

ETTORE LEVI, Florence, Italy (*Journal A. M. A.*, March 16), says that it has been shown that carbon dioxide is one of the most important of the body hormones, exercising a regulative influence on the action of the heart, on the tonus of the blood-vessels, and especially on the respiration. This is largely due to the Italian School of Physiologists, but he specially mentions the investigations of Yandell Henderson on acapnia as a factor in shock. From these he was himself led to consider the practicability of utilizing mixtures of carbon dioxide with oxygen for the purpose of stimulating the bulbar centers in those cases in surgical practice in which they are temporarily paralyzed by the anesthetic or trauma. His experiments have shown that we have in this, when properly diluted, a therapeutic agency of extraordinary potency. His experiments were first tried on animals and their success with these led him to employ it in human beings, with at times brilliant success, particularly in cases in which the breathing had become shallow, irregular or of the Cheyne-Stokes type. It is now nearly two years since his first publication on this subject and since then the method has been employed regularly in the surgical clinic in Florence. Professor Burci, the head of the clinic, has such faith in the method that he has made a standing order to have the carbon-dioxide-oxygen mixture always at hand for immediate use in case of need. The best results are obtained with a mixture containing 15 per cent. of carbon dioxide, and it is not their custom to wait until complete respiratory paralysis or profound shock has been produced, but to give inhalations of the mixture on the appearance of the slightest tendency to failure of respiration or cardiac function. Even in profound shock the results are beneficial, and in no case have they observed any ill effects from the treatment. He mentions particularly a case of suicide by hanging in which prolonged artificial respiration, oxygen inhalations and hypodermic stimulations had failed. The case was practically given up as hopeless when the carbon dioxide was administered with the result of reproducing spontaneous respiration. The method has also been found serviceable in cases of profound toxic asthenia as a substitute for the peripheral stimulation ordinarily used. The observation of this method affords an explanation of the good effects obtained in surgical practice from the method of artificially reduced circulation in narcosis. It seems probable that the remarkable rapidity of recovery in such cases is due to the sudden return to the general circulation of a large amount of blood rich in carbon dioxide when the lower limbs are unbandaged. Following up this suggestion they found that the use of a mixture containing 10 to 15 per cent. of carbon dioxide was very effective in awakening the patient after anesthesia. It also tends to decrease the tendency to postchloroform vomiting.

MATERNAL NURSING.

I. S. WILE, New York, (*Journal A. M. A.*, March 16), thinks that the amount of attention that has

been given to methods of artificial feeding has rendered physicians a little less insistent in attempting to continue maternal nursing. Supplemental artificial feeding is too often given to children during the first few weeks of life without informing the mother that it is merely a temporary procedure. The fact that the suckling by the infant is one of the main factors in causing an adequate secretion of the milk-supply is too often overlooked. At times the weakness of the infant in suckling may be an insufficient stimulus and during the first few weeks of the puerperium the maternal milk-supply undergoes changes, owing to the readjustment of the mother to the new duties in addition to the old burdens in her weakened condition. This is a bad time to withdraw the infant, and Wile calls attention to the possibility of placing the baby back on the breast after it has been removed for a time. The best method of creating a maternal milk-supply is to secure the traction on the nipple by the nursing infant. He cites a number of cases in which the milk-supply had been renewed in this way, and he thinks it is seldom necessary to keep the infant away from the breast on account of sore nipples for over two weeks. If there is an abscess there is no reason for permanent discontinuance after it has been carefully treated by incision and the wounds have healed. The contagious diseases of diphtheria, scarlet fever, measles, etc., require discontinuance of nursing, but after quarantine has been raised another effort should be made to recall the glandular secretion. His article is summed up as follows: "Maternal nursing may be reestablished through the regular suckling of an infant, even though several months may have elapsed since the breasts were used for this purpose. Mastitis, unless there is pus in the milk, does not contra-indicate breast-feeding, nor do the mild infections. After abscess of the breast or the contagious diseases every effort should be made to place the infant back on its mother's breast. Mixed feeding or supplemental feeding is of great value while developing the maternal supply, especially during the first month. To prepare a milk-supply for puny infants advantage accrues from putting older or stronger infants to the mother's breasts to regulate and develop the supply. Every effort should be made to retain infants at the breast, and physicians, milk stations and hospitals live up to their obligations to society only when they endeavor to maintain maternal nursing for the longest possible period."

ATROPIN IN DIABETES.

H. O. MOSENTHAL, New York (*Journal A. M. A.*, March 16), reports two cases of diabetes in which he tested the atropin treatment advised by Rudisch and by Forchheimer. He gives tables of the diet and of the urine analysis and medication. The atropin sulphate was used in doses of from 1/100 to 1/25 of a grain daily, carrying it until toxic effects were observed. The glucose was determined by Benedict's method, the ammonia by that of Folin and the nitrogen by the Kjeldahl process. The presence or absence of acetone was established by the Legal reaction; of diacetic acid, by the ferric chlorin test. The results as shown by his tables give no indication that atropin sulphate causes any change in the carbohydrate tolerance of sufficient importance to make it of clinical value in the treatment of diabetes.



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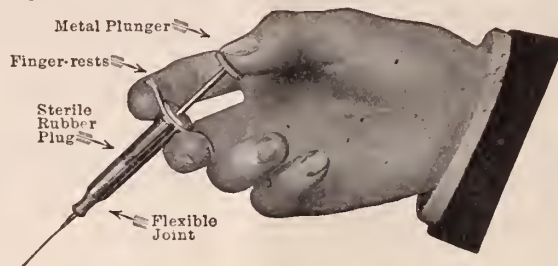
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The postponement of the Seventh International Tuberculosis Congress at Rome, Italy, to April, 1912 meets with general approval on account of the prevailing dread of cholera in southern Europe. The congress was to have been held the last week of September and the work had already been well organized and numbers of important papers received.

The apparent efficacy of vaccination for typhoid fever has led the Salt Lake Board of Health to begin an active campaign for its use in putting an end to the ravages of typhoid fever. The board has not yet decided to make the use of the vaccine compulsory, but that it will constantly have the preparation on hand and that city physicians will administer it free of cost.

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The June number of the Surgical Clinics of John B. Murphy, M. D., published by W. B. Saunders Company, contains an exhibition of cases previously operated upon and discussion of the following new cases. Impacted Colles' Fracture; Fracture of the Olecranon Process; Division of the Brachial Plexus; Tuberculosis of the Intestines—Laparotomy; Cystic Goiter; Double Cervical Rib; Impacted Fracture of the Head of the Tibia with Posterior Luxation;

Tumor (Hypernephroma) of the Kidney; Cholelithiasis; Typhoid Spine; Extradural Hemorrhage from Trauma; Excision of Three and One-Half Inches of Dura; Pott's Fracture; Five Diagnostic Methods of John B. Murphy.

A woman in one of the wards in the Rhode Island hospital was informed she had appendicitis and would have to be operated on at once. Much frightened, she reluctantly consented and was conveyed to the operating room.

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Then, as he made a move to put his hand in her mouth, she opened her eyes wildly and exclaimed:

"Nothing but my tongue, doctor, and for God's sake don't cut that out, too!"—*Wisconsin Med. Jour.*



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Vermont Medical Monthly.

VOL. XVIII.

OCTOBER 15, 1912.

NUMBER 10

ORIGINAL ARTICLES.

RELATION OF THE PHYSICIAN TO THE PUBLIC HEALTH—PRESIDENT'S ANNUAL ADDRESS.

BY

DR. F. T. KIDDER,
Woodstock, Vt.

I was not aware when I chose as the subject for my paper "The relation of the physician to the public health" that the same subject was used a few years ago by one much better able to treat it than myself. But as it is one of so much importance I may be pardoned for again bringing it to your attention. Am I my brother's keeper? was a question that was asked many centuries ago, but the Great Physician answered it nearly two thousand years ago and that answer has been echoing down through the ages, "Thou shalt love thy neighbor as thyself." In no profession has this precept been followed as it has in the medical profession, not only in the present age but in all ages since the time of Hippocrates has this been true. We are apt to speak of preventive medicine as something of recent origin and I fear are prone to congratulate ourselves that we are better than those who have preceded us and are sacrificing ourselves more for the common good than those of any other time. While this may be true from the fact that we have learned many things they did not know, yet the intent was with them in full as strong a measure as with us. Perhaps a little history of the beginnings of preventive medicine among the English people may not be out of place as showing even then, that it was the physician who fought against great obstacles and with similar arguments as are used to-day, to prevent the spread of disease rather than the cure of it. Although Galen speaks of trying to stop the spread of disease by building fires in the infected regions and thus purifying the air, there was very little done in the way of preventive medicine until the last of the seventeenth century and none

among the English speaking peoples until the first of the eighteenth century. In 1720 Dr. Richard Mead of London, after having carried on a propaganda of education among those in authority, was instructed by the Lord Justices of England to draw up proper directions to defend England against the plague which was then raging in France.

His rules for quarantine would have been interesting, but he says that he had such short warning and so little leisure that instead of writing a set of directions in form, he put down the principal heads of caution, and most heartily wishes the precautions that may be taken to stop the introduction of the disease may render unnecessary the suppressing of the infection after its arrival. Following the publication of these heads of caution, Parliament enacted quarantine regulations against the plague, the first quarantine regulations enacted by the English nation. The principal management of this epidemic consisted of two things and these are the fundamental principles of quarantine to-day. First, in separating the sick from the well and second, in cleaning well the houses and people that had been infected. He policed the house or town that had the plague, allowing no one out until they had spent three weeks in a detention camp with the burning of the infected clothing. But even at this early day, politics took a hand in the matter and in the following October the two last clauses of this act relating to the removing of sick persons from their habitations and the making of lines about infected places, were repealed. Not because, as Dr. Mead says, the rules were not right and just, as they had accomplished the object sought and stopped the spread of the plague; but because the opposition to the government saw an opportunity to overthrow it. The argument used against quarantine then, sounds very familiar to-day, that it was placing too much power in the hands of the authorities delegated to carry it out and was a restraint on personal liberty which should not be allowed without remuneration. In this contest, it was, as usual, the physicians who were upholding the hands of the government, and at the same

time striving to educate the people in health matters and combat the superstitions that then prevailed, at a time when every visitation of a death dealing nature was supposed to be caused by Divine wrath.

Dr. Mead writing two hundred years ago, expressed a sentiment that is as true to-day as then, but which is often forgotten when complaining of the hardships of quarantine. He says: "Every man ought to consider himself as a member of the society, by the laws of which as he receives many advantages, so he gives up some of his own private rights to the public; and must therefore be perfectly satisfied with whatever is found necessary for the common good; although it may, in particular occasions, bring upon him inconveniences and sufferings."

In regard to disinfection, it is interesting to note what was proposed by Dr. Mead. After advising that the houses be kept clean and cool, with as much fresh air as possible, he recommends that they also be washed with vinegar and water, than all which, especially vinegar, nothing more proper can be proposed. It is not improper likewise, to fume houses with vinegar, either alone or together with nitre, by throwing it upon a hot iron, although this be directly contrary to what modern authors mostly advise. He continues, the smoke of sulphur, perhaps, as it abounds with an acid spirit, which is found by experience to be very penetrating, and to have a great power to repress fermentations, may promise some service this way. From this beginning, two hundred years ago, until the present time, physicians have been working along the lines of preventive medicine and following their instruction, the common people have been more and more interested until never before have public health matters occupied so large a place in the public interest as to-day. Doctors are continually working, not only in doing that which seems to be against their own interests, but are sacrificing their health and lives for the common good and in this way answering the question, "Am I my brother's keeper?"

At the present time the question of the physician in his relation to the public health is a very acute one and they are being asked more and more, not "what can I do to get well," but "what can I do to prevent me from getting ill," and especially is this true in regard to the pre-

ventable diseases which cause so large a part of the death rate. Tuberculosis, typhoid and venereal diseases are responsible for a heavy toll annually and it is the province of the physician to take the lead in the abatement of these diseases. There are, it seems to me, three ways in which this may be accomplished. First, by a more thorough education of the public in health matters. Second, in an increased effort by physicians to enforce existing health laws and regulations. Third, to aid in securing additional and more comprehensive legislation. There is nothing so hard to combat as ignorance, hence the first of these is the most difficult to accomplish. The large majority of people, especially those who live outside of the cities, know comparatively nothing of the principles of sanitation, nor do they appreciate the sources or dangers of polluted water used for domestic purposes, or the dangers to health from impure food or unsanitary milk. The old idea that the physician should retain a dignified reserve and simply go when called, to treat disease, is long ago obsolete, and does not conform to the principles of preventive medicine or to the duties which he owes the public. Many good physicians apparently think that all the labor coincident to the work of public health is distinctly the province of the different boards of health, both state and local and that there is no responsibility resting upon them. It seems to me that the family physician can do much more in this respect than any one else, and the responsibility rests almost entirely upon him. The family physician, and most of us in the country are that, should have a general oversight of the families under his care and see to it that they were given instruction in all things that pertain to their health and the precautions to be taken to prevent disease. Medicine is becoming more and more a social service. In treating a case of contagious disease we all of us should recognize the fact that we are serving the public quite as much as we serve the patient. The work of education along the lines of preventive medicine has thus far been left mainly to the boards of health and the physician has had very little to do with it, but he does not live up to the principles of his high calling if he does not strive by every means in his power to assist in the education of the people to protect themselves against disease. The country physician has a great opportunity to do this. He is in close

touch with the people under his care and is their advisor in all things pertaining to their health. It is easy for him to give them instruction in the right mode of living and the proper care to be used in regard to their water supplies and sanitary arrangements as well as in the construction and care of their barns and the precautions necessary to be taken to insure clean milk. There is opportunity also for the physician to carry on this work of education by accepting every opportunity to address the people on health matters and in this way impress upon them the fact, that he is looking after their well being and is more concerned about keeping them well than curing them when ill. The community idea is making rapid progress in the country and in this lie great possibilities for better education and better sanitation, for a man's life is embedded in the community. "He must breathe the community's air, drink the community's water, avail himself of the community's sewer and expose himself to the community's contagious diseases, and on the sanitary conditions of that community must largely depend the health of the individual." The matter of education relates to what the physician may do and what his conscience tells him he ought to do for the good of his fellow men. The second part of my subject, viz.: an increased effort by physicians to aid in the enforcement of existing health laws and regulations, is what he, under the law, must do. Many of the existing laws and regulations of the health boards, have heretofore not been very rigidly enforced because the people and some of the physicians were not back of them, and it seemed the part of wisdom not to be too strict to the letter of the law, but to wait for the time, which is fast approaching, when the general public should demand that the laws which have been passed for their protection should be enforced. With a few exceptions, the physicians of the state are doing what is possible to aid in the enforcement of the existing health laws, and these exceptions are probably due not so much to wilful neglect as to carelessness and lack of appreciation of the gravity of the conditions.

It has been necessary, however, in some cases to start prosecutions for what seemed to be flagrant and unexcusable violations of the law.

This has been done, not alone because the law was so wilfully violated, but because the public demanded it. A case in point occurred in Windsor County. A physician who was attending a case in a small village where there had been a number of cases of diphtheria, reported the death as from pneumonia. The people become so alarmed that an autopsy was ordered by the Attorney-General, with the finding of a laryngeal diphtheria. Another death soon occurred in the same family which also was neither reported nor quarantined. The physician's arrest followed and his subsequent conviction in the County Court. The satisfactory part of this trial was the evident change that has taken place in the way the community regard the physician's relation to the public health. This was an aggravated case and one that does not often occur, yet we fear it is not distinctly understood by physicians in general that the obligation of quarantining and reporting cases, together with the penalty for failure, applies equally to the milder diseases, measles, whooping cough and chicken-pox as it does to the more severe diseases, scarlatina, smallpox and diphtheria. The great cause of the recent spread of smallpox in Vermont was primarily, because it was mistaken for chicken-pox and secondly on account of the failure to report or quarantine the chicken-pox. In one town that comes to mind there were two successive infections without quarantine or any report of a contagious disease until the sixth week when the third set of cases developed and they proved to be smallpox. The old idea still prevails to a great extent, that children had best have these milder contagious diseases while they are young and before they leave home and consequently they object to having the cases reported and quarantined. This idea is still frequently upheld by physicians in spite of the fact that measles and whooping cough are responsible for more deaths than scarlatina and diphtheria combined. In 1911 in Vermont there were seventeen deaths from diphtheria, five from scarlet fever, thirty-six from measles and thirty from whooping cough. Is it too much to ask that patients suffering from these so-called milder diseases be given the same care and the public the same protection as from the severer cases? But it is in the matter of reporting cases of tuber-

culosis that there seems to be the most difficulty. That seems to be very nearly a lost art.

In 1911 there were in Vermont four hundred and thirteen deaths from tuberculosis, with probably twenty-five hundred cases in all stages of the disease, and yet the number reported to the Secretary of the State Board was only one hundred and seventy-nine. In the milder diseases there are many cases that do not call a physician and the head of the family does not yet realize that the duty of reporting rests upon him until a physician is called, so that many of these cases are not reported. But with tuberculosis there are probably but a few that do not have medical attention so that the failure to report rests entirely upon the physician. Many physicians have failed to report their tuberculosis cases because they did not wish the literature sent their patients by the Secretary of the Board, in regard to the precautions they should take for their own benefit and for the safety of those about them. In justice to the Secretary, allow me to quote the law which he follows: "A physician who is consulted by a person subject to tuberculosis shall submit the name and address of such person to the Secretary of the State Board of Health, upon such blanks as it may furnish, with such other facts as may be required, within one week after such consultation. A physician who violates a provision of this section, shall be imprisoned ten days, or fined not more than fifty dollars or less than five dollars or both. Said board shall immediately upon being notified of a case mentioned in the preceding section, send to the person whose name is so reported a circular containing proper information as to the disposal of sputum and such other facts as are necessary for the welfare of the person afflicted and the community in which he lives." Although the deaths from tuberculosis in Vermont have decreased fifty per cent in the past twenty-five years, due partly to the improved methods of treatment, but due much more to the care that has been taken to prevent the spread of the disease, yet it is incumbent upon the physicians to be still more vigilant and watchful of the patients under their care and do whatever is possible to aid the proper authorities in carrying out their part of the crusade against this terrible scourge.

The third duty of the physician in his relation to the public health, is to aid in securing additional and more comprehensive legislation. In carrying out this part of the work, the medical profession have a great influence, probably more than any other class of men. There are but few men who are sent to represent the different towns in the Legislature, who will not follow the advice of their physician in all health matters, and it is his duty to keep himself informed in regard to the health bills that are introduced and use his influence with his representative in favor of all such measures that are meritorious. At the last session of the Legislature, the President of one of our colleges, having been led to realize the baneful effects of venereal disease among the young men of the country, had prepared and introduced a bill making these diseases reportable. This bill was a long step in advance of any legislation that had preceded it and seemed almost radical. It was referred to the joint committee on public health, was reported back to the House without recommendation and of course was promptly killed. This bill was of like character of bills that had been proposed in other states and made venereal diseases reportable by number, seemingly a harmless measure as far as the patient was concerned. Had this been enacted, Vermont would have been the first state in the Union to have had such a law upon its Statute books. Since that time California has passed a very similar law and it will probably be enacted in other states the coming year. The department of health of New York City has issued a regulation making venereal diseases among those to be reported. I am well aware that this might be a step in advance of what public opinion might sanction at the present time, because the public are not informed as to the great prevalence of these diseases nor as to the terrible consequences that follow in their wake; where the sins of the fathers are visited upon the children even to the third and fourth generation. Jane Addams in an article on social control truly says: "Yet it is easy to predict that a society committed to the abolition of infectious germs to a higher degree of public health and to a better standard of sanitation, will not forever permit these highly communicable diseases to spread unchecked in its midst; and that a public convinced that sani-

tary science, properly supported, might rid our cities and towns of this type of disease will at length insist upon its accomplishment." Indiana has a law providing for the requirement of a certificate of health prior to the issuance of a license to marry. The enforcement of such a law, with the present lack of knowledge of the general public, might be problematical, yet its value in an educational way would be very great. The General Federation of Women's Clubs at its last annual session indorsed such a law and voted to urge its passage in every state. With women, who in the large majority of cases, are the innocent sufferers, taking the action they are beginning to take, aided by the physicians, a combination that would be irresistible, the social diseases will, in time, be controlled and the marriage laws placed on a healthful basis. Let us, as physicians, strive to uphold the hands of those who are trying to benefit mankind in this respect and keep Vermont, as she has always been, among the leaders in all matters pertaining to the public health.

There are so many things that ought to be done in the matter of legislation that time does not permit of mentioning all of them. Vaccination is too important a matter to be passed over without comment. There should be a law on our statute books making vaccination for smallpox obligatory. Until within the past year there have been so few cases of smallpox that the people have become very careless in regard to vaccination, consequently when the disease appeared there was very little protection against it. Even if not possible to have a perfectly satisfactory law, it would seem incumbent upon us to, at least, try to secure the adoption of one that would enable the health authorities to insist upon vaccination as a requirement to attending school. A law requiring vaccination against typhoid would probably sound too chimerical to be even mentioned, yet the time is coming when such a law will be passed and the people will want it enforced. We hear much in these days about conservation of water powers, minerals, forests, etc., but very little about the real thing that we need to conserve and that is the American people, their energy, their lives and health. Germany for the past twenty-five years and England for ten years have been carrying on a crusade for the betterment of their working people.

They have reduced the typhoid death rate until it is one-third less than ours. They have reduced their consumption rate to about fifty per cent of what it was, while ours has only decreased twenty-five percent. Is it not time for us, by following their example, to enact such needed legislation as will lead to the betterment of the human race and chief among these is the one that has to do with the conservation of life and health through the suppression of preventable diseases? Our generation may not see the entire suppression of these diseases, but before this century is closed contagious diseases will be a thing of the past and the twentieth century, of which we are a part, will, if we, as the rightful leaders in this movement, do our duty mark the culmination of the work in preventive medicine.

The main economic question involved, is whether with the suppression of preventable diseases and the more thorough inspection of food products, there will not be too many men in the medical profession. The number of diseases requiring medical attention being reduced will of necessity, curtail the income of the physician to some extent, but other activities to increase his usefulness will arise to offset this seeming loss of income from this cause. It is possible and even probable, that the time may come, when the financial standing of the physician's income will be an entirely different basis, when the doctor will be paid a yearly salary by each family under his care, not to cure them when ill but to keep them from being ill. The number of medical graduates was more than one thousand less last year than it was eight years ago and the number of medical schools has dropped during the same time, from 166 to 120, while the population in ten years has increased approximately sixteen million. This decrease in the number of graduates is due to the higher standards of medical education that are being required and the consequently less opportunity for uneducated men to enter the profession. With the raising of the standards for admission to the medical schools, it takes from one to three years longer for a student to obtain his degree and much added expense. Consequently, for the present at least, there are fewer young men going into the profession and these after graduation, will not select a small town, where they can obtain only a moderate income, as their residence, but having given up this added time and money, will

seek the larger places where there are more opportunities for advancement. Should this condition continue, what will be the result in the smaller places?

Already there are many places in the country where there is no physician within a radius of many miles, and the number of physicians in proportion to the population is constantly growing smaller. Dr. Flexner in his report on the medical schools of the country, said there should be but two medical schools in New England, Harvard and Yale, but I am sure he could not have realized what would happen in the country districts if this should occur. Without the University of Vermont Medical Department, it would be but a few years before there would not be enough doctors in Vermont and many of the smaller towns would be absolutely unable to obtain a physician in time of need. As you all know, the medical department of the University, in order to be kept in Class A of the medical schools of the country, has been obliged to raise its standard, requiring one full year of an academic course, as a requisite for admission. This has already caused a marked reduction in the number of entering students and it will be some years before the enrollment of previous years can be regained, so that the income of the college will be much reduced. This being the case, it seems to me, that it is one of our duties, having the welfare and lives of the people of Vermont in our care, to use what influence we have with the members of the present legislature to have it give liberal assistance to the Vermont medical college, in this, her hour of need. The country needs, even now, more well trained medical men and no matter how much the spread of infectious diseases may be curtailed, there will not be too many doctors. There is more danger that there will not be enough to give the people proper care and keep them out of the hands of the various cults that infest the country.

TUBAL, OVARIAN AND TUBO-OVARIAN HERNIAS.

BY

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In the female, the frequency of hernias and especially of hernias of the internal genitalia has been and is still underestimated. Owing to the lack of study heretofore given to this clinical entity, hernias of the uterine adnexae are often overlooked, not uncommonly misdiagnosed, and therefore subjected to injudicious treatment; harmful alike to the individual and to the hernial contents, prejudicial alike to the patient's general well-being and to her reproductive powers. Impressed by the clinical importance of the condition and surprised at the insufficient consideration given to the subject in even the most modern gynecological and surgical text books, I have collected the following data which may prove of service to some of my professional colleagues as well as to future investigators of the subject. Knowledge of the occurrence and familiarity with the symptomatology of a clinical condition lead to its more frequent and more timely recognition.

Soon after beginning the consideration of the subject, we became convinced that deductions and conclusions to be valuable, should be based solely upon the study of cases whose accuracy of diagnosis is self-evident. Therefore in the preparation of this paper we have only considered cases in which the hernial contents were demonstrated at the dissecting, autopsy or operating table.

We have conformed to the nomenclature in actual use; however, to better insure precision of classification and a more intelligent discussion of the subject, we define, at times, perhaps needlessly, the terms employed. The word hernia signifies the permanent or temporary protrusion of one or more viscera from their normal situation through a normal or abnormal opening in the walls of the cavity within which they are contained. It implies the existence of a hernial ring, of a hernial sac, of hernial sac contents and of sac coverings. In the hernias discussed in this article, the protruding organ was always either an ovary, an oviduct, or Fallopian tube and an ovary. In some cases, as as-

"A syringe of antitoxin is more efficacious in a case of diphtheria than a month of nursing," and "giving antitoxin is as certain in its results as pouring water on a fire, and it is just as important to do it early."—*Virginia Med. Semi-Monthly*.

sociated hernia contents we find omentum, a segment of the alimentary canal, a part of the urinary bladder, a rudimentary uterine horn, or the entire uterus, be the latter organ rudimentary, infantile, or of normal development. The tube or ovary or both in part or in their entirety may be herniated. All the hernias herein considered are external hernias; that is, their outermost overlying sacular covering is skin, and each, after reaching a certain stage of development gives rise to a more or less visible, more or less palpable external swelling in the inguinal, femoral, ventral, obturator or ischiadic regions, depending upon the anatomical location of the hernia. Internal hernias, that is hernias in which one or more loops of intestine find their way into pouches or recesses in the posterior peritoneal wall, and diaphragmatic hernias, be the latter true or false, congenital or acquired, constitute other chapters of surgery.

The escape of the uterine appendages from their normal situation may take place through any of the weak spots or openings of the lower abdominal or abdomino-pelvic cavities. A hernia originating either in the internal or in the external inguinal fossae and escaping above Poupart's ligament is an inguinal hernia; if escaping beneath the same ligament, it emerges through the crural canal and the saphenous opening, it is a femoral hernia; if through the obturator canal, an obturator hernia; if along the course of the gluteal or sciatic nerves and vessels, emerging almost always above, very infrequently below the pyriformis muscle, very rarely through the lesser sacro-sciatic foramen, a gluteal hernia; if through an operative scar in the abdominal wall, a post-operative hernia.

Though sanctioned by long usage, the classifying of hernias into congenital and acquired is, at times, misleading. It is misleading because it is practically impossible to determine the congenital or acquired nature of many hernias. Furthermore, the term congenital hernia, as now used, does not imply in the female that the hernia was present at birth, as it is also applied to hernias whose post-natal development is due to predisposing conditions of congenital origin; developmental defects, persistence of transitory embryonal or fetal states which, owing to their non-disappearance with growth, permit the occurrence of outward visceral displacements. Some hernias are con-

genital in the truest sense of the word; they are complete at birth, hernial contents being then present. In most of the so-called congenital hernias, the sac only is existent at birth; in an acquired hernia, the sac is always of post-natal development, and in all but hernias *par glissement* is entirely derived from the parietal peritoneum. Congenital hernial sacs result from the want of closure of peritoneal processes, such as the *processus vaginalis peritonei* in the male, the canal of Nuck in the female, etc., normally present in the fetus. Congenital hernias may appear at any period of life.

Orifices for the transmission of vessels and ducts are normally present in the muscular and aponeurotic layers of the abdominal walls. An acquired hernia is formed by the gradual or sudden escape through these orifices, pathologically widened, of viscera normally contained within the abdominal cavity; the viscera in their passage through and beyond the abdominal wall create paths of escape for themselves by bulging and pushing forward the parietal peritoneum.

In many cases, the congenital or acquired nature of the hernia is either too vaguely stated or is left unmentioned. Femoral hernia seldom occurs before adult life.

Tubal, ovarian and tubo-ovarian hernias occur in the colored, and in the white race. Commonly, the condition is unilateral; infrequently, it is bilateral. When bilateral, the hernias may or may not be developed to the same degree on both sides. The bilaterality may date from birth; may be acquired. In the latter case, the hernias may from the first have been bilateral or an interval of time of shorter or greater length may have intervened between the appearance of the two hernias. In Broca's case, when patient was eight months old, the right inguinal hernia appeared, but the left inguinal hernia did not become manifest before the patient was four years of age. All the bilateral tubal, ovarian, or tubo-ovarian hernias recorded in the medical literature of the last twenty years are of the inguinal variety. This is in accord with a well-known fact that, in both sexes, double femoral hernias are less frequent than double inguinal hernias.

A tubal, an ovarian or a tubo-ovarian hernia may coexist with one or more hernias of other organs. Multiple hernias are not infrequent, the hernias present being either of the same or of

different types, as two inguinal hernias or one inguinal and one femoral hernia on the same or on opposite sides of the body.

The hernias which we have under consideration may or may not be associated with non-development, malformation or absence of the other internal or of some external genitalia. In Martin's (Kossmann) case, a hernia of the left tube and ovary, the uterus was displaced upwards, forwards and to the left by a cyst of the right ovary having the volume of a man's head.

In almost all the cases the operation performed was a herniotomy, and as herniotomy affords little opportunity for direct examination of the pelvic organs, the condition of the non-herniated genitalia was determined in only a few cases.

Hernia is a widespread disease. The relative incidence of hernias of the internal genitalia as to age corresponds to that of hernia in general. In our series, the youngest patient was four weeks old at time of operation. Nicoll operated successfully for ovarian hernia two infants each one and a half months old. The oldest patient operated on was seventy-eight years old. She had a left tubal obturator hernia. Lickley reports a right tubo-ovarian obturator hernia observed in a dissecting room subject who had died of general debility and hemiplegia at the age of eighty-seven years. In many cases, the age is not stated. The age given by most authors corresponds to the age of the patient at the time of operation and not to the age at which the hernia first appeared.

The study of the reported cases demonstrates:

a. The frequency of hernias during the first year of life.

b. The rarity of the condition from the first to the fifteenth year of life.

c. The noticeable progressive increase in the number of hernias observed from the fifteenth year on, the maximal frequency being seen during the fourth decade of life.

d. After the fortieth year, there is a decline of the number of hernias; they become relatively rare as the extremes of life are approached.

During the child-bearing period, hernias of either or of both uterine appendages have been observed in nulliparae, in primiparae and in multiparae.

ETIOLOGY.

The predisposing and exciting causes of tubal, ovarian and tubo-ovarian hernias are shown by the analysis of the collected cases to be the same as those of other hernias in the female. The persistence of the canal of Nuck is an etiological factor of the greatest significance in the causation of inguinal hernias. The canal of Nuck, the homologous of the processus vaginalis peritonei in the male, is a peritoneal diverticulum accompanying and adhering intimately to the round ligament, descending in some cases as far as the insertion of that ligament in the labium majus. This peritoneal process whose dates of origin and disappearance are not accurately known, is usually found completely obliterated at birth, it may close after birth; it may even persist throughout life. When the canal of Nuck is only partially or completely unobliterated, it forms a potential hernial sac and is conceded to be the most important congenital predisposing cause to inguinal hernia formation. It is a matter of common knowledge that preformed sacs are not of infrequent occurrence in the inguinal region. They have been found in other hernial regions. A sudden or forcible increase in intra-abdominal pressure, such as can be determined by muscular effort, by a misstep in an attempt to save one's self from falling, can lead to hernia formation by causing the irruption in a preformed sac of a tube, an ovary or a tube and ovary. As during infancy, the internal genitalia can neither be displaced by their physiological activity which is nil, nor by the development of pelvic tumors (rare during early childhood), nor by muscular effort, it follows that hernias of the uterine appendages, at that period of life, are due to such congenital anatomical defects as facilitate tubal, ovarian or tubo-ovarian displacement.

Though, as an etiological factor in the production of hernias, the existence of hereditary predisposition is denied by some authors, to us, the influence of heredity appears positive. Hernia being a malformation often due to developmental arrest, such as non or incomplete obliteration of the processus vaginalis peritonei, non-obliteration of umbilical ring, etc., it is subject to hereditary transmission. It is reasonable to assume that like

structural characteristics beget a like predisposition and a like resistance to hernia development. Among other etiological factors should be mentioned:

1. All conditions associated with increased mobility of the uterine appendages:

a. Lengthening of the broad ligaments consecutive to repeated pregnancies. Owing to its loose attachment to the broad ligament, the position of the ovary is easily affected by the physiological or pathological movements and displacements of the pelvic organs.

b. Pathological relaxation of the ligaments due to puerperal sub-involution. As a cause of the various uterine displacements, pregnancy is an important factor.

c. Abnormal length of the broad, ovarian and infundibulo-pelvic ligaments. Lockwood and others look upon abnormal length of the mesentery of the herniated organ as the chief cause of ovarian hernias. The opinion that lengthening and undue relaxation of the infundibulo-pelvic and ovarian ligaments are responsible for many hernias of the uterine appendages, has been expressed by a number of observers.

d. Relaxation of the other tubal, ovarian and uterine ligaments. Pelvic tumors, uterine fibroids and other pathological states associated with marked increase in the volume of the uterus, not infrequently, determine a relaxation of the infundibulo-pelvic ligament.

2. All conditions that tend to increase the intra-abdominal pressure.

a. Sudden increase of the intra-abdominal pressure leads to hernia formation by overcoming the resistance offered by one or another of the weak points of the abdominal wall. Sudden increase of the intra-abdominal pressure may lead to the irruption of a tube, ovary or tube and ovary in the sac of an old enterocele.

b. Occupations necessitating repeated muscular efforts associated with increased intra-abdominal tension, as the lifting or pushing of heavy weights, etc.

c. Physiological or pathological states which distend the abdominal cavity, which stretch the abdominal parietes and widen the orifices normally present in the muscular and aponeurotic layers of the abdominal wall. Enteroptosis, obesity, abdominal tumors, ascites, pregnancy, etc., can be regarded as predisposing and exciting causes to hernia production.

Pregnancy is by far the most important of all the conditions that increase intra-abdominal tension. Hernias are of far more frequent occurrence in women that have borne children than in those who have remained sterile. Gestation acts in various ways. As it progresses, the position of the internal genitalia is changed and uterus, tubes and ovaries ascend above the pelvic strait. Pregnancy increases the mobility of the uterine appendages, distends, weakens and attenuates the abdominal parietes; it stretches, widens and dilates the hernial orifices and abnormally lengthens the broad ligament. Gestation further predisposes to hernia formation by loosening the subperitoneal connective tissue, relaxing the mesenteric and other means of visceral fixation and altering the intra-abdominal capacity. The expulsive efforts of delivery also exert an undeniable etiological influence in hernia formation.

3. All conditions which weaken the abdominal wall. A hernia can occur wherever the parietal peritoneum is not sufficiently supported by the transversalis fascia and the other structures of the abdominal wall.

a. Acute or chronic diseases debilitating the organism, especially such as cause great emaciation. Emaciation weakens the resistance of the fibrous layers, dilates the orifices in the abdominal aponeuroses, rarifies the pelvic connective tissue, facilitates the gliding of the parietal peritoneum upon the underlying tissue and thus favors the formation of a hernial sac.

b. Obesity weakens the abdominal wall and increases the intra-abdominal pressure. The fat present in the abdominal wall, in the omental, mesenteric and other peritoneal folds explains why obesity plays such a role in hernia development. Pre-peritoneal lipomata by exerting traction on the peritoneum and by insinuating themselves through gaps in the abdominal wall can lead to the formation of peritoneal diverticula. These diverticula once constituted, are potential hernial sacs. Not infrequently the bulk of the hernial swelling is made up of a lipoma behind which the peritoneum is drawn outward in a funnel-shaped manner.

c. Traumatism. Most often the traumatism does not cause the hernia, but only reveals its existence. Among traumatisms must be mentioned abdominal operations and their sequelae. Pathologic adhesion of viscera or omentum to

the anterior parietal peritoneal wall near a hernial opening may act as a predisposing cause.

d. Enterocoeles, epiploceles and entero-epiploceles. Garrigues is of the opinion that in one of Broca's cases and also in Poirier's case, the herniated uterine adnexa or adnexae had glided into enterocoele sacs.

e. Feeble development or atrophy of the aponeurosis of the transversalis muscle and of the conjoined tendon. This factor is an important one in direct inguinal hernia.

f. A shortening of the round ligament of the hernial side is not rare. Authors are not agreed as to whether this shortening is primary or secondary.

HERNIAL SACS.

Congenital hernias have sacs of pro-natal formation. That the canal of Nuck remains patent in many cases long after birth, even into adult life, has been proven by a number of investigators. Acquired hernial sacs are formed of parietal peritoneum forced by intra-abdominal pressure through some congenital or acquired defect in the abdominal walls.

In the female the following anatomical characteristics are strongly suggestive of the congenital sac: Great vascularity, absence of subserous fat, folds, valvular or diaphragmatic constrictions, cyst-formations, scar-like induration of the wall, etc. In congenital inguinal hernias, it is also noted that the round ligament is intimately adherent to the sac.

As we see, the sac results from the bulging outward of the parietal peritoneum without solution of continuity. It consists of a neck, body and fundus. The neck, the portion of the sac situated within the hernial orifice; the body, the main portion of the protrusion and the fundus, the lowest part of the sac. Of these three, the neck is the most important. It is through it that the general peritoneal cavity communicates with the hernial sac cavity. It may be the site of constriction. The fibrous envelope of the sac is due to the condensation of the fibrous layers which the hernia in developing pushes forward.

The internal surface of the sac, whether the latter be congenital or acquired, has all the peculiarities of serous membranes. When exposed to irritation, pressure, circulatory disturbances

or when inflamed, it shows a tendency to secrete an excess of serum, to form exudates and to undergo degenerative structural changes. Irreducible hernias are most frequently due to an adhesive inflammation involving either the sac or the sac and its contents. The opposing saccular surfaces may adhere and may, through the organization of inflammatory deposits, become united. Inflammation of a hernial sac may lead to any of the following conditions: Formation of inflammatory bands within the sac cavity, hydrocele of a hernial sac, partial or complete obliteration of the sac, irreducibility of hernial contents previously reducible, etc.

In the female, encysted inguinal hernias result from partial closure of the canal of Nuck, the peripheral portion of which is transformed into a cyst in which a developing hernia prolapses or from the sinking of a hernia in a pre-existing hernial hydrocele.

There is really no sacless hernia; but the herniated viscus may be an organ only partially covered with peritoneum: For example, the cecum in about 7 per cent of individuals is covered with peritoneum only on its anterior and lateral surfaces, while posteriorly it is loosely attached by connective tissue to the posterior abdominal wall.

In sliding hernias, the anterior and lateral portions of the sac are, as in ordinary hernias, derived from the parietal peritoneum, while the remaining portion is formed by the anterior surface of the herniated cecum, sigmoid, bladder or Fallopian tube.

Hernial sacs may be dome-shaped, cylindrical, digitiform, sacculated or irregular; may show constrictions with intervening dilated portions. They enlarge at the expense of the parietal peritoneum, that membrane being capable of very great gradual extension. Most femoral sacs are small and not infrequently are embedded in a mass of fat. The sac in recent hernias may be very thin. In children and in young infants, sac is extremely thin.

HERNIAL FLUID.

The reporters not infrequently state that fluid of some nature or other was present in the hernial sac. The fluid may be muco-purulent, serous, sanious, purulent or fetid in character.

HERNIAL SAC-CONTENTS.

TUBAL HERNIAS.

The tube, either in part or in its entirety, may be the sole content of the hernial sac. In Dor's case, only a few centimeters of abdominal end of tube were in hernial sac; in Gladstone's case, only the middle portion; in Kousmine's case, only the external half; in Lejars' case, a tube and a portion of the urinary bladder; in Maydl's case, a tube and the appendix vermiformis (in this case, tube had slipped into the sac only by its middle portion which was bent into a loop so that the free end remaining in the abdomen was the only part strangulated); in Planson's case, the herniated portion of the tube was its middle portion (both, uterine and abdominal, ends were in the abdominal cavity).

As associated hernial contents, a portion of the urinary bladder, normal intestine, gangrenous intestine and omentum were noted.

The herniated tube may be normal and free; may be adherent to sac; may be strangulated; may show inflammatory lesions; may be cystic; may be the seat of a pyosalpinx.

OVARIAN HERNIAS.

The ovary may be the only content of the hernial sac; or may be associated with a cystic parovarium, with omentum, with intestine or with a rudimentary uterus. The herniated ovary is reported as being in some cases normal, in others enlarged to twice its normal size, infiltrated with blood, the seat of a large hematoma, adherent to sac, cystic, to have presented areas of suppuration, to have shown gangrenous changes.

TUBO-OVARIAN HERNIAS.

Hernias of the tube and ovary constitute the largest number of hernias of the uterine appendages. As associated hernial contents may be mentioned: Urinary bladder, Meckel's diverticulum, the appendix vermiformis, omentum, intestine and the uterus.

We know of only two cases in which gestation occurred in an inguinal hernial sac; both were tubal pregnancies. In Jordan's case, the ovum laid among loops of gut at the bottom of the hernial sac. The other case was operated on by Dr. Carl Beck of this city.

The herniated organs may be normal, may show slight or marked pathological changes. The displacement of a tube or of an ovary into a hernial sac is unfavorable to its anatomical and functional integrity. In a hernial sac, these organs are exposed to repeated slight traumas and to circulatory disturbances. The herniated ovary frequently undergoes cystic changes; may show atrophy; may show enlargement; may be undersized.

The herniated tube may be the seat of suppurative salpingitis, of abscess, of tuberculosis; may be adherent to sac by an inflammatory band.

We must not forget to state that a tube and ovary present in a hernial sac do not always have the same reciprocal relation that they have in the abdominal cavity, and that the pathological changes which they show may antedate their displacement into a hernial sac.

REDUCIBLE HERNIAS.

In reducible hernias, and, at first, practically all hernias are reducible, the hernial contents either return spontaneously into the abdominal cavity when the patient assumes the recumbent posture or they can be manipulated back, with more or less difficulty, but without a cutting-operation, into the cavity from which they escaped. Even in reducible hernias, the sac early contracts adhesions to neighboring tissues and becomes irreducible. The terms reducibility, irreducibility, torsion and strangulation have reference only to the hernial contents and not to the sac.

Reposition, spontaneous or manual, may be temporary, may be permanent. Many reducible hernias reappear as soon as the standing posture is assumed; others to reprotude, require more or less muscular effort on the part of the patient.

IRREDUCIBLE HERNIAS.

When the contents of a hernial sac cannot in their entirety be manipulated back into the abdominal cavity, the hernia is said to be irreducible, provided that there is not any or but a very slight interference with the blood supply of the herniated organ or organs, and that there is no disturbance of function. If irreducibility and both functional and circulatory disturb-

ances are present, the hernia is designated as strangulated. Irreducibility, partial or complete, predisposes to complications of a serious nature: Inflammation, incarceration, strangulation and torsion.

The irreducibility of hernias is dependent upon one or more of the following factors:

a. Difficulties incident to manipulating a small movable body such as the ovary through a small opening.

b. Relative narrowness of the hernial canal: Femoral, inguinal, etc.

c. Sudden increase in size of hernia resulting from some unusual muscular effort.

d. Changes in the hernial contents: Increase in bulk from deposit of fat, from cyst formation in mesentery, in omentum, from inflammatory or neoplastic changes.

e. Adhesions of inflammatory origin:

1. Between sac and contents.

2. Between the different contents.

f. Large volume of the hernia.

g. Sliding hernias (*hernies par glissement*).

The irreducibility of a hernia of the uterine appendages is due in some cases to the presence as associated hernial contents of the urinary bladder, of the cecum, or of the sigmoid. In other cases, the irreducibility is due to the fact that the layers of the broad ligament, as they leave the Fallopian tube, enter into the formation of the hernial sac.

STRANGULATED HERNIAS.

All strangulated hernias are irreducible. In addition to irreducibility, they present a constriction of the hernial contents of such a degree as to seriously interfere with the circulation of the blood in the herniated organ or organs. "If the pedicle of a tumor is tied off or if a finger is surrounded tightly by a string, the parts distal to the ligature do not become inflamed; stasis and gangrene result." (Alberts). The same primary changes occur in the contents of a strangulated hernia; the inflammatory changes are secondary to the circulatory disturbances. There is interference first with the venous circulation; then with the arterial. As a result of this interference with the circulation, we have a serous exudate the amount of which depends upon the degree and duration of the strangulation and also upon the extent of the secreting surface. The sequence of

events is as follows: Congestion, stasis, serous exudation, then inflammatory phenomena and gangrene. Strangulation of a herniated tube or ovary is not as dangerous a complication as strangulation of a herniated loop of intestine.

Strangulated inguinal hernias may be congenital or acquired. Strangulation can occur at any age, irrespective of type of hernia or of hernial contents.

As hernial contents can be mentioned the following organs: Fallopian tube, ovary, tube and ovary, tube and a portion of the urinary bladder, tube and a loop of small intestine, ovary and intestine, tube, ovary, intestine and omentum, uterus and adnexae of one side, loop of intestine, uterus and left adnexa.

The symptoms given by the strangulated inguinal hernias are those of inflamed hernias. Symptoms of intestinal obstruction may also be present.

TORSION OF THE PEDICLE.

This complication, peculiar to ovarian and to tubo-ovarian hernias, is not of unusual occurrence. As far as we have been able to determine, torsion of the pedicle has been observed only in irreducible congenital hernias of the inguinal type.

The two youngest patients were four and eleven weeks old respectively; the oldest, a poorly nourished child, was fourteen months old. All the other patients were less than one year old. The right and left sides are involved with about the same frequency. The occurrence of this accident is favored by the mobility of the ovary and the slenderness, at this period of life, of the pedicle of the herniated organ or organs.

The pedicle, usually composed of the Fallopian tube, broad ligament and contained vessels, may have made a half-turn upon itself; may be twisted twice, thrice or several times upon its axis. The pedicle may be twisted in any part of its course.

If unrelieved, torsion of the pedicle determines in the hernial contents anatomical changes similar to those caused by strangulation. The impeded return of blood in the veins leads to congestion and swelling of the organ or organs below the twist. There are noticed in hernial contents, the following circulatory disturbances: Congestion, stasis, thrombosis, vascular rupture (ovary seat of large hematoma)

and interstitial hemorrhages. The interstitial hemorrhages and the serous transudates lead to tissue dissociation.

In torsion of the pedicle, the amount, odor and color of the hernial fluid depends upon the tightness and duration of the twist and upon the extent of the gangrenous changes. The fluid present in the hernial sac may be serous, may be blood-stained, dark colored, reddish-brown.

Torsion of the pedicle gives rise to symptoms somewhat analogous to those of strangulated intestinal or omental hernias. In fact, the condition has frequently been diagnosed a strangulated intestinal hernia.

POST-OPERATIVE VENTRAL HERNIAS OR HERNIAS IN ABDOMINAL SCARS.

The protrusion of parietal peritoneum with stretching of the cicatrix over it, may occur after any operative or other penetrating wound of the abdominal wall, except those of very small dimensions.

Though these hernias may occur in any part of the abdominal wall, they are located almost always either in the median line or in the region of the appendix. Owing to the employment of improved operative technique, and to the more rigid observance of the requirements of surgical asepsis, post-operative hernias are decreasing in frequency.

There are two types: In one, there is a uniform distension of the cicatricial tissue producing a condition somewhat analogous to separation of the recti muscles; in the other, the hernia is due to the giving way of weaker portions of the scar.

The main predisposing etiological factors of post-operative hernias are:

1. Long incisions.
2. Faulty closure of abdominal wounds.
3. Operations for suppurative processes which of themselves require, for healing, that the abdominal wound be maintained open for a considerable period of time.
4. Drainage.
5. Disturbed wound healing—imperfect asepsis—suppuration.
6. Failure to wear for some months after recovery from operation, a well fitting abdominal binder.
7. Too early pressure upon the scar.
8. Pregnancy.

The only ventral hernia of the uterine appendages which we could find is a tubo-ovarian hernia in an abdominal scar resulting from the opening and prolonged drainage, ten years previously, of an appendiceal abscess. The scar was about six inches in length. Cullen, to cure this case, resected the entire cicatrix, loosened the adhesions of the omentum to the ovary; then removed the herniated ovary and hydrosalpinx and followed this by closure of the abdominal wound without drainage. A satisfactory recovery was obtained. The sac was incomplete for a considerable distance; the ovary lay directly beneath the skin.

GLUTEAL, SCIATIC OR ISCHIADIC HERNIAS.

This is a very uncommon condition; in the medical literature of the last one hundred and fifty years, only twenty-three cases are recorded (E. Koepl). This class of hernias escape from the abdominal cavity by way of either the greater or the lesser sacro-sciatic foramen. There are three varieties: The supra-pyiformis, the infra-pyiformis and the spino-tuberosa. These hernias may be congenital or acquired, may occur on either side of the body and are subject to all the complications of hernia in general. Thirteen of the cases on record were observed in women. Schilbach's case is the only one on record making its exit through the lesser sacro-sciatic foramen. The diagnosis was first made at the autopsy table. During life, there had been genital hemorrhage and symptoms of ileus. At the post-mortem examination, the ovary was found in the hernial sac, the tube and broad ligament being caught in the hernial ring.

We found only two cases of ischiadic hernia of the uterine appendages. Both were acquired hernias of the right tube and ovary, occurring in multiparous patients. Both were subjected to operation and recovered.

Woelfler's case is interesting in that it was successfully subjected to an operation for radical cure. The hernia, an infra-pyiformis one, emerged like all others of its type along the lower border of the pyiformis muscle in close relation to the internal pudic, inferior gluteal and sciatic nerves and vessels. For the previous two years, the patient had had attacks of pain radiating along the course of the sciatic nerve, and abdominal suffering associated with nausea and, at times, vomiting. In the right gluteal region, there could be palpated below

the muscles, a globular, fluctuating, fist-sized, non-reducible swelling from which, at one time, there was removed by aspiration fifty cubic centimeters and at another time five hundred cubic centimeters of dark reddish fluid containing much albumen, red blood corpuscles and leucocytes in crystals.

The following operation was performed: An eight centimeter long incision, parallel to the course of the fibres of the gluteus maximus, was made over the summit of the hernial swelling. The muscle fibres were separated; the hernial sac exposed, isolated and opened. It contained the ovary and the end of the tube. The sac contents were ablated; the resulting stump reduced in the abdominal cavity. The sac was then ligated and cut off; after which, the operator closed the hernial orifice by approximating the pyriformis muscle to the lesser sacro-sciatic ligament.

OBTURATOR HERNIAS.

In obturator hernias, the herniated viscus or viscera, always escape from the abdominal cavity by way of the obturator or sub-pubic canal. These hernias, though less infrequent than ischiadic hernias, are nevertheless uncommon; not more than two hundred cases are recorded in the medical literature.

They are usually small; may be unilateral or bilateral (are more frequent on the right side); may coexist with hernias of a different type. They may be reducible, irreducible or strangulated.

Picqué and Poirier recognize three main anatomical varieties of obturator hernia. In the first variety, the most common, the hernia follows the entire course of the obturator canal, appearing as a swelling in front of the external orifice of this canal. In the second variety the hernia escapes from the abdominal cavity through the pelvic orifice of the sub-pubic canal, but following the course of the inferior division of the obturator nerve, does not traverse the canal's entire length, and makes its exit by passing between the superior and middle bunches of the obturator and externus muscle. In the third variety, the hernial protrusion also enters the pelvic orifice of the obturator canal, but becomes lodged between the obturator membrane and the obturator externus muscle.

Objective symptoms are frequently absent. When a swelling is visible and palpable, it is usually of small volume and is located in the most internal portion of Scarpa's triangle, somewhat resembling a femoral protrusion. It is, however, non-pediculated and does not extend in the direction of the crural canal. In suspected cases, one should always determine whether there is increased pain when the obturator externus is put under tension—abduction and rotation inward of the thigh.

Vaginal examination is important. The internal orifice of the sub-pubic canal is accessible to the vaginal hand.

Two routes are advised for the treatment of obturator hernias: The abdominal route and the obturator route. In the obturator route, the following steps are employed:

1. An incision eight centimeters long is made about three and a half centimeters internal and parallel to the femoral artery.

2. Separate with a grooved sound the internal border of the pectineus muscle from the outer border of the adductor brevis and adductor longus muscles.

3. If necessary, divide a few of the fibres of the pectineus muscle close to their insertion on the pubic bone, so as to facilitate digital exploration of the obturator region.

4. Expose, isolate and open sac; determine its relation to the obturator nerve and vessels, after which nick constricting point if hernia be strangulated and reduce or ablate hernial contents.

5. Closure of wound.

FEMORAL HERNIAS.

Hernias which in their escape from the abdominal cavity pass between Poupart's ligament and the horizontal ramus of the pubis and sooner or later protrude in Scarpa's triangle, are called femoral hernias. Common femoral hernias escape from the abdomen through an orifice bounded anteriorly by the most internal portion of Poupart's ligament; posteriorly, by the horizontal ramus of the pubis; externally by femoral vein and the sheath of the femoral vessels; internally, by Gimbernat's ligament. They descend along the most internal compartment of the femoral sheath and ultimately emerge through the saphenous opening. These hernias are contiguous to the femoral vein which al-

ways lies external, and they carry along in their progress through the crural canal a mass of condensed areolar tissue, known as the septum crurale. They show a greater tendency to expand upward than downward because the cribriform fascia is less adherent to the upper margin of the saphenous opening.

The small number (sixteen cases) of femoral hernias which we were able to collect, as compared to inguinal hernias, confirms the now accepted but previously disputed fact that, in the female, inguinal hernias are of more frequent occurrence than femoral hernias. All these femoral hernias were of the acquired type; it is known that congenital femoral hernias are pathological rarities. A femoral hernia is essentially a hernia of adult life. Either side of the body may be involved. The tendency to double femoral hernia is less than that to double inguinal hernia. All femoral hernias irrespective of contents or of sex of bearer are of more frequent occurrence on the right side (Wernher, Macready, Berger).

The tubal hernias contained the oviduct either in part or in its entirety, alone or associated with intestine, omentum or both. The presence of the appendix vermiformis in a femoral hernial sac is rare. Coley states that in 2,200 cases of hernia operated upon from 1890 to March, 1908, in the Hospital for Ruptured and Crippled, the appendix vermiformis alone was found in ten, the cecum and appendix together in seven. In not a single one of Coley's cases was the appendix found in a femoral hernial sac (W. B. Coley, *Keen's Surgery*, 1908, vol. 1, p. 78).

These hernias may be reducible, irreducible or strangulated. Strangulation can occur at any one of the following sites:

- a. Internal femoral ring.
- b. Margin of Gimbernat's ligament.
- c. Margin of the saphenous opening.
- d. Meshes of the cribriform fascia.
- e. Irregularities in the hernial sac.

The following operations were performed:

- a. Amputation of fimbriated end of tube.
- b. Incision of hernial swelling and creation of an artificial anus.
- c. Ablation of tube.
- d. Ablation of ovary.
- e. Ablation of tube and ovary.
- f. Excision of hernial sac and return of tube to abdominal cavity.

g. Removed tube and ovary and resected gangrenous intestine.

Truss treatment of femoral hernia is notoriously unsatisfactory and is considered as being only palliative and not at all curative. In femoral hernias, on account of motions of thigh, it is difficult to apply, and especially to maintain pad-pressure in a position conducive to closure of the hernial openings.

Coley whose clinical experience with the treatment and cure of hernia is greater than that of any other living American surgeon, supplements to high ligation and ablation of the hernial sac with the thorough removal of all extra-peritoneal fat of the following step: He introduces a purse-string suture of kangaroo tendon in such a way as to bring the floor of the femoral canal in contact with the roof. Coley states: "The results of this purse-string method have been so nearly ideal that there is seldom need of resorting to more difficult and complicated methods."

INGUINAL HERNIAS.

Hernias which escape from the abdominal cavity, either through the internal or external inguinal fossae, and which emerge upon the surface when complete by way of the external abdominal ring, are known as inguinal hernias. Of all hernias, they are the ones most frequently noted in the female.

Inguinal hernias of the uterine adnexae may be complete or incomplete. In the incomplete form, the hernia has not escaped beyond the external abdominal ring. Inguinal hernias may be right-sided or left-sided. They may be unilateral or bilateral; as previously stated, all the bilateral hernias of the uterine adnexae, tubal, ovarian or tubo-ovarian, recorded in the medical literature of the last twenty years, were of the inguinal variety. They may be reducible or irreducible. They may be strangulated or the seat of torsion. This last accident has only been observed in congenital inguinal hernias, the contents of which were irreducible.

Of the uncommon types of inguinal hernias only several could be found. There was one direct hernia. This, especially in the female, is an uncommon form. The main characteristics of direct hernias are that the protrusion takes place by way of the internal inguinal fossa, that the neck of the sac is always to the

inner side of the deep epigastric vessels and, in the female, that the round ligament is distinct from and to the outer side of the sac. Coley says that he has only seen one case of direct hernia in the female sex. We found three interstitial or intra-parietal hernias. All the other inguinal hernias were of the ordinary type, that is, external or indirect or oblique. An ordinary or oblique inguinal hernia in its course through the inguinal canal (narrower in the female than in the male) is accompanied by the round ligament; as it escapes from the external abdominal ring, it appears in the upper portion of the labium majus, in which it descends to a greater or less extent.

Inguinal hernias vary in size and in form. They may be almond-shaped, ovoid, sausage-shaped, pear-shaped, pyriform, globular or other forms too numerous to mention.

SYMPTOMS AND DIAGNOSIS.

Hernias of the uterine appendages present all the symptoms common to hernias in general. In some hernias of slow and gradual development, owing to the absence of symptoms, not uncommonly the patient ignores that he has a rupture. Some cases do not give rise to any symptoms; some give rise to very slight disturbances; many remain painless until the appearance of the menses and thus are first recognized at about the age of puberty. Pain may be absent during the entire course of a slowly developing hernia. In other cases, the hernial swelling may be so small as to be completely overlooked by a careless observer. Inspection, palpation and percussion of the hernial regions are routine steps in the examination. After having demonstrated the presence of a hernia, the operator has to determine the type of hernia present and the nature of its contents. The existence of other malformations is to be ascertained as they may be of such a nature as to partially justify the sacrifice of health herniated organs.

Clinicians usually do not experience any difficulty in diagnosing a hernia; at times, they are in doubt as to the type of the hernia present in the case at hand. In fatty individuals the exact position of the hernial sac neck is difficult to determine. Obturator hernias are rare, and are found internal to the femoral opening; in

femoral hernias, the swelling is found to be almost if not entirely below a line extending from the anterior superior iliac spine to the pubic spine.

In the female, the tumor-mass caused by a complete oblique inguinal hernia, even of a moderate size, will cause a swelling extending into the labium majus.

In some hernias of the uterine appendages, the patients complain of a feeling of weight and discomfort. The symptom "tenderness on pressure" we find frequently reported. Some of these hernias are painless, some are so painful as to interfere very much with the patients' well-being. Impulse on coughing is not infrequently noted. It is not, however, a constant symptom present; it may be absent. Menstrual disturbances are recorded.

If an oblique inguinal hernia be incomplete, that is, if it does not extend beyond the inguinal canal, it may be mistakenly diagnosed tumor of the round ligament, bubo, epiplocele or encysted hydrocele of the canal of Nuck. In tumors of the round ligament, epiploceles, encysted hydroceles of the canal of Nuck, a mistake in diagnosis is not very significant, as in all these conditions one must, to obtain cure, resort to operative treatment and to exposure of the inguinal canal.

TREATMENT.

Six of the reported cases were either autopsytable or dissecting-room discoveries. In some cases, the nature of the operative intervention is not stated. In the other cases, the operators, after performing either a laparotomy or a herniotomy, disposed of the herniated organs either by reducing or removing them entirely or by removing a part and reducing the remainder. In some cases, the reduction of the hernial contents necessitated a preliminary division or a dilatation of the hernial rings, internal or external.

The operative steps employed by the various operators are as follows:

A. Reduced herniated organs back into the abdominal cavity.

- a. After a preliminary herniotomy.
- b. After a preliminary laparotomy.

B. Removed hernial contents.

- a. After the preliminary herniotomy.
- b. After a preliminary laparotomy.

C. Reduced some of the hernial contents and removed the remaining portion.

In two hundred and thirteen operated cases the results are stated: Eleven deaths; two hundred and two recoveries.

We advise that all hernias of the uterine appendages, irrespective of anatomical site or of size or of age of bearer, be subjected to an operation for radical cure:

- a. If the hernia be irreducible.
- b. If the hernia be strangulated.
- c. If the pedicle of the herniated organ or organs be the seat of torsion.

After the age of two years:

- a. If the hernia be bilateral.
- b. If other hernias be co-existent.
- c. When hernia cannot be painlessly, completely and permanently kept reduced.
- d. If organs other than the uterine appendages be also present in the same hernial sac.

e. If the wearing of a hernial truss causes pain or aggravates the symptoms.

f. If the patient has to be subjected to ether or chloroform anesthesia for the performance of an operation of election, double advantage can be taken of this anesthesia, and an operation for the radical cure of the hernia performed.

g. If patient is exposed to pregnancy.

Operation in uncomplicated hernias of the uterine adnexae is no more dangerous than the operation for the radical cure of other hernias. It has practically no mortality. Infants bear hernia operations remarkably well. Broca performed four hundred and fifty operations in children under fifteen years of age with but one death.

The operation which has given the most universal satisfaction in the treatment of inguinal hernias is that devised by Bassini. It has the advantages of safety, simplicity and efficacy.

We advise operators to observe in their operations for inguinal hernia, the following suggestions:

1. Always wear and have the assistants wear rubber gloves.

2. All ligatures and irremovable buried sutures should be of absorbable material. The purpose of sutures is to keep divided tissues in apposition until organic union has been effected. After this has been accomplished, sutures if not absorbed or not removed may

originate irritation, may act as predisposants to inflammation, to sinus formation. We strongly condemn the use of silk for vessel ligation or for buried sutures.

3. Always divide the aponeurosis of the external oblique muscle to an extent sufficient to give a good exposure of the inguinal canal, and of its contents. In the female, the inguinal canal in its normal state and after a hernia operation, in its restored state, should outside of a few arterioles and nerve filaments, contain nothing but the round ligament, a structure much smaller than the spermatic cord. This round ligament comes from the muscular structure of the uterus, it finally becomes lost in the labium majus. In a hernia operation, if not the seat of disease, it should never be sacrificed.

4. Always make a high and careful dissection of the hernial sac from the surrounding tissues and especially from the round ligament to which it is often quite intimately adherent.

5. Always open the sac and determine by direct inspection and palpation the nature and state of the hernial contents.

6. After reduction or ablation of the hernial contents the sac is to be transfixed and ligated as high as possible. Sac is then removed flush with the peritoneal cavity. So as to prevent the occurrence of peritoneal bulging at the internal ring, we are in the habit of anchoring or fixing the stump of the sac about two centimeters above this point. This is effected by needling each end of the ligature and carrying both ends separately and about one centimeter apart upwards in front of the pro-peritoneal fatty cellular tissue and behind the transversalis muscle for about two centimeters. The needles and ligature are then passed from behind forward through the transversalis internal oblique and external oblique muscle, in front of which the ends of the ligature are tied.

7. Never sacrifice the round ligament; it is harmful to the statics of the uterus. Never transplant the round ligament; it is unnecessary. The round ligament is left undisturbed at the bottom of the wound, emerging at the lower angle of the latter; the internal oblique muscle is sutured to the shelving portion of Poupart's ligament; the divided margins of the external oblique aponeurosis are sutured and the skin incision closed. No drainage. After operation, no truss should be worn; a truss does not support the scar, it weakens it.

8. In the female, the internal and external abdominal rings can be closed without detriment to the patient. In direct inguinal hernias, ligation of the deep epigastric artery is at times unavoidable.

In hernias of the uterine appendages, the operator must decide as to whether the hernial contents are to be returned to the abdominal cavity or whether they are to be removed.

As to the herniated tube, ovary or tube and ovary, when normal, it goes without saying that they should be returned, irrespective of patient's age; if adherent to sac-wall or to some hernial content, the adhesions are to be loosened or divided, and if the organ or organs do not show marked structural impairment, they are to be reduced. These organs, when herniated, should be removed, if they be the seat of:

- a. Unavoidable or actual gangrene.
- b. Benign neoplastic disease.
- c. Malignant neoplastic disease.
- d. Voluminous cyst-formation.
- e. Malformation or incomplete development.
- f. Suppurative inflammation.
- g. Hematoma or interstitial ovarian hemorrhage.
- h. Seat of tubal gestation previous or subsequent to rupture of fetal sac.
- i. Tuberculosis limited to or extending beyond the herniated organ.
- j. Distortion beyond recognition.
- k. Such pathological changes as prevent function.
1. The Fallopian tube, the ovary, or the tube and ovary, in part or in their entirety, may be herniated.

2. The herniated tube, ovary or tube and ovary may be the sole content of the hernial sac or there may be present as associated hernial contents one or two or more of the following structures or organs: Meckel's diverticulum, appendix vermiformis, omentum, urinary bladder, intestine (small or large), uterus.

3. Tubal, ovarian and tubo-ovarian hernias are congenital or acquired, unilateral or bilateral; exist alone or in association with one or more other hernias of the same or of dissimilar anatomical types, of the same or of dissimilar clinical characteristics.

4. These hernias, in a small proportion of cases, coexist with malformations, underdevelopment or absence of other internal genitalia

or of some external genitalia: Imperforate vagina, absence of vagina, atresia of tube, unilateral absence of tube, of ovary or of tube and ovary, absence of cervix uteri, rudimentary uterus, absence of uterus, etc.

5. In individuals having a hernia of a tube, an ovary or of a tube and ovary, pathological states of other internal genitalia or of some external genitalia may be present: Vaginitis, ovarian cystoma, uterine fibroid, uterine prolapse and other uterine displacements, etc.

6. These hernias may coexist with pathological states of organs other than the internal or external genitalia: Chronic hydrocephalus, multiple stenosis of intestines, hydronephrosis, etc.; these coexisting pathological states having no relation of cause or effect to the hernial infirmity.

7. Congenital or acquired hernias of the tube, ovary or tube and ovary, may develop at any period of life. These hernias have been observed in nulliparae, in primiparae and in multiparae. No age is exempt. No race is immune.

8. According to their anatomical site, hernias of the uterine appendages are designated as post-operative or ventral, gluteal, sciatic or ischiadic, obturator, femoral and inguinal.

9. The tube, the ovary or the tube and ovary may be present alone or in association with other organs in the sac of any variety of gluteal, obturator, femoral or inguinal hernias.

10. Clinically, these hernias are reducible, irreducible, non-inflamed, inflamed, strangulated or their pedicle may be the seat of torsion.

11. Torsion of the pedicle of a herniated ovary or of a tube and ovary, an accident peculiar to, and not infrequent in, hernias of the uterine appendages, gives the same clinical symptoms and determines the same anatomical changes in the herniated organs as are observed in the strangulation of hernial contents at one or another or more points.

12. We were able to collect eight times as many hernias of the inguinal type as of all the other hernial types put together.

13. Tubal, ovarian and tubo-ovarian inguinal hernias are recent, old or recurrent; are direct, interstitial or intraparietal, indirect or oblique. If indirect or oblique they are either complete or incomplete. A few sliding hernias are on record.

14. All the bilateral tubal, ovarian or tubo-ovarian hernias recorded in the medical literature of the last twenty years were of the inguinal variety. In bilateral hernias, both hernias may or may not show the same degree of development; they may have appeared simultaneously or one may have appeared a shorter or longer time before the other. They may show similar or dissimilar clinical characteristics. When bilateral, one hernia may be irreducible and the other reducible.

15. All the hernias in which the complication "torsion of the pedicle" occurred were irreducible congenital inguinal hernias.

16. All the femoral tubal, ovarian or tubo-ovarian hernias recorded in the medical literature of the last twenty years were of the acquired type and appeared in advanced adult life. "Femoral hernia is essentially a hernia of adult life."

17. Hernias of the uterine appendages, in the absence of anomalies of the other internal genitalia or of the external genitalia, do not prevent conception, do not interfere with gestation, nor unfavorably influence parturition. Pregnancy can occur previous to, during and subsequent to the existence of hernias of this nature.

18. The etiology of hernias of the uterine appendages is that of hernia in general. As main factors should be cited: All conditions that weaken the abdominal wall, all conditions that increase the intra-abdominal pressure and all conditions that increase the mobility of the uterine adnexae. Heredity, pregnancy and the partial or complete persistence of the canal of Nuck are the most important predisposing causes.

19. The herniated organ or organs may be free from all degenerative changes.

20. The herniated organ or organs may be bound to the sac-wall; or to each other; may be the seat of congestion, gangrene, hemorrhage, inflammation, suppuration, tuberculosis (primary or secondary), cystic and neoplastic disease (benign or malignant).

21. The herniated organ may be the seat of gestation.

22. The hernial sac and the herniated adnexa or adnexae may be the seat of an inflammation, suppurative or other in character, which

in progressing by continuity of surface has extended upward from the vagina giving us the following anatomical picture: Vaginitis, endocervicitis, endometritis, salpingitis or pyosalpinx, ovaritis and saccular peritonitis.

23. The hernial sac and the herniated contents may be the seat of an inflammation, suppurative or other in character, which has reached the tube and ovary by way of the parametrial and parasalpingeal connective tissue.

24. Pathological processes originating in the hernial contents may by extension by contiguity of tissue involve the sac and its overlying tissues.

25. The hernial sac and the herniated tube, ovary or tube and ovary can become the seat of pathological processes secondary to disease of the associated hernial contents: Epiploitis, appendicitis, gangrenous gut, etc. Infection spreading by contiguity of surfaces.

26. The herniated tube, ovary or tube and ovary and the associated hernial contents may be free of disease or the uterine adnexae may be normal and pathological changes be present in the associated hernial contents: Appendicitis, gangrenous gut, epiploitis, etc. The associated hernial contents may be normal and the herniated uterine adnexae be the seat of morbid changes.

27. It is at times difficult, at times impossible, to state with absolute precision whether the anatomical changes present in the herniated organ or organs developed previous to or subsequent to the displacement of the tube, ovary or tube and ovary into the hernial sac.

28. Truss-treatment for hernias of the uterine appendages is curative, is often productive of discomfort and interferes with the nutrition and development of the herniated tube or ovary.

29. Women who suffer from any form of hernia should be carefully watched before, during and after their confinement so as to prevent or rather minimize any undue strain upon weak regions of the abdominal wall. These women, at the close of lactation or towards the end of the first year following their confinement, should in the absence of contraindications be subjected to an operation for radical cure of the hernia.

30. In the female, all hernias irrespective of anatomical site, of clinical condition or of nature of contents should, in the absence of a con-

stitutional state contraindicating operations of election, be subjected to an operation for radical cure.

31. Clinical conditions so closely simulating hernias of the uterine appendages that a positive diagnosis without operation appears impossible, should be subjected to operative treatment. Only benefit can be derived from adherence to this rule. A diagnosis is established and a cure is effected.

32. In these hernias as in all other hernias, the ideal time for operation is previous to the development of degenerative or other pathological conditions, states in the herniated organ or organs and previous to the occurrence of any of the various complications incident to hernias.

33. The mortality of operations for the radical cure of hernias, if performed at an opportune time and by a rapid operator competently assisted is nil.

34. To be effective operations for radical cure of hernias must well fulfill two essentials: The suppression of the sac and the strengthening of the area through which the hernia has escaped.

35. In all herniotomies, the sac should be incised and the hernial contents examined.

36. In the female, the inguinal rings are comparatively small. They can, without inconvenience to the patient be closed.

37. The herniated normal tube or ovary should never be sacrificed. These organs have an important rôle and in the absence of marked structural impairment should be returned to the abdominal cavity.

38. The herniated abnormal tube, abnormal ovary or abnormal tube and ovary should be removed if their return to the abdominal cavity is associated with peril, immediate or remote, to the patient or if these organs are so altered anatomically as to be functionally worthless. In sacrificing tissues or organs, the surgeon must be economical.

39. Until we are better informed as to the frequency and nature of true and false hermaphroditism, removed herniated uterine adnexae not having a distinctive structure should be subjected to a microscopical examination. This will avoid mistaking testicular for ovarian tissue and vice versa.

40. In the treatment of strangulated sciatic or gluteal, obturator and femoral hernias of the

uterine appendages in which the hernial sac also contains gangrenous gut, a double operation is almost always indicated: A laparotomy for the repair of the intestinal lesions, and a herniotomy for the radical cure of the hernia.

Originally lupus was considered a skin tuberculosis and as only secondarily invading the air passages. To-day it is looked upon as a disease of the nasal vestibule, the skin lesions when present being a lymphatic metastasis. Its primary lesion is the mamillary or mound-like infiltration beginning in the vestibule from direct infection, later slowly involving the pituitary membrane over the cartilaginous septum, turbinals and floor of the nose, and finally the entire upper respiratory tract. Tumor growths, ulceration, perforation of the cartilaginous septum, scabby formations, adhesions and resulting atresias occur later. Involvements of the tympanic cavities and lacrimal sacs are frequent. The so-called lupus exedens or vorax is probably a secondary infection, usually staphylococci, grafted onto a lupus.—*Medical Times*.

A fibrous polyp must be distinguished from a myxomatous and a malignant condition. It is a benign growth which seldom recurs after operation and often undergoes spontaneous retrogression. It is found most frequently in the male child at about puberty, and frequently gives rise to recurring hemorrhages and tends to infiltrate the surrounding structures. Views as to their origin are that they arise either in the fibrous aponeurosis covering the basioccipital, or from the choanal region, or possibly, from the maxillary antrum.

Blood in the stools may be of the utmost significance and warrants careful study and laboratory examination.

Empyema of childhood usually recovers if the operation for drainage is performed early.—*Medical Times*.

Vermont Medical Monthly.

*A Journal of Review, Reform and Progress in the
Medical Sciences.*

H. C. TINKHAM, M. D., }*Editors.*
B. H. STONE, M. D., }

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BURLINGTON, VT., OCTOBER 15, 1912.

EDITORIAL.

A most distinguished gathering occurred in Washington, during the week ending September 28th, when the International Congress of Hygiene and Demography met there. An international meeting of such world-wide experts as Celli, Sergent, Brieger, Mesnil, Novy, Chantemesse, Nicolle, Landsteiner, Levaditi, Harbitz, Flexner, Romer, Netter, Petersson, and many others equally well known, but too numerous to mention, can hardly be without a far-reaching result, coming just at this time when the determination to place the public health service of our government on a more satisfactory basis is met with such bitter opposition.

This discussion of the latest methods in preventive medicine and public health in a congress met under the sympathetic stimulation of our government and welcomed by its official head, augurs great good. The greatest benefit which has hitherto come from these congresses, is the forcing upon the governments of the world, an efficient legislation, to bear out the recommenda-

tions of the world's experts in preventive medicine and practical public hygiene.

The beginning of the college year again calls our attention to medical education, more particularly because the University of Vermont College of Medicine began its annual session at the same time the other colleges in the University began. This gives a nine months' session beginning the last of September and ending the last of June.

It is very gratifying to note the strengthening of the course in the College of Medicine of the University of Vermont. This institution has been steadily lengthening the session, increasing the number of hours of teaching, improving the methods of teaching and raising the standard to meet the increasing requirements of medical education and so keep the school in the class with the best medical schools of the country.

It may be interesting to our readers to know something of what has been done in the College of Medicine along these lines during the past few years.

The session has been lengthened from seven to eight, and now from eight to nine months. This gives the students of medicine of to-day a decided advantage, the instruction can be amplified in every subject and there is more time for collateral reading and application. The session now is as long as the session of any medical school and longer than that of most schools.

We do not think it is generally known that the University of Vermont College of Medicine is a member of the Association of American Medical Colleges. The object of this association is to unite the best medical schools in maintaining a high standard of medical education as well as to adopt more uniform methods

of teaching, methods more like those in use in other institutions of learning.

The conditions of membership to this association, as provided by the constitution are, first, that the school shall require at least a high school education of all students; and second, that it shall maintain a prescribed number of hours' teaching in each subject of medicine. The total number in all the subjects for the four years of the medical course to be 4,000 hours, 1,000 hours in each session. This is an average of 31 hours a week for a session of thirty-two weeks of actual teaching.

In the curriculum of the College of Medicine there are scheduled more than this number of hours of teaching. The session is longer than the minimum required and the college has raised the standard of preliminary education from a high school course to one additional year in college, this year to be devoted to the study of subjects directly related to the study of medicine and will make it possible to maintain a high standard of medical education. The increase in requirement for preliminary education was made to anticipate the requirement of one year in college in addition to the high school course which will be made by the American Medical Association on January 1, 1914. This will insure the admission of men better qualified to begin the study of medicine.

The methods of medical teaching have changed so materially during the past few years and the work in the various laboratories has increased so much that it has become necessary to employ men to teach the science branches of medicine who devote all their time to teaching. The College of Medicine has on its corps of teachers nine men who devote all their time to teaching, this insures the application of the best principles in medical teaching and also a high standard of scholarship.

The American Medical Association through its Council on Medical Education makes a biennial inspection of all medical schools of the United States for the purpose of classifying them with reference to equipment, facilities for teaching, standard of education required, etc., etc. Such an inspection was made last year and it is gratifying to know that the University of Vermont College of Medicine was placed in "Class A" with Harvard, Yale, Columbia and Johns Hopkins. There were 50 out of the 123 medical schools in the United States placed in this list. The fact that the College of Medicine is maintaining a satisfactory standard of medical education and is entitled to this rating is brought out in the Annual Report of the State Examining and Licensing Boards of the United States.

According to this report we find that of all the graduates of the University of Vermont College of Medicine who were examined by the various boards in the United States during the last five years, (1907-1911) for license to practice only 3.2% failed to meet the requirements of these boards. To give some idea of the comparative standing of graduates of the University of Vermont College of Medicine with other medical schools of the country we copy from the report giving the percentage of failures of graduates for the five years 1907-1911 in examination by State Boards:

University of Vermont	3.2%
Harvard	2.9%
Johns Hopkins	2.9%
Yale	9.1%
Columbia	10.1%
Maine	17.4%

It is very gratifying to find the University of Vermont College of Medicine is maintaining a standard of education as high as the best medical schools in the country and all Ver-

monsters and alumni wherever they are will feel a just pride in the achievement and standing of this state institution.

It must be evident, however, that this increased standard of requirement both in preliminary education and time required in medical study must materially reduce the number of medical students. This is the history in all medical schools. When Cornell raised the requirement for admission to a baccalaureate degree there were only three students in the entering class. The College of Medicine has eight students in the entering class and twelve in the pre-medical class. Assuming that there will be eight students entering the College of Medicine from other institutions (the same number there are this year) these eight with the twelve now in the pre-medical class will give a freshman class of twenty in the College of Medicine next year. Last year there were forty-six in the freshman class which was about the average number. This reduction in the number of students means a corresponding reduction in the income from students' fees. The expense of maintaining the school has been materially increased.

The lengthening of the session with the increased number of hours of teaching, together with the change in the method, has necessitated a decided increase in the expense of maintaining the school. It is very easy to see that a diminished income with an increased expenditure for maintenance must mean financial ruin unless an income is available from some other source.

It is very natural in discussing this question to ask, Is it worth while to maintain a medical school in Vermont? Is the medical school serving the people of the state in a way that warrants the expenditure necessary to maintain it? Do we need a medical school to educate Vermont boys? Are the standards of medical edu-

cation going to be raised still higher so that they cannot be met by the College of Medicine? These are questions that should be carefully considered.

First. Is the medical school serving the people of the state? Let us see. The free medical and surgical service at the hospitals is made possible, very largely at least, by the existence of the medical school. It necessitates study to become qualified to teach; as the medical school requires teachers in the various branches of medicine it is able to furnish qualified men to do the gratuitous hospital work. Compare the amount of gratuitous hospital work that is done by other hospitals in the state with that which is done by the hospitals whose attending staffs are made up wholly or largely of men connected with the College of Medicine. We can get some idea of the amount of this work if we study the report of the hospitals. During the past year, 1911, the total number of days' of gratuitous treatment of all the patients in the Mary Fletcher hospital aggregated 25,006 days. Assuming that these patients were seen by a physician or surgeon every day and that the fee of the physician or surgeon be computed at the rate of \$1 a visit (less than the fee of the general country practitioner) the amount of this gratuitous service would be \$25,006. There were 2,395 operations done at the Mary Fletcher hospital last year. Assuming that the fee for these operations would average \$50 (an amount much less than the surgeon's fee for even a comparatively simple operation) the amount of this gratuitous service would be \$119,650. In addition to this there have been over a thousand patients treated in the outpatient department. This service includes medical treatment, minor surgical operations, dressings of wounds, etc. Many of these patients return many times for treatment or surgical care. Assuming that this service would

average \$5 for each of the 1,095 patients, the service would amount to \$5,475, making a total of \$150,111 of gratuitous service at this one hospital for one year. Add to this the gratuitous service done at the Fanny Allen hospital and you would have an annual gratuity amounting to between \$200,000 and \$250,000 which the College of Medicine is making possible for the poor people of the state. Surely this a service worth while and one that few men would like to assume the responsibility for discontinuing.

Secondly. Do we need a medical school to educate Vermont boys? It might be said that our young men might be educated in medicine as well if not better at some institution in the larger cities. This may be true so far as the education goes, but would it make a young man any more likely to return to Vermont to practice medicine in a small town if he should be required to leave the state and spend four or five years in a large city. It is a matter of common knowledge that the tendency of people is not to go to the small country town but to the city.

Lastly. It has been suggested that the requirements for medical education will continue to be raised so that it will be impossible or impracticable to support a medical school in Vermont. So far as it is possible to judge from the sentiment expressed by the Association of American Medical Colleges and the American Medical Association there will not be any material change in the requirements for medical education for some time. It is not improbable that the course of pre-medical study will ultimately be increased to two years in college and that this together with the four years of medical work will earn two degrees. It is not probable, however, that this year will be added to the course for many years, so that there is good reason to suppose that the requirements for medical instruction will remain practically as they are now for some time. In view

of the probability that there will not be any material change in the requirements for medical study, and the fact that the University of Vermont College of Medicine has met all the conditions required of a first class medical college, and the fact that it is maintaining a high standard of medical education as shown by the standing of its graduates in the examinations given by State Boards, and also the fact that the school is directly and indirectly giving more than \$200,000 of gratuitous medical and surgical service to the poor people of the state each year, it does seem worth while to maintain a medical school in Vermont.

NEWS ITEMS.

The ninety-ninth annual meeting of the Vermont State Medical Society was held at Montpelier, October 10th-11th, with an attendance of two hundred. An unusually interesting program was carried out in full. It was voted to hold the one hundredth anniversary meeting at Burlington, October next. The following officers were elected:

- President—Dr. B. H. Stone.
- Vice-President—Dr. W. W. Townsend.
- Secretary—Dr. C. H. Beecher.
- Treasurer—Dr. C. F. Dalton.
- Auditor—Dr. C. A. Crampton.
- Executive Committee—
 - Dr. J. H. Winch, Northfield,
 - Dr. H. W. Barrows, Stowe,
 - Dr. C. H. Beecher, Burlington.
- Publication Committee—
 - Dr. C. H. Beecher, Burlington.
 - Dr. F. E. Farmer, St. Johnsbury,
 - Dr. D. Marvin, Essex Junction.

At the annual meeting of the Burlington and Chittenden County Clinical Society, held at the University of Vermont College of Medicine September 26, 1912, officers were elected as follows: President, Dr. C. H. Beecher of Burlington; vice-president, Dr. C. A. Pease of Burlington; secretary and treasurer, Dr. Barnet Joseph of Burlington; executive committee, Drs. B. D. Adams, E. T. Brown and O. N. Eastman of this city; delegates to the meeting of the Vermont State

Medical Society, for one year, Drs. F. W. Sears of Burlington and I. S. Coburn of Milton; for two years, Drs. F. J. Arnold, L. B. Morrison and F. K. Jackson of Burlington and H. A. Ladd of Essex Center; alternates, Drs. D. D. Grout of Waterbury, George B. Hulburd of Jericho, Matthew Hunter of Essex Junction and C. F. Dalton of Burlington. Dr. A. S. C. Hill of Winooski treated the use of banana as a food in an instructive paper. About 20 were present. Dr. Hill presided and Dr. J. H. Dodds of Burlington was secretary.

A woman in Newark, N. J., is suing Dr. Charles L. Hill of the surgical staff of St. Martin's Hospital of that city for \$10,000 because he left a piece of linen or surgical dressing in her abdominal cavity about two years ago when he operated upon her. She claims he is liable as he had charge of the operation.

Dr. George Holbrook has again left Woodstock, Vt., and gone to Swanzy, N. H., to practice.

Dr. P. W. Wing has returned from the south and purchased property in Canaan, N. H., where he intends to reside permanently.

Dr. G. C. Rublee has left Wolcott and is now practicing in Hardwick, Vt.

Dr. T. E. Larner has given up his practice in Hardwick and gone to New York City to take a post graduate course in ear, eye, nose and throat diseases.

The Franklin, N. H., Hospital received \$50,000, the Laconia Hospital, the Margaret Pillsbury Hospital at Concord, and the Sacred Heart Hospital at Manchester \$5,000 each from the estate of Mrs. Mary J. Colby, who has just died at Franklin, N. H.

The Italian Government contributed \$60,000 toward the erection of the new Italian Hospital in New York on 83rd street which is to be formally opened to patients on October 15th. The building is of steel and stone structure, five stories and has accommodations for one hundred patients.

In the State of New York twenty-one counties have decided to build tuberculosis hospitals and nine others are expected to do so before the year closes. West Chester County will build a \$100,000 hospital on a \$40,000 site.

The State Food Commissioner of Iowa says that fly specks make food impure and that under the pure food law of that state food stuffs exposed to flies are in fact adulterated and that merchants who thus expose foods for sale are liable to prosecution.

A daughter was born the 24th of September to Dr. and Mrs. L. N. Piette of Winooski, Vt.

Dr. Horatio Robinson Storer of Newport, R. I., has received a degree of doctor of laws from Fordham University. He is 83 years old. Dr. Storer introduced the use of chloroform into America and is said to have been the first to take up the specialty here of gynecology.

The Supreme Court of the State of Washington has just decided that the law of that state is constitutional that provides for the sterilization of habitual criminals and those guilty of unnatural crimes. The court held that the operation was not dangerous nor painful neither was it painfully cruel nor inhuman.

At the recent meeting of the National Dental Association held at Washington, Dr. Rhein declared that "poisons generated by defective teeth pass into the human body and by slow process of their absorption the way is open for any and all diseases."

Dr. Charles D. Clark, a Brooklyn physician, died Sept. 5th in his eighty-seventh year. He graduated from the Castleton College of Medicine in 1853.

The Board of Health of Lynn, Mass., disputed the value of the services of Dr. Michael H. Couture for attending the smallpox cases at the pest house. The doctor is suing the city for \$2,000. He puts a price on his services of \$35 per day. He was completely quarantined with his patients and spent all his time for 33 days at the pest house.

Dr. C. W. Phillips, who has been practicing in Burlington for the past year, has returned to Bennington, Vt.

Dr. G. A. Russell, formerly of Lincoln, Vt., is now practicing in Arlington, Vt.

A son was born recently to Dr. and Mrs. Vance W. Waterman of Vergennes, Vt.

BOOK REVIEWS.

AN ESSAY ON HASHEESH, including observations and experiments.—By Victor Robinson, contributing editor *Medical Review of Reviews*, Pharmaceutical Chemist, Columbia University, member of American Chemical Society, etc. *Medical Review of Reviews*, 1912. Price 50 cts.

This essay gives the history of Cannabis Indica, a discussion of its therapeutic characteristics, and a very graphic description of the effect of large doses on a number of individuals by the author. A very readable and instructive discussion of the most interesting drug.

THE WASSERMAN REACTION, its technique and practical application in the Diagnosis of Syphilis.—By John W. Marcheldon, B. S., M. D., Assistant Professor of Bacteriology, St. Louis University Medical School. Eleven illustrations and colored frontispiece. C. V. Mosby & Co., St. Louis, 1912. Price \$1.50.

This little book of one hundred pages contains a very concise discussion of the principle of complement fixation and a very clear description of the technique of the original Wassermann test. The last few chapters are concerned with the interpretation of the reaction and the effect of antisyphilitic treatment upon it. It is a book which any one intending to take up this work will find very useful.

THE PRACTICE OF MEDICINE. A Manual for Students and Practitioners.—By Hughes Dayton, M. D., formerly of the Cornell University Medical School, New York. New (2d) edition, thoroughly revised. 12mo, 326 pages. Cloth, \$1.00 net. The Medical Epitome Series. Lea & Febiger, Publishers, Philadelphia and New York, 1912.

This is a very meaty little volume. The wonder is that so much can be condensed into its three hundred odd pages. The classifications of Osler are followed. Each disease is defined and discussed under headings of Etiology, Pathology, Symptoms, Diagnosis, and Treatment. These epitomes will always have a useful place, among time savers to the man who wishes to look up some point without taking much time to read through chapters or the student who wishes to review a subject for examination and in fact whatever our theoretical views as teachers may be on the epitome, we must all confess to using them often.

ELEMENTARY BACTERIOLOGY AND PROTOZOLOGY. The Micro-Biological Cause of the Infectious Diseases.—By Herbert Fox, M. D., Director of the Williams Pepper Laboratory of Clinical Medicine in the University of Pennsylvania; Pathologist to the Zoological Society of Philadelphia. Illustrated with

sixty-seven engravings and five colored plates. Lea & Febiger, Philadelphia and New York, 1912.

This book is intended for the nurse and the beginner in bacteriology and therefore omits much of the more technical and emphasizes the practical side of the subject. It has especially good chapters on the passage of bacteria from individual to individual, disinfection, sterilization, etc. For the purpose for which it is especially intended, it is one of the best books the reviewer has seen.

A TREATISE ON DISEASES OF THE HAIR.—By George Thomas Jackson, M. D., Professor of Dermatology in the College of Physicians and Surgeons, Medical Department of Columbia University, and Charles Wood McMurtry, M. D., Instructor in Dermatology in the College of Physicians and Surgeons, Medical Department of Columbia University, New York. Octavo, 366 pages, with 109 engravings and 10 colored plates. Cloth, \$3.75 net. Lea & Febiger, Philadelphia and New York, 1912.

As the author says the average physician feels himself helpless and hopeless when confronted with a disease of the scalp or hair. Affections of this kind are so common that every physician is consulted time and time again concerning them and yet very little time is given to the subject in the curricula of our medical schools. To the specialist it will come as a thoroughly up to date treatise on this special subject.

A MANUAL OF CHEMISTRY. A Guide to Lectures and Laboratory Work for Beginners in Chemistry. A Text-book specially adapted for Students of Medicine, Pharmacy and Dentistry.—By W. Simon, Ph. D., M. D., Professor of Chemistry in the College of Physicians and Surgeons, Baltimore, and in the Baltimore College of Dental Surgery; Emeritus Professor in the Maryland College of Pharmacy; and Daniel Base, Ph. D., Professor of Chemistry in the University of Maryland. New (10th) edition, enlarged and thoroughly revised. Octavo, 774 pages, with 82 engravings and 9 colored plates, illustrating 64 of the most important chemical tests. Cloth, \$3.00 net. Lea & Febiger, Philadelphia and New York, 1912.

The good points of this book are too well known to require comment. The appearance of this the tenth edition is an attest of its popularity and a guarantee of its up-to-dateness. The section on Physiological Chemistry has been entirely re-written. The authors attempt "to furnish the student in a concise form, a clear presentation of the science, an intelligent discussion of these substances which are of interest to him, and a trustworthy guide to his work in the laboratory" has been admirably attained in this volume.

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WRITE FOR DESCRIPTIVE LITERATURE.

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THERAPEUTIC NOTES.

A SAFE AND EFFICIENT SLEEP PRODUCER.—Considered from the view-point of therapeutic efficiency, safety, and freedom from evil effects, in PASADYNE the profession has its most reliable sleep-producing agent. PASADYNE is the distinctive name of Daniel's Concentrated Tincture of *Passiflora Incarnata*, which has been used extensively by physicians for a third of a century. Its advantages over chloral and the bromides are: superiority of action, freedom from gastric disturbance, absence of habit formation and safety. The physician who has used the several agents named and compared their advantages, will not hesitate to continue to use PASADYNE in preference to chloral and the bromides.

In the practices of thousands of physicians PASADYNE has supplanted all other drugs in producing sleep, on account of its demonstrated superiority. The sleep it brings about is calm and restful; the patient awakens as refreshed as from natural sleep. A sample bottle will be furnished if application be made to the Laboratory of John B. Daniel, Atlanta.

THE DENVER CHEMICAL MFG. CO., manufacturers of Antiphlogistine, are to be congratulated on securing the services of Mr. Harold B. Scott as Manager of the Company, to succeed J. C. Bradley, who is retiring from that position.

Mr. Scott is a bright, energetic young man, a graduate of Yale University with the degree of A. B. Upon his graduation from college he entered the commercial world where he has enjoyed a wide, varied and successful experience in developing one of the great industries of our country. He is peculiarly well fitted for the management of a proprietary house, and his connection with Antiphlogistine will doubtless lead The Denver Chemical Mfg. Co. to spell success with larger letters than ever before.

SOME VALUABLE PRODUCTS FOR THE TREATMENT OF DISEASES OF BACTERIAL ORIGIN.—Since the advent of diphtheria antitoxin it is doubtful if any new remedial agent has elicited greater interest than is now being manifested in the bacterial derivatives known as Phylacogens. These products were originated by Dr. A. F. Schafer, of California, the method of preparation and technique of application being first presented to the San Joaquin Medical Society in Fresno. To the uninitiated it may be said that the term Phylacogen (pronounced phy-LAC-o-gen) means "phylaxin producer," being derived from two Greek words signifying "a guard" and "to produce." The Phylacogens are sterile aqueous solutions of metabolic substances generated by bacteria grown in artificial media. They are produced from a large variety of pathogenic bacteria, such as the several staphylococci, streptococcus pyogenes, bacillus pyocyaneus, diplococcus pneumoniae, bacillus typhosus, bacillus coli communis, streptococcus rheumaticus, streptococcus erysipelatis, etc.

Four Phylacogens are now offered to the medical profession: Mixed Infection Phylacogen (used in the treatment of bacterial diseases of unknown etiology), Rheumatism Phylacogen, Erysipelas Phylacogen, and Gonorrhoea Phylacogen. They have been thoroughly

tested clinically and are said to be producing excellent results in the treatment of the various pathological conditions in which they are indicated. They are administered hypodermically—subcutaneously or intravenously—preferably by the former method, the latter being advised only in cases in which a quick result is demanded. They are supplied in hermetically sealed glass vials of 10 cc. capacity.

The Phylacogens are prepared and marketed by Parke, Davis & Co., who have recently issued a 24-page pamphlet which describes them in detail—the process of manufacture, therapeutic indications, dosage, methods of administration—everything, in fact, that needs to be known by the man who desires to use phylacogens. Every physician in general practice, every practitioner who desires to keep abreast of the latest advances in bacterial therapy, should have a copy of this valuable booklet. Write to Parke, Davis & Co., at their general offices in Detroit, Mich., ask for the "Phylacogen pamphlet," and mention this journal.

ANEMIA AND TISSUE WASTE.—Tissue waste, which is secondary to depletion of the system by interference with tissue repair, is often very persistent for the reason that it is not accorded systematic treatment. The failure to correct anemia and tissue waste is a serious mistake. The practitioner's duties are by no means over when the acute disease has spent its force. In fact, the physician should regard it as a routine duty to institute such treatment, at the conclusion of an acute disease, as will look to the correction of anemia, and the repair of the depleted tissues. Such a course changes the results remarkably—and of course insures the patient against many subsequent untoward results which accrue from the lowering of the resisting powers of the economy.

In treating anemia and tissue waste Bovinine is of great value. This agent is a pure tissue food and contains all the nutritive elements. It contains true animal iron, which is incomparably superior to any of the inorganic preparations that can be found.

It should be given in increasing dosage, and continued until there is no longer any clinical evidence of anemia, and until the former state of the tissues, as regards the matter of waste, has been restored.

In children convalescing from acute infectious diseases, whooping-cough, bronchitis and similar affections, Cord. Ext. Ol. Morrhuæ Comp. (Hagee) is always indicated; nor is it necessary to dwell upon the fact that in scrofulosis, rickets and other diseases of malnutrition, there is nothing better than Cord. Ext. Ol. Morrhuæ Comp. (Hagee), and it has always been relied upon in tuberculosis. On account of its palatability, patients will take it in quantities and long enough to secure results.

To the Readers of the VERMONT MEDICAL MONTHLY:

About six years ago the writer began to use vaccines in the treatment of typhoid fever. Since that time he has thus treated more than one hundred cases and has obtained numerous articles upon the same subject written by physicians in various parts of the world. It seems possible, however, that some may have escaped notice. He also realizes that

many of the profession may have treated some cases without reporting them. A paper upon the subject is now in the course of preparation. In this it is earnestly desired to incorporate reports from a large number of cases, good, bad, and otherwise. He accordingly makes the following request to the readers of this journal:

Will any one who has used vaccines in the treatment of typhoid fever, whether but one case or more, kindly communicate to him that fact accompanied by name and address of the reporter. If the results have already been reported, a note of the journal in which they appeared will be sufficient. If they have not been reported, a short blank form will be sent to the physician to be filled out. Due credit will be given in the article to each person making a report. If any physician happens to know of other confreres who have any such cases, it will be appreciated if he sends their names, as they may not happen to read this note. It is hoped that by this means a sufficient number of cases may be collected to somewhat definitely settle the now mooted question whether vaccines are or are not of benefit in typhoid therapy.

Reports of cases will be accepted at any time in the future but preferably by November or December of the present year.

Kindly communicate with Dr. W. H. Watters, Director of the Department of Pathology and Bacteriology, Evans Institute for Clinical Research, Boston, Mass.

The Children's Orthopedic Hospital, of Seattle, Wash., which has been four years and a half in building was opened to the public on September 8th. The hospital building, which is three stories in height, is constructed of brick and concrete, is well lighted and ventilated, and is absolutely fireproof. It is said that when completely equipped it will be one of the best institutions of its kind in the west.

In a Scottish village where a young doctor had lately started practice a workman had the misfortune to get his finger bruised badly in one of the machines. The doctor was sent for and on properly dressing his finger the man nearly fainted. He was asked if he would take a little spirits to revive him. "Man," he exclaimed with feeling, "that weed just be the very life o' me." The doctor gave him a stiff tumbler full, which he greedily swallowed, and on recovering his breath his first words were: "Weel, doctor, I ken unco little aboot yer skill, but, man, ye keep grand medicine!"—*Western Med. Review.*



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A college professor, noted for strict discipline, entered the classroom one day and noticed a girl student sitting with her feet in the aisle and chewing gum.

"Mary," exclaimed the indignant professor, "take that gum out of your mouth and put your feet in."—*Exchange*.

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NOTES WORTH NOTING.

A physician who during medical discussions had the habit of springing little bits of knowledge new to most of his hearers, upon request gave the following explanation of how the trick was done:

"Like all well meaning physicians," he said, "I try to keep up with my medical journals and to read as many articles of interest in my line, internal medicine, as time will allow. I have long since discovered that it is a poor article indeed which does not contain at least one or two items of special interest and the presence of which well repays the reader for his patience. I soon learned to pick out these little points from the general run of an article with increasing ease, and to pay more attention to them, in fact, than to the article as a whole. First, I depended on my memory to carry my findings, but many of them failed to appear when most needed, so I began to jot them down on a card and file the card in my card index."

Here are some of the fruits of his labor gathered during the last two or three months (the names of the authors and journals being here omitted).

"Mumps is sometimes complicated by pancreatitis, rarely by inflammation of the thyroid, thymus and lachrymal glands.

"A blood smear from a case of auto-intoxication usually shows many of the polys having an unusually dark protoplasm from excess of large ambophilic granules. The proportion of these cells decreases as toxins lessen in the blood so that the degree of auto-intoxication may be estimated. Also a comparative decrease in the number of polys and increase in lymphos.

"Formalin is a specific disinfectant for wounds caused by the bite of a mad dog. A five per cent. solution applied for twelve hours to the wound is preferable to cauterization with nitric acid or phenol.

"In pneumonia if the pulse rate per minute goes above the blood pressure in mm. of mercury, recovery is unlikely. The knee jerk disappears in pneumococcic pneumonia three or four days from the onset of the illness and returns about the ninth day; its disappearance before the third day means danger, while if it remains normal until the seventh day, recovery may be considered practically certain. In tu-

bercular and other pneumonias not due to the pneumococcus, the knee-jerk usually persists or is increased.

"Lead neuritis of the forearm spares the supinator longus muscle while traumatic neuritis does not.

"The most satisfactory treatment of gonorrhoea in girls is the application, after cleansing, of silver nitrate 25% to the cervix and 10% to the vagina, followed immediately by petrolatum, once a week, together with the application of iodoform in glycerine 25% once a week. Vaccines apparently of benefit only where arthritis is associated.

"Two glasses of beer at bed time is good treatment for precipitate emissions in oversensitive men; if glans penis is very sensitive, bath in solution of tannin in alcohol; if necessary, circumcision.

"An increase of diastase in the blood is an important diagnostic point in injuries to the pancreas.

"Menthol occasionally appears to have a specific action in the treatment of exophthalmic goitre. Parathyroids, grain 1-10 to 1-2 of dried gland, together with calcium salts in the diet, is sometimes valuable in relieving the nervous symptoms of this disease.

"Artificial intestinal obstruction in dogs causes death by loss of fluid in the vomitus. If hypodermoclysis of saline solution is kept up the dog will live ten or more days until starvation sets in. This shows that lack of fluid from the tissues and not absorption of intestinal toxins is the main cause of death.

"Automobile speeding is a cause of sexual impotence.

"Lymphocytosis in Graves' disease points to a simultaneous involvement of the thymus gland.

"Iodides and bromides are found to lower opsonic index of patient's blood to pus germs, thus explaining the frequency of acne after administering. Arsenic found to raise index and would be a good remedy to counteract these disagreeable effects when iodides or bromides are given for any length of time.

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CATALOGUES

The Medical Department of the University of Vermont will appreciate it very much if any of the Alumni can furnish catalogues of the Medical Department of the following dates to complete the files, 1857-66-7-8-9-71 and 73. These may be sent to the Dean.

TO BORROW GORGAS.

The Government of Ecuador has decided to clean up the port of Guayaquil, where yellow fever has existed for some time, and to that end has asked the United States to assign Col. William C. Gorgas, sanitary officer at the Canal Zone, with some of his assistants, to make a survey of the port and advise a plan to be followed. The request is under advisement and will probably be granted by special act of Congress.—*Medical Record.*

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Lumbar puncture is of value in the treatment of aural vertigo. The best cases are those in which the labyrinthine apparatus is still in a fairly normal state, the most favorable being those of pure labyrinthine origin and of relatively short duration. In cases of this class sensitiveness to the galvanic current may be poor before lumbar puncture, may become more nearly normal after. Prognosis as to results varies much, but it is very good where galvanic and other tests indicate a labyrinthine vertigo with but little nerve degeneration.

Tuberculin treatment should be more employed in laryngeal tuberculosis. When the general condition is bad, and especially when there are high fever and extensive tuberculous changes in the larynx, tuberculin is contraindicated. The dose must be selected so as to avoid general reaction as much as possible. The local reaction with bacillary emulsion is slight—only a serous infiltration with sometimes a thin, cloudy, fibrinous deposit. The treatment produces especially an improvement of the general health and increase of weight and appetite. Healing of the laryngeal lesion is observed only when the ulceration is superficial. When extensive changes are present local surgical treatment of the larynx must be combined with the specific. The infiltrated parts should be removed as extensively as possible with cutting instruments at separate sittings.

The two especial factors in the causation of acute middle ear suppuration are adenoid vegetations and pyogenic micro-organisms. The pyogenic micro-organisms can not always be avoided but adenoid vegetations can. In most cases of acute middle ear suppuration we obtain the history of repeated mild attacks of earache lasting for a few days and then clearing up. These are attacks of acute serous or catarrhal inflammation of the Eustachian tube or middle ear, and speak for the presence of adenoids. All such patients should have their adenoid vegetations removed with the object of preventing acute middle ear suppuration at some future time.

Neuralgia of the mastoid must sometimes be differentiated from an inflammatory mastoiditis. In neuralgic affection there will be pain in the mastoid, and maybe tenderness on pressure. As a rule, the middle ear will be normal, as shown by the hearing and tuning fork tests, and the absence of inflammatory symptoms. The sagging of the posterior superior wall of the inner end of the external auditory canal, which is characteristic of suppurative mastoiditis, is absent in neuralgia. As a reflex cause of pain in this region the teeth should always be suspected and examined. Toxic conditions, such as would arise from a pathological state of the kidneys, or disturbed gastro-intestinal functions, should be sought for, and the possible hysteric origin of the pain should be borne in mind.

Elliott reports a method for improvement of a dense corneal opacity. A woman had treated herself for an inflamed eye with three successive applications of sugar of lead dissolved in rose water. The inflammation subsided, but a dense white plaque remained on the cornea, for which she wanted relief on æsthetic grounds. Elliott scraped the ulcer freely, but without materially affecting the opacity. He then irrigated the eye with a weak aqueous solution of sulphuretted hydrogen, when the white patch at once turned brown. Although the cornea remained just as opaque as before, the opacity was now no longer obvious to every beholder, though still quite evident on close examination. The patient was so satisfied with this result that she declined all further treatment and has not since been seen.

Dacryocystitis is, in many cases, merely a symptom of nasal disease. In treating the condition without first relieving the condition in the nose efforts are wasted. Suppuration around the tear sac is largely due to necrosis of the walls of the accessory sinuses. One of the most typical of associated diseases is mucocele of the ethmoid or frontal sinuses, with the resulting swelling to the inner side and above the eye, the latter accordingly being displaced downward and outward.



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Official Organ of the Vermont State Medical Society.

Vol. XVIII, No. 11.

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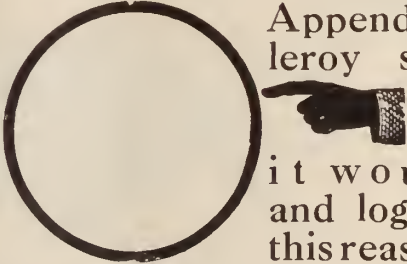
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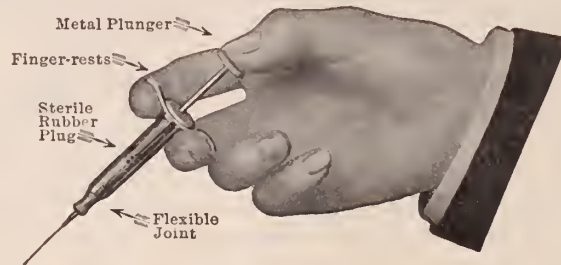


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PLAIN SPEAKING ON SANITARY MATTERS.

As the education of the public progresses in sanitary matters, the tendency to criticize officials responsible for conditions that are not as they should be becomes more pronounced. This is a hopeful sign, and means, inevitably, improved conditions. As examples of plain speaking on these matters, two instances may be cited. The headline over an article in a daily paper published in a large western city reads: "One More Baby's Life Forfeited to the Game of Politics." The article contains an account of an epidemic of scarlet fever which was traced to a certain dairy. It specifically attributes the death of a 5-year-old child to the milk from this dairy, and goes on to say: "The milk inspection department, during the time that a milker at the farm was developing scarlet fever, was playing politics. The inspectors were out soliciting votes among such of the dairymen as lived within the city limits, and had a vote May 21. On their shoulders is laid the blame for the infection spread through the city." The

other instance also concerns the milk-supply, this time in a large eastern city. The chief inspector of creameries of the state board of health made an inspection of creameries and dairies in the city and found only three out of twenty-seven that were up to the standard. He stated to the local board of health that he had no doubt that the impure milk was the cause of the death of many infants, and that if the board did not take immediate action the state board would step in and force the local board to do its duty. With all the agitation and legislation concerning milk it is scarcely possible that milk-producers and distributors do not know the rôle of impure milk in the production of disease and death in infants. A conscience so defective as to permit such conditions to exist in the face of that knowledge, says the *Journal of the American Medical Association*, requires drastic criticism and vigorous action to penetrate it and get it in a normal working condition. Fearless speaking by the newspapers and the public will surely improve the health situation.

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CAESAREAN SECTION FOR PLACENTA PRAEVIA.

Of late years a number of articles have appeared in the German journals by, among others, Kronig and Sellheim advocating the more general employment of Caesarean section in cases of placenta praevia. They base their conclusions on the apparently better results for mother and child which they have obtained by the major operation as against those obtained by purely obstetrical treatment, such as turning and the use of Champetier de Ribes' bag. Their view of the question is contested by Couve-laire (*Ann. de Gynec. et d'Obstet.*, April, 1911). He gives the statistics of the cases of placenta praevia treated in the Clinic Baudelocque, Paris, for the period of 1890 to 1910. During that time there were 162 cases so severe as to call for definite treatment during pregnancy or labor. Minor cases calling for no treatment are excluded. Of these 87 were treated by rupture of the membranes, 62 by rupture of membranes and de Ribes' bag, 7 by bipolar version, 3 by manual dilatation, and 3 by internal version. There was a total maternal mortality of 10, or

6.7 per cent. Kronig, for a similar set of cases treated in the same way, gives a mortality of 20 per cent. If the cases be excluded which on admission were in a dying condition from hemorrhage or sepsis—the type of case in which Kronig advises against Caesarean section—the mortality is reduced to 3.2 per cent. and the mortality from hemorrhage to 1.28 per cent. This is a result which will compare favorably with any similar series of cases treated by Caesarean section.

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Vermont Medical Monthly.

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ORIGINAL ARTICLES.

CRIME: CAUSE AND PREVENTION.*

BY

F. W. SEARS, M. D.

Burlington, Vt.

This afternoon my object is to turn your attention to a few theories which are considered as almost axiomatic facts by the modern criminologist and to show to you the reasons for a few reforms which are now being advocated by those interested in criminal reform in Vermont.

The social student of to-day considers society as a whole, a true body politic, where every member belongs each to the other and where an injury to one is an injury to all. No longer does he regard it as made up of warring factions arrayed as contending hostile armies—no longer is society arrayed against the criminal as against an alien foe—but the criminal is considered as a part of the body itself, a diseased part it is true, but to be treated as a diseased part and to be healed and made normal if possible, but if it becomes liable to infect the rest of the body, to be cut off by segregation or death, even as the surgeon cuts out an ulcer or removes a gangrenous appendix.

Considered in this way the idea of vengeance disappears and also the idea of giving a man what he deserves. We cannot judge what a man deserves, we do not know what his parents were, what was his early environment, and what abnormal mental development may have led up to the crime. We may possibly give a man what he deserves for his own good but not with the idea so often expressed that "it was good enough for him."

So the modern criminologist narrows down the ends to be attained by punishment to two. First, the reform of the criminal; second, the protection of the state and under this head is included the deterrent effect of the fear of punishment upon the would be criminal.

The two objects to be obtained are more or less commingled one with the other but we shall first take up the reform of the criminal and consider what are the results of the present treatment and what we hope will be the results of certain reform measures.

Any division of criminals into classes except for the purpose of treatment must be more or less unsatisfactory. The belief in a class of born criminals is passing away. Formerly we believed in born consumptives, now we know these cases have inherited only a weakened resistance to the tubercular bacilli; so in criminals, many are born with a weakened resistance against the temptation to commit crime and when exposed to a bad environment will commit crime but if these same so-called born criminals had been taken when young and put in a proper environment and been carefully nurtured they would have become fairly good citizens. More liable to fall under strong temptation, perhaps, but yet able to withstand the stress of a moderately protected life, while the boy born of moral parents put in a bad environment or even not properly taught self control in his own moral family and to respect the rights of others may easily also become a criminal. The feeble minded are more liable to commit crime than the normal person. One-fourth of our juvenile delinquents and probably 40% of adult criminals are mentally defective. Feeble mindedness is undoubtedly hereditary. Therefore, while we reject the idea of a born criminal we must admit that heredity as well as environment is an important factor in the child's resistance to criminal temptation. Intellect depends upon heredity—character upon environment.

The first step in the reform of a criminal is education—not book education, but an education which teaches self control, respect for the rights of others, respect for himself and a more normal outlook upon life. Garafolo's definition of a criminal is one who has lost his appreciation of the life and property of others. The teacher in the public school has children of varying physical and mental qualities. Some children go through all the grades without trouble, respecting the rights of other children, doing

*Read at the Annual Meeting of the Vermont State Medical Society at Montpelier, Oct. 10 and 11, 1912.

their daily tasks with thoroughness; others are less manageable—more mischievous, and may or may not lose a grade during their course; and so on down the scale until we get to those who perhaps through some physical disability or mental defect are hopelessly in the rear and those who through lack of proper home training have become unmanageable. These, if children of the rich are boosted along and safeguarded in various ways but if children of the poor, are sent to the reform school to be treated by men especially trained to teach these unfortunates. And here is where we ask for our first reform. When a child is a truant or when caught committing a larceny or a sexual crime, it should not be treated as a hardened criminal and thrown into jail with older men and women who in a few days may corrupt the child for life. It should not be submitted to trial in an open court with all the disgrace and publicity attendant thereto, but there should be a separate juvenile court to which the public is not admitted and the child should be disposed of without previous imprisonment. If the reform of a criminal consists in reeducating and increasing his self respect it seems absurd to submit him to pernicious influences which teach him perhaps in twenty-four hours more vice than he ever knew before and then make him publicly pass through an ordeal which robs him of his self respect, it may be forever.

The teacher can teach a child to better advantage if he understands the child in the light of its past history and so when a child is committed to the reform school a blank should be filled out by some officer in the town where the child lives giving the family history, his environment, manner of life and the actual circumstances of the crime or misdemeanor. This is also of great help in the classification of children as to their mentality and physical and moral disability.

These teachers should also have plenty of time to re-educate the scholars and to teach useful trades and occupations so that they can support themselves on leaving the school. This is done by committing the boy until he is twenty-one but by some curious error the girls can only be kept until they are eighteen. This time should be extended to twenty-one because the girls become offenders later and are not usually sent to the school until 12 years old, many of them about 14 years, and quite a num-

ber at 16 and 17, and much better results could be obtained if the school could have supervision over them until they are twenty-one.

It goes without argument that the feeble minded children should be placed in an institution by themselves where they are not subject to the pernicious influence of the stronger minded and where they can have radically different treatment. A school for feeble minded is one of the greatest needs of the state. In behalf of children we ask for these four things: A juvenile court and a history of the child at the time of commitment, the age limit of girls in the reform school increased to 21 years, and last and most important the establishment of a suitable institution for the feeble minded.

The adult presents an entirely different set of problems. The question is how shall we best reform the criminal and at the same time protect the state. In the early days of the 19th century every crime was punished by a fixed punishment and no discretion was left to either judge or jury. The starving man who stole a loaf of bread for food was punished equally with the hardened criminal who stole for gain. The injustice of this began to cause juries to acquit persons who were really guilty rather than submit them to excessive punishment, and men began to realize the same crimes might be quite different when committed under varying circumstances and the so-called classical school arose whose object was to make the punishment fit the crime not only by a more minute classification of degrees of crime but also by adopting the principle of a maximum and minimum sentence for the same crime according to the circumstances under which it had been committed. This was a great step in advance but of late years those having to do with criminals have begun to understand that there are not only great differences in the circumstances under which the crime is committed but also great differences in the men who commit the crime, and from this has arisen what may be called a neo-classic school which believes not only must the punishment be made to fit the crime but it must also be made to fit the criminal. In other words, there must be an individualization in punishment. Just as in medicine we must treat the individual, we cannot lay down set rules to cover all cases but each case presents a different problem.

What are we doing now in Vermont? We are doing better than in some states but we are far behind others. We have a somewhat elastic method of sentencing criminals and a weak system of parole under probation but we have not gone far enough in individualization to get the good of it; we have not attempted to classify the prisoners scientifically; we have not given power enough to our prison authorities to treat the prisoners by modern methods.

The first object of punishment is to reform the criminal. Are we doing it? We are sending the occasional criminal, the man who commits his first crime or the man who though not naturally degenerate commits a crime under strong temptation, to mingle with and be exposed to the vicious influences of the habitual criminal, the recidivist versed in all kinds of vicious practices. What wonder that he tends to take on the other's antagonistic attitude toward society; that he leaves prison not a reformed man but a much worse criminal than when he went in? There is no doubt that much recidivism is due directly to prison associations.

Is the state protected? No. It has let loose upon society a man much more dangerous than before his imprisonment. It has failed in both the main objects of imprisonment.

All prisoners should be submitted to an examination to determine their mental and moral status. The mentally defective should be segregated. The first offenders also should be kept by themselves and should remain in prison long enough for a board of parole to determine what is the best treatment for the individual and after that if thought advisable, be paroled, but remain subject to the supervision of a probation officer, reporting to him as stated periods.

The treatment of the mentally deficient is difficult but they should be kept under supervision and taught to be self supporting as far as possible. Dr. May in an address to the Medical Extension Course at Fordham University said, "When crimes are committed as they so often are by persons who are mentally defective, a question which can only be decided by a medical commission, the individual responsible should be committed to an institution where the proper care can be given him. Experience has demonstrated that the defective classes are not adapted to either the prison or hospitals for the insane. An intermediate institution suited for their especial needs is strongly indicated.

They should be held under an indeterminate sentence and in many instances confined for life. As a result of hereditary defects, arrested mental development, ignorance and vicious environment, this class furnishes the prisons with our most dangerous criminals.

The habitual criminal should be kept under control indefinitely. It seems absurd to continually send a man to prison for a short term and then let him loose upon an innocent public to commit another crime simply because he has served a certain time and not because he has given evidence of reform. The short jail sentence for the habitual drunkard is ridiculous but unfortunately under the fee system each official makes a little money out of it and so it is continued. An habitual drunkard should be sent to a state farm for an indefinite period where he can work out his keep in the open air, and become a man with some chance in the world. The recent researches of Heckling tend to show that chronic alcoholics fail in varying degree to the Binet test. In other words, become feeble minded. How hopeless to send these people back to the same environment as soon as they have sobered up.

All prisoners as far as possible should be placed at work out of doors and not kept confined in disease breeding prisons. Jails should only contain prisoners awaiting trial and these should be kept apart. The indeterminate sentence, a state board of parole, and an efficient corps of probation officers can carry out these recommendations.

The indeterminate sentence gives the officials time enough to work out the scheme for educative reform, and while lightening the burden of the good prisoner, it keeps the bad prisoner from being a constant menace to society. Of course, too much power must not be given to the board but a shorter minimum and longer maximum penalty should be given by law. The board should be made up of prison commissioners, one lawyer and one physician. Twenty-three states have such laws.

Let us consider for a moment the prophylaxis of crime. The deterrent effect of the fear of punishment undoubtedly prevents many crimes but this effect is best obtained by the certainty of punishment not by its severity and by as much as the community feels that the guilty are not punished by so much will this effect be weakened. Here again we hope for great

things from the indeterminate sentence. If the jury understands that the punishment depends upon the effort of the prisoner to become a better man they will not through sympathy, acquit him if they feel that conviction is best for the state and for the guilty person. They will not (if convinced of his guilt) consider so much the extenuating circumstances knowing that these will be carefully studied and will have much more weight with the board than even with themselves.

It is not fit for a mere layman to criticise criminal procedure but it seems to me that the prisoner is too much safeguarded at the present time, a relic, doubtless, from the time of oppression in the earlier centuries in England. Why a prisoner, manifestly guilty, should be allowed to escape upon a mere technicality—like the leaving out of an unimportant word in the indictment, or an irregular drawing of a single jurymen, cannot be understood by one not versed in the devious windings of the legal mind—but to us it does not appear unreasonable that the state as well as the prisoner should have an appeal, when the action by the lower court was due to technicalities.

It is the lack of certainty of punishment which helps make New York City have ten times more murders per one hundred thousand persons than London, and Vermont last year 20 times that of London while Germany, where the law is most strictly carried out, has only about one-half as many per one hundred thousand as England.

Another evil is the undeserved pardon. Applications for pardon should go before a board and pardon should only be granted upon the presentation of new evidence tending to show the innocence of the prisoner, new evidence showing extenuating circumstances should go before the board of parole. Pardon should never be given on account of political influence or maudlin sympathy. The Constitution of the State of Vermont vests the pardoning power in the governor, so the pardoning board would be only advisory but it would be a hardy governor, indeed, who would pardon a prisoner against an adverse report of such a board. Swift, sure conviction without the hope of undeserved pardon will do much to prevent crime.

We have as yet said little about the causes of crime. This is a subject of much wider scope and the removal of the causes of crime is

the most important problem which confronts the criminologist to-day. Crime is a variation from the standard of conduct set up by a community and a criminal is one who does not measure up to the standard set up by the community in which he lives. An act which may be criminal in this community may be within the law in that. An act which was not criminal 10 years ago may be criminal now. To prevent crime each individual must be educated to live up to the standard or to respect the law; he must be educated to be able to control himself when he feels that he is going to break the law; and finally, he must if possible be educated morally so that he does not have any desire to do the things which the law forbids. This sort of education is best given in the home and in the early years of childhood. The child should be taught obedience and self control as soon as it begins to talk and the education should be continued in school and college.

Over 80% of the boys and over 90% of the girls in the reform school come from broken homes. What further argument is needed? A good home where the children are properly reared is getting to be a rarity in America and it is in the home that the child should receive its best education and anything which tends to make the home more pure and more congenial will by so much tend to lessen crime. Under this head we may mention better sanitation and more hygienic and less crowded homes; improved divorce laws; better and cheaper opportunities for pure amusements and the cultivation of the beautiful, especially in music and art.

Education in the public schools has long been the fetish of the American people and we all know the fate of any one who disturbs a country's ideals, but our public school education is an education from books. If a scholar lags behind, too little attention is paid to the reason of his backwardness, whether mental or physical, and he is simply dropped. If a scholar becomes disobedient and unruly there is no inquiry into the hidden causes of this change, no straightening out of a wrong way of thinking or a wrong conception of life. Medical supervision is our hope but it must be skillfully and conscientiously performed by men who strive to understand the developing mind as well as the growing body. It should mean something more than the mere glancing over the

pupil to see whether he has a rash, enlarged tonsils, or adenoids. It should not be a political job.

The best educators to-day believe that every child should be classified by some such mental test as the Binet-Miner test, which takes about 15 minutes per child. Those more than two years behind the normal should be segregated and subjected to especial treatment. One high grade imbecile or Moron will do more to bring down the moral tone of a class than twenty good children to raise it. All this cannot be done without medical supervision and I fully agree with Dr. Ball of Rutland who is making a fight to have it made compulsory in all the schools of the state. If the law of averages of other states holds true in this state there are now several hundred Morons in the schools of Vermont.

The campaign against the marriage of the physically and mentally unfit should bear good fruit. I have already stated that a great percentage of our criminals, and I may add our paupers, are feeble minded and 70% of feeble mindedness is certainly hereditary. In the last analysis a feeble minded person is one who can not adapt himself to a high civilization, who cannot make good, who can not under modern conditions make a living. Such a person if without help from some outside source, must become a criminal or a pauper. Those of you who have studied the mendelian theory of heredity will understand when I say that feeble mindedness is a recessive and not a determining trait. These recessive traits breed out more quickly than the normal and one of the strongest arguments of White and others against asexualization is that by proper mating this trait would rapidly breed out. Unfortunately the feeble minded do not mate properly. The union of two feeble minded produces invariably feeble minded offspring. The union of an alcoholic to a feeble minded produces feeble minded offspring because those that would be normal seem to die from the effects of the alcohol. The proof that feeble mindedness does not breed out is the fact that it seems to be on the increase. This increase is due in great part because we are taking such good care of them. In the old days in England there were 200 crimes punishable by death and this cut off thousands of these parasites. Now we nourish them, let them breed prolifically. Colonization with

segregation or asexualization seems to be the logical outcome. The moral side of asexualization can not be discussed here. The law has just been declared constitutional in the State of Washington and suits are now pending in New Jersey. Nine states have passed asexualization laws.

This year New York enacted a law inhibiting procreation in habitual criminals, vicious, insane, feebleminded, epileptic and others belonging to the defective class and creates a board to be known as the Board of Examiners of the Feeble Minded, Criminal and other Defectives to have supervision over the matter. The board to consist of one surgeon, one neurologist and one medical practitioner of 10 years' experience.

The uplift of the so-called hill towns of Vermont has lately interested the church federation which is seriously considering the idea of sending good practical workers into these districts. The amount of crime in these retired portions of the state is appalling and little of it is ever known or punished. Larceny and sexual crimes of all magnitude are common, often leading to murder and suicide. There is in these districts a very large percentage of mentally deficient imbeciles and degenerates of all grades. If the good people of Vermont could wake up to the fact that they are sending thousands of dollars out of the State both to foreign lands and to mountain districts of other states which could be used with much better effect in their own back towns, much could be accomplished in ameliorating the truly horrible conditions which exist so near to us.

To the Legislative Committee of the State Medical Society:

At the annual meeting of the Rutland County Medical Society it was voted, in consideration of the increase of crime in the State of Vermont, and especially juvenile offenders, to lay the matter before the legislative committee of the State society, for their consideration and the promulgation of some legislation at the next session of the General Assembly of the State of Vermont.

WILLIAM STICKNEY,
Secretary for the Society.

DISCUSSION.

Dr. E. R. Clark—I have been especially interested in the paper of Dr. Sears because I know something of the inception of the papers which have been read in the Rutland County Society, and as I happen to be at this time the president of that society I am perhaps a little more interested than ordinarily. There are a number of things connected with this

matter which appeal to me, and one is especially in regard to the mental defective who is growing up, the one you call the degenerate. I have not had time nor ability to follow this thing up to its conclusion, but I know this, that there is not a community in the State of Vermont, if our community and the communities with which I am acquainted, are anything by which to judge, but what there are from one to twelve mental defectives who sooner or later are to become public charges. We have an appropriation of \$20,000 a year for the education of mental defectives, and about \$19,000 of that is used yearly. No man who can not be shown to be an absolute town pauper can get one dollar's benefit from that \$20,000. That is why I stand here to-day to speak in the interest of some kind of a training school for mental defectives. It has been shown by the work that has been done in other states that hundreds and hundreds of these people who will become public charges can be made self-supporting and useful citizens. We have one boy in our village, and it is only because we have the Normal School there that we can furnish a special teacher for him, that anybody can do anything with him. They detailed a special teacher to take care of that boy. Even with what knowledge they have to use they cannot accomplish with him what ought to be done.

Another thing in regard to the education of criminals. There is no manner of means, so far as I understand it at the present time, in our penal institutions where the vicious can be segregated from those who are not vicious, and that is why I am standing up here to-day, because I believe that there should some way be found to keep the vicious away from those who have not become vicious, but who can have more harm done to them in three or four hours association with these vicious ones than all the good training of a week, month or year can eradicate, and so I second the motion for the passage of this resolution.

Motion seconded to have the word "sterilization" struck out of the resolution.

Dr. J. C. Colby.—Before we pass on any resolution which has provoked so much discussion, I think we should have the two sides stated in some resolution submitted to each county organization. Our excellent Board of Health is able to carry on a good propaganda because it has the endorsement of the profession. If a small meeting should go on record as passing this resolution, while some feel that it is a good thing, I think that we should begin with a more quiet campaign to be conducted in the different county organizations, and then when such a resolution is put it should be early in a convention and have the whole thing properly thrashed out. This, I take it, is a coming measure, but it seems to me that it would be unwise for the State Society, with such a small representation, to be reported in the newspapers as in favor of endorsing so radical a measure. It seems to me it is a matter of prudence that those of us who feel our responsibilities on a problem which is bound to be taken up in the near future, that we should not obligate the whole medical community to the endorsement of an action on which a good many are not thoroughly informed and an action which a great many will resent as having been a premature step to take. I don't wish to assert that this is too radical a measure for the society, but it seems to me it is premature to bring it forth as a resolution adopted by the society. I think it would be much better, although it has been thrashed out in the Rutland society, if the Rutland society would submit some

facts and then bring the matter up again next year.

Dr. J. J. Derven.—I was appointed a member of the committee that drew up the resolutions that Dr. Marshall has read, and I want to submit a minority report that the word "sterilization," or anything pertaining to such, be struck out of that report wherever it appears.

I believe that the asexualization of criminals is immoral, because it is contrary to the natural law of procreation. Dr. Sears has said that the question of morality could not be brought up here, but I think it can. Dr. Sears also said that this factor of degeneracy is recessive, that is decreasing. If a degenerate marries a degenerate the tendency of their children will be to become normal. If a degenerate should marry a normal person the number of children that would be normal would be very greatly increased, and so increase the population by a great many normal people. Now who is going to set himself up as a judge of who a degenerate is going to marry? Who can say that he has the right to stop that man having a family? What state can set itself up as an authority to do such a thing? The children to be born have committed no offense.

There are a certain number of criminals and a certain number of people without this degenerate cast, that will ask to have this done, because it will relieve them from the responsibility of raising a family and yet permit them the enjoyment of their sexual passions, and in that way you will bring before the public an easy way for the practice of race suicide, and very soon you will have a great many people using this means to overcome the possibility of having a family, and then you will be decreasing your American citizenship. You say that you will pass laws to prevent it, but I say you can not pass laws to do that, because you all know that there are men in this state and other states who are practicing abortion contrary to any law, and they will practice vasectomy the same way. If I went into one of your offices and asked you to do a vasectomy on me, you would not do it. Then why would you do a thing for the state that you would not do for the individual?

It also does this, it relieves the criminal of any fear he may have of impregnating the woman. That will increase venereal disease as he can practice his sexual instincts as far as he wants.

The results aimed at can be accomplished by segregation. The state of Indiana has an institution with 300 women in it, and if they are let out they will immediately go out and become prostitutes and pregnant. I ask you if you think the law justifiable that would allow the State of Indiana to perform a fallectomy on those women to prevent them from having children and save the state the expense of segregation? I don't believe it. The operation on a woman is an abdominal operation, and so has a certain mortality. Are you going to take the patient's life in your hands? And yet the mother more often transmits the disease than the father, and more often to her daughters than her sons.

The constitutionality of this has been brought up. It has been tried in different states and it has been declared constitutional by different states, but it has never been brought before the Supreme Court of the United States, and there is an amendment of the Constitution of the United States that says, "no cruel or unusual punishment shall be inflicted" upon any criminal.

Dr. Marshall.—While I should like to express adequately my admiration for Dr. Sears' paper I cannot readily do so. The society is certainly to be

congratulated upon having so valuable a paper presented to it.

In considering the mentally defective we should bear in mind that seventy-five per cent of our criminals can be reckoned as having been presumptive criminals, exhibiting early in life the traits that indicated their probable development into criminals.

The proper inspection of school children, individually, and with reference to their mental condition and possibilities, as suggested by the work of Binet, would keep us in touch with this large class of defectives and should lead to the adoption of some practical rules in regard to their education and government. As it is the right of every child to be born free from evil hereditary traits some restraint in reproduction by degenerates would seem wise. At present we may not agree as to just what would be the best course, but there is evidently a growing opinion that something on this line must be done.

In the Rutland County Medical Society interest has been aroused in this subject and I will read resolutions passed at our last meeting.

Dr. Sears—Nine states have adopted it. It is simply whether Vermont would be halfway through or at the end of the procession.

Chairman Lindsay—The question is that the word "sterilization" or "sterilize" be stricken from the resolution.

A rising vote was taken on the question, and the amendment lost.

Dr. F. R. Stoddard—I voted not to take this word out. I am in favor of the whole business, but I am not in favor of saddling the vote of 320 men on to 20 men. I think that we should wait, and I move you that this resolution be laid upon the table until next year.

Motion seconded by Dr. Derven, put and carried.

Dr. F. W. Sears—I would like to have struck from the records the part after Dr. Joseph's resolution was laid upon the table, that part relating to the resolutions from Rutland County. Simply strike out that part after Dr. Joseph's motion and the debate upon it, and the motion to lay upon the table. It is simply so that it will not appear that this society is antagonistic on this work of criminal reform.

The chair ruled that Dr. Sears' proposal was not in order.

HOME AND OFFICE TREATMENT OF INEBRIETY.*

BY

T. D. CROTHERS, M. D.,

Superintendent Walnut Lodge Hospital, Hartford, Conn.

The home treatment of inebriety has been almost entirely limited to occasional calls on physicians for relief from states of intoxication, also from acute indigestion, gastritis, severe headaches, pains in the extremities and a great variety of complex disorders which are directly due to the use of spirits.

*Read at the Annual Meeting of the Vermont State Medical Society at Montpelier, Oct. 10 and 11, 1912.

Patients as a rule minimize the influence of alcohol in these conditions and claim that they are due to other causes, which the physician is called on to treat.

If the mental symptoms are very pronounced, both the family and the patient are greatly excited, and distressed, and turn to the physician with eagerness for help.

Within a recent period physicians have been called more frequently, not only to treat such symptoms and there is an increasing consciousness in the public mind that these are physical conditions that can be relieved by medical means and measures. In all the large hotels physicians are constantly employed and their principal work is treating acute stages of alcoholism and inebriety.

The old time prejudices and theories that such persons are simply reckless and vicious and should suffer for their folly, is passing away. Reprimands, appeals to pride and other moral measures are growing less and less. The physician is not always clear as to the best methods to be used in these cases and is often distressed at the impotency of his work.

Many of these patients belong to his most devoted families and after a time he tacitly consents to have them try the gold cure or go to some empiric quack institution. Later the patient returns restored, and buoyed up with a very suspicious confidence that he is permanently cured and seeks every opportunity to sound the praises of these unknown means and methods.

The physician is certain that the managers of these empiric homes are not men of scientific repute and are practically unknown and do not possess anything new in the nature of drugs or means that have not been known before. Here are results which he should have been able to procure, and this brings a feeling of regret and depression that with all his knowledge of the family and the persons he is unable to do what some unknown man with mysterious means has accomplished.

CONDITIONS TO BE TREATED.

If the patient is delirious and stuporous with an alcoholic breath and a clear history of having used spirits to excess, there is present a profound toxemia, and it is well to eliminate the possible causes which may be both exciting and predisposing to this condition, particularly traumatism both mental and physical, sun and

heat strokes and possible uremic poisonings.

Constipated bowels, irritable stomach and dry skin would call for apomorphia in $1/20$ of a grain doses by the needle. The uncertain action of this drug, owing to age, makes it practical to increase the dose. Sometimes $1/10$ of a grain and less works well. This can be repeated every hour, until profound relaxation both vomiting and purging, with free perspiration follows.

The narcotism is sometimes very pronounced, lasting from three to six hours in which the patient can be kept in the open air and carefully watched. On recovery from the drug effects nitrate of strychnine $1/60$ of a grain and $1/200$ of a grain of sulphate of atrophia should be given every three hours the first day, and later every four hours. Finally three times a day.

If delusions or hallucinations are present or states of alcoholic delirium which are called in a general way delirium tremens, very active measures are called for. Derangement of digestion with feeble heart's action, headaches and general prostration are very common and are often symptomatic and refer back to congestion, toxemia and starvation.

If the patient is a periodic drinker and the paroxysm is evidently drawing to a close, this fact should be recognized. If he is a constant drinker and has become impressed with the necessity of abstaining and his mind is irritated and alarmed at the present danger and possible injury that will come from sudden withdrawal, or if the friends and relatives have brought to bear powerful mental reasons for a change in his life, the symptoms will be mentally and physically complex.

If the use of alcohol has followed from exhaustion and irritation, these conditions are intensified by it and if the man after years of continuous or occasional use of spirits comes to the conclusion that he must stop more complex conditions are present.

In all this there are sensory derangements and depressions with faulty and feeble reasoning; states approximating dementia, paresis and epilepsy are present. If the physician is governed by the patient's diagnosis and prognosis he will fall into error. If the opinions of friends are considered and followed mistakes will occur.

The patient is suffering from profound de-

pression of the functional and organic activities with derangement and perversions that call for distinct medical help.

GENERAL METHODS OF TREATMENT.

In delirium, delusions and mental disturbances the apomorphia is the safest and most positive measure that can be used, particularly in eliminating the toxemias. Hydropathic measures which include almost every form of bath possible are the next most effective means. Persons with feeble heart action and greatly disturbed surface circulations find the most practical relief in tub baths, lying in the water for an hour or two at a time. In delirium this measure is a very practical thing. The next best thing is the old fashioned steam bath. The patient is enclosed in blankets and a flood of steam generated under the chair. This kept up for an hour and followed by a vigorous rubbing, is the eliminative measure of great value.

The alcohol can be removed at once without any danger. There are innumerable substitutes of which strychnine and atrophia in doses mentioned above are the most reliable. A number of the vegetable narcotics are also very useful, particularly the infusions. The tinctures containing so high a percentage of alcohol are of doubtful value.

After elimination has been thoroughly carried out, nerve tonics seem to be called for and of these there are a great variety. The phosphate of soda ranks very high in my estimation. Some of the bitter barks are very useful, but they can only be used a short time. Arsenic preparations are always reliable. The iodides and mercurials should be used where there is any history of specific taints.

The condition to be treated is not only toxic, but states of paralysis which depend largely on nutrition exist. If these can be successfully controlled a medicinal power will be manifest. A great variety of conditions exist which cannot be outlined only in the most general way. The obsession to drink or overpowering desire to procure spirits at times suggests spasmodic conditions of the nerve centers. This is based on some states of fatigue, physical or psychical pain for which alcohol is the most pronounced relief for the time being. Its effects are anesthetic, not stimulating. There are states of tension in the organism and alcohol both lowers and raises this, hence it is a popular

drug. The claims that gold and other unknown drugs will remove this are unfounded. Any of the bitter tonics will do this. Opium and belladonna preparations have the same effect. Among the drugs which are most common and practical to destroy this obsession, a solution of quassia is the best.

An infusion boiled down two or three times to increase its power and strength, when given in two ounce doses every two hours, the desire for drink will be broken up. This is probably one of the most complete drugs for that purpose. Small doses of belladonna concealed in whiskey or other mediums will do the same.

A simple and cheap method of producing disgust for spirits is to add tartrate of antimony or tincture of ipecac to the spirits. This in a very short time produces nausea. Then the mental effect of suggesting that the patient can never take spirits again is pressed to its fullest extent.

The cinchonia bark has the same properties as quassia and was at one time used as a specific cure, and most extravagant results were claimed for it. As a cathartic calomel and soda have a peculiar value on the cirrhotic conditions which follow from long use of spirits. The salines are also very valuable, sulphate of magnesia being more so than the others. This combined with bitartrate of potassa can be given a long time with excellent results.

There are a great many drugs which experience will show to be very useful in certain cases. The patient must be impressed as well as his friends with the very serious conditions which both precede and follow the use of spirits. The physician must also recognize that often the use of spirits is a symptom and not the active cause; that there are a great variety of conditions which if broken up and changed would be followed by the subsidence of the drink craze.

The home treatment of inebriety is very often made effectual by sending the patient away to a hospital for a few weeks. In this way the environment can be changed and the mental attitude of the patient can be enlarged. The patient will learn now to treat himself or to take advantage of the conditions which he could not well do at home.

The inebriate resembles the consumptive in this particular. After a few weeks or months residence in a sanatorium they can be returned

to their home life with an increased degree of vigor and an enlarged conception and practical knowledge of how to take care of themselves and act in full accord with the family physician.

In my long experience the most promising cases with permanent recovery have been those who after a short period of treatment by the family physician came under my care. Later they went home and continued under the care of the physician for a period of a year or more until final restoration followed.

I think the combination of hospital and home treatment applied along exact lines covering long periods of years will result in a very large proportion of cures. I think physicians should not shrink from giving medical help to all persons of this class, but rather persist in urging the physical nature of their disability and the need of positive means and measures.

Examples of the work done in this field may be mentioned as follows:

A man of great wealth came under my care many years ago by accident. He recovered and realized his neurotic condition with a tendency to break out in alcoholic paroxysm and since that time has been under the care of two or more physicians at intervals almost every year.

Their assistance has enabled him to live free from spirits and retain a certain degree of health and vigor.

A noted lawyer, now a prominent judge with somewhat similar experience has obsessions of drink neuroses which he is able to overcome by calling in a family physician and following a distinct line of treatment for a few days.

There are in a neighboring city, three men to my personal knowledge who from the exact care and counsel of the family physician are able to live lives of freedom from all use of spirits and do grand work.

In these cases the physician has made a study of the neuroses and psychoses of these persons and is able to determine the best means and measures to prevent them from relapsing. Almost innumerable examples could be gathered showing the home treatment of inebriety by physicians who have convinced the patient of the physical nature of their maladies and the possibility of escaping results that are inevitable without this care.

The treatment of delirium tremens should continue long after the subsidence of the paroxysm. The complex neuroses which follow, breaking out here and there in what seems insignificant symptoms, should be regarded with great seriousness by the physician, as well as the patient and family.

The egoism of the patient that he is entirely well and does not need medical help in itself is suspicious, and the physician should never be convinced, but should do everything possible to impress the patient with the need of caution and exact care, also the danger of relapse from any unusual strains and drains on the organism.

THE OFFICE TREATMENT OF INEBRIETY.

Most physicians find this very unsatisfactory and often such patients are annoying, particularly when under the influence of spirits, and yet service done at this time may be of the greatest value.

Prescribing chloral or opium is perilous. A physician in a neighboring town gave a quarter of a grain of morphia to an office patient who was found dead later. In another instance chloral was ordered. The patient went over to a neighboring saloon and in a state of great excitement committed a homicide.

Narcotics should be very carefully given. Many of the vegetable extracts are useful and sometimes have excellent effects. A strong solution of quassia given every two hours with positive instructions to take it with every drink, and to use the medicine under all circumstances, will soon be followed by an aversion to spirits, and the patient will return wanting more medicine and in a short time stop all use of spirits.

There seems to be a species of quassia poisoning which antagonizes the craze for spirits. No other remedy is so safe for transient treatment as this. If the patient will come to the physician once a day or oftener, he can be given strychnine and atropia and this with the quassia will bring temporary relief and in periodic cases a complete restoration.

A number of quacks doing office business depend on quassia, syrup of ipecac, strychnine of atropia and succeed. Where insomnia is complicated, lupulin in the form of an infusion is valuable. The lupulin pills and tablets do not act so quickly. Valerian is also useful; gelsemanine, cannibas indica and a number of vege-

table narcotics should be tested to determine their influence in the particular case. It will be found that some one of these drugs and many others of the same class have a peculiar specific influence which can be made available in particular cases.

The delirious patient that appeals for help in office treatment calls for the greatest discretion and judgment.

The following illustration shows what can be done. Such a person appeared at the office of a very busy physician, saying that he was crazy and had tried to kill his wife and himself and thus end his troubles. His wife was away and he thought he might get some help from a physician. He had called on several and been repulsed by all, and now was almost in despair.

The physician gave him a large dose of apomorphia and sent him to the stable, telling him to remain until he came back. The effect of the drug relaxed him and he fell asleep. On awakening he was given a warm shower and small doses of the same drug. The next day quassia was substituted. He remained in the stable for two days, then went home. He came back to the physician regularly every day for two weeks. Then at longer intervals.

His recovery was complete. The physician treated him for nearly two years. The man finally succeeded and became wealthy and was one of the warmest patrons of this physician. Another example of a periodic drinker, who anticipating the return of the drink paroxysm appealed to a physician for help. He was insomniac, and excited. Lupulin was given freely, then cannibas indica with free purgation, baths, finally strychnine and atropia. The paroxysm was averted and the next time he was able to overcome it by less drastic means.

Another instance of an eminent lawyer who had secret drink paroxysms and was fearful that these would break out on a public occasion where he was to be prominent. His physician brought him to my care and in a few days by much the same measures he returned restored. From this time on he has been able to control this paroxysm with the aid of the physician.

A third example of an equally prominent man was treated by the family physician with success, then placed under my care and went back to the physician who treated him with the most pronounced results. The office treatment

is often the beginning of a most successful after care and permanent cure of many persons.

A young man in college or away from home comes back with all the symptoms of excessive use of spirits. The father brings him to a physician, and the question is what can be done? First, the physician should never minimize or make light the seriousness of the poisoning from spirits. His prognosis should be always grave, not that he should give drugs continuously, but he should insist that the patient come under some medical care and direction, and that the apparent recovery should arouse greater interest and more unusual care to prevent a possible relapse. In tuberculosis a hemorrhage is significant and ominous. In a young man or woman made stupid by spirits or drugs, there is a pathological significance, equally ominous. Epileptic paroxysms in infancy and early life indicate an abnormality that may develop and break out in the future.

A severe attack of syphilis may pass away, but this fact is always portentous in the future health of the person. Recovery from these various conditions is no evidence that they will not occur again. The same exciting causes will be far more likely to produce the same results. The flippant expression of sowing wild oats in early life, meaning various excesses, gives no hint of the absolute reaping of the harvest that will follow.

The egoism of persons who use spirits and their positive faith in recovery without the use of means, has prevented many physicians from giving positive scientific help. There is an ever increasing army of spirit and drug neurotics which can be treated and restored by home, office and institutional treatment.

This is the great new land of practice at our doors now occupied by quacks and charlatans. The recent graduates have no instruction concerning these patients and what can be done for them. The older physician is puzzled with the complex symptoms and psychical means and measures called for. He thinks surroundings are necessary. He thinks special drugs are required and looks for some specific that has no more existence than one for insanity.

The psychologist and hygienist are startled at the possibility of prevention along these lines and the assertions of a few specialists that alcohol and inebriety are as thoroughly preventable and curable as infectious diseases, sounds

extravagant. Yet the evidence of these assertions are accumulating in every section of the country and the terrible losses that come from neglect of these drink and drug neuroses, which can and will be prevented in the future, is a startling reflection on the limited knowledge of practical medicine to-day.

What the quacks are doing and the demand for patent medicines are unmistakable indications of the new fields of practice that will be occupied by every educated physician in every community of the country.

Stretching out from the persons who come to the physician for help with ability to pay, there is a great army of paupers, defectives and degenerates largely the recruited from the independent, self supporting classes of the community. Men and women who could have been halted, turned back and prevented from reaching these terminal stages, had the family physician been trained, had the friends and public recognized the physical character of their disability.

The great watchword of medical science to-day is prevention; removal of the causes and direction of the patient towards permanent recovery. The alcoholic and inebriate, like all other defectives and degenerates must be studied medically. The great laws of cause and effect must be divested of all moral or theoretical explanations, and recognized the same as any other forces in nature.

Using spirits and drugs in any way is not a moral reflection on the character of the individual. It is evidence of defects, degenerations, whether conscious or unconscious and is devolution, tearing down and destroying everything that is good and true. Such persons are suffering and want help which science and medical expertness can give, and this must begin in home and office treatment.

DISCUSSION.

Dr. Crothers—I have been an honorary member for some years, but appreciate it now.

Dr. Crothers—How did you treat delirium tremens and put the patient to sleep, Dr. French? A great many men, under the old treatment, went to sleep and never woke up. Opium will do it. The modern treatment of delirium tremens is to put a man in a tub of hot water and keep him there and make him vomit until he is reduced in strength, and I think that comes up pretty nearly to the ideal treatment. Any other treatment is not so successful. In my cases we make a specialty of elimination and we get some relief and never get delirium tremens very long.

Dr. F. R. Stoddard—I want to thank Dr. Crothers for the paper. In the treatment of these cases that come to the country practitioner, the building up of the patient adds a great deal of stress to the cure, and as Dr. Crothers has said, and I think, there is no man who goes so low, unless he doesn't want to get well, but what he can be cured of his inebriety, and if he will go to a physician in whom he has confidence he can be helped over the hard places. We have neglected those cases and they have gone from door to door begging for someone to help them, and we should pay more attention to them because there is no other class that needs more help from the physician.

Dr. F. W. Sears—I have little to say, but I want to suggest that those of us who have studied psycho-analysis fully appreciate what has been said. I simply rise to propose a vote of thanks to Dr. Crothers and to move that we make him an honorary member of the Vermont State Medical Society.

Dr. C. L. French—Our institutional work for this unfortunate class of people, when properly conducted no doubt has been a great benefit to many. But much may sometimes be accomplished by home office treatment, if we can get the cooperation of our patient. If he really wishes and is willing to endeavor to overcome the appetite for strong drink we can do much to aid him, and if we succeed we gain the everlasting gratitude of the patient and his family.

Dr. G. G. Marshall—I wish to thank Dr. Crothers for his very interesting and instructive paper.

In regard to the treatment of the drunkard by the State:

The law providing for his commitment to an asylum is good so far as it goes, and should be made use of as a rule instead of rarely as at present, thus providing for the treatment of the drunkard for his habit instead of his mere commitment in jail as a criminal. There he is placed in close contact with actual criminals, and released at the expiration of his sentence, soiled by enforced association with the lowest grades of society, educated in crime, and his habit of drunkenness unimproved. The farm would provide an ideal environment, as an adjunct to the asylum.

Dr. W. L. Wasson—I think it has been a wonderful privilege to listen to the excellent paper on the treatment of the inebriate, and there are so many things in it with which I wish to concur, that I shall not permit myself to enter upon a discussion of them as the hour is already late.

The 1910 legislature passed a law whereby the inebriate and drug cases could be committed to an institution in the state, or placed in the care of a suitable person. These individuals may receive terms from four months to three years. That is because the community is coming to realize that these cases require institutional care. These individuals are the unfortunate victims of habit, and it is necessary that they have the institutional care in order to form new habits and realize that they can get along without alcoholics or drugs. They may stay five years in an institution, and if they do not care to live on a higher plane of life, you may put them out into society and the first report you will get is that they are again taking alcohol or drugs. There are so many things that come to me when I get to thinking about the subject of alcohol that I have an irresistible desire to preach about it. I think that we as medical men ought to take a more decided stand upon this question of alcoholism. It is part of the duty of the physician to carry with him the con-

sciousness and so influence clients with the thought that alcohol is a poisoner and a paralyzer of all functions, both muscular and mental.

Whitney spent a winter among the Eskimo, and he said he soon found he could not take alcohol in any quantity without suffering immediately or after a few moments from it. His experience is in harmony with the scientific investigations of others; that beyond a slight amount of increase of muscular power after a small quantity of alcohol is taken, there is diminution in the capacity for work both mental and muscular.

DIFFERENTIAL DIAGNOSIS OF GASTRIC AND DUODENAL ULCER.*

BY

DR. H. G. STETSON,

Greenfield, Mass.

O. J. L., 49, married, laborer, seen July 19, 1910, with the following history. Three years ago, he fell forty feet from a building, striking on his abdomen. Following this, he had pain in the upper right abdomen for several weeks, gradually getting better. At that time, he weighed 200 pounds. Periodically since then, he has had a return of this pain lasting for two or three months. The pain was constant, sometimes interfering with sleep and was made worse by work. Pain always located in the upper abdomen. While at his work, he sometimes had to stop and lie down. He has never vomited food but vomits up sour water at times. The pain is increased at once by taking food. Bowels regular. Present attack has lasted about three months.

Examination shows moderate tenderness just below the sternum, extending somewhat toward either side. No worse upon one side than upon the other. No gall-bladder tenderness. No tenderness over McBurney's point. No particular tender point in the epigastrium but rather a tender area. No examination of stomach contents.

Laparotomy showed a well marked indurated ulcer at the upper anterior surface of the pyloric end of the stomach. Pylorus patulous. Gastroenterostomy. Normal convalescence. Patient stated three days after his operation that his stomach felt better than at any time before for three months. Seen within six months. Had had no further return of stomach symptoms.

*Read at the meeting of the Connecticut Valley Medical Society.

A. F., 57, laborer, seen December 22, 1910. Has had trouble with stomach for ten or twelve years, unable to state exactly what, beyond the fact that he has had pain, this pain being more severe just before eating. Patient an ignorant alcoholic and previous history very hard to elicit. About one week ago, had severe colic lasting nearly all night, coming on rather suddenly soon after supper. The pain was not accompanied by nausea. During the night, was able to pass some flatus and was relieved. This evening, soon after supper, had a sudden severe epigastric pain, which, after an hour, became centered about the umbilicus. After taking a lot of home remedies for the relief of the pain, he vomited until his stomach was empty but with no relief to his pain. No shock, no sweating, no vomiting of blood.

Examination showed marked abdominal rigidity, tenderness on pressure, most marked to right of umbilicus. Laparotomy. Purulent fluid in the abdominal cavity. Pyloric end of stomach bound down by adhesions. Small, round, perforated ulcer of duodenum, just below the pylorus. Marked infiltration of duodenum. Pyloric perforation closed. Abdomen closed with drainage. Patient made normal convalescence and has been well since.

Mrs. L. S., seen in consultation with Dr. E. G. Best. No history of ill health or digestive discomfort. About 5 p. m., began to have discomfort in stomach and soon vomited a large amount of blood. On the following day, she had a second hemorrhage, following which I saw her. Apparently nearly bloodless; mentally confused; pulse small, almost imperceptible; considerable dark, tarry blood in the feces. On the following day, she vomited a large amount of blood again, dying soon after. Diagnosis—hemorrhage from acute ulcer of the stomach.

A. W. P., 42, merchant, seen April 6, 1912, with Dr. G. P. Twitchell. Has always had weak stomach. In February, 1911, began to have distress after eating, followed later at times by nausea and vomiting. Has occasionally vomited small amounts of blood. Has been on strict diet most of the time since his illness began. Has lost about 25 pounds in weight; unable to take solid food with any comfort, distress usually coming on soon after meals, that is from ten to thirty minutes and lasting for 2 or 3 hours. Constantly constipated. For past few weeks, has

had more distress with nausea and vomiting nearly every day. Soft solid diet agrees best.

Examination shows tenderness just below ensiform and a little to the right of the median line. No tenderness over gall-bladder; no especial tenderness over angle of 9th rib; no muscular rigidity. Laparotomy. Old chronic indurated ulcer on anterior surface of stomach about three inches from pylorus. Slight hour glass contraction. Gastro-enterostomy. Normal convalescence. At present, out of bed; says he feels better than before for months. Eating well with enjoyment. Diagnosis—chronic gastric ulcer.

J. H., 65, laborer. Seen at various times since February, 1911. At first, complained of pain and tenderness coming on before ten in the morning and lasting until dinner. On one or two occasions, it began at four p. m., always relieved by taking food. No nausea; appetite good; no flatulence; no apparent indigestion. Feels well. Says that sometimes he feels as though something was pushing in at the epigastrium. These attacks have continued to the present time, always being relieved by a glass of milk or the taking of food.

Examination shows a tender spot in the epigastrium, sometimes in the middle line, sometimes a little to the right. No gall-bladder tenderness. Never any jaundice. Pain not accompanied by nausea. Diagnosis—chronic duodenal ulcer.

The above are fairly typical histories of gastric and duodenal ulcer as these patients appear to us for relief, illustrating the course which they pursue and, in two instances, the dangers which may be expected to occur in this disease. In the consideration of the so-called round or peptic ulcer, I have purposely included ulcer of the duodenum as well as ulcer of the stomach because so far as this disease is concerned, there is no difference between the upper portion of the duodenum, that is that portion of the duodenum above the opening of the pancreatic duct, and the stomach. Within the past few years, much attention has been paid to this subject by those interested in surgical work and it has been found that unquestionably the disease is much more frequent than was formerly supposed. No more than five years ago, duodenal ulcer was looked upon as a rare disease, but as more attention has been paid to it, and as it has been searched for more carefully, it has been found

oftener, and we have almost reached the point where we can say that duodenal ulcer is not rare, but is as frequent, if no *more* so, than is gastric ulcer. As illustrative of this point, W. J. & C. H. Mayo, in a report of 231 cases of gastric and duodenal ulcers in a period ending in 1905, found the duodenum involved 74 times, but in the 20 months following the date of this report, they found 87 gastric ulcers, and 98 ulcers of the duodenum, and in this series, there were 15 cases which involved *both* stomach and duodenum. Many causative reasons have been offered for the occurrence of peptic ulcer but it must be said that at present, the explanation of its occurrence is still in doubt. Ulcers occurring in the *stomach* appear to be somewhat more frequent in *women* than in men, while ulcers occurring in the *duodenum* are found *four* times as often in men as in women. They are most frequently seen in women between 20 and 40 and in men in the period between 30 and 50.

Occupation seems to have but little influence in its production, beyond the fact that the disease is said to be more frequently seen in those following indoor occupations. It is doubtful if this observation is correct, as peptic ulcer is more frequently *diagnosed* in cities than in the country.

In a certain number of cases, injury has seemed to play some part in its production but this is not sufficiently definite to exclude the cause that would be common to all. There is, in nearly all cases of peptic ulcer, an excess of hydrochloric acid, that condition known as hyperchlorhydria. This is believed to be by many, a *causative* factor in the production of ulcer. It is a symptom frequently present in neurotics and neurotic women are prone to develop acute peptic ulcer. The feeling that hyperchlorhydria is *causative* seems to be increasing, although a few authorities maintain that the excessive hydrochloric acid secretion is a *result* of the irritation produced by the ulcer, rather than the *cause* of the ulcer itself. Excess of hydrochloric acid, however, will not impair the vitality of normal mucous membrane and there must be some further process at work, interfering with the nutrition of the stomach wall, thereby enabling the acid gastric juice to begin its destructive action.

The majority of the ulcers are found in the neighborhood of the pylorus, probably from 75 to 90%. They are, however, present at the car-

diac end of the stomach, on the greater curvature, in the anterior and posterior walls of the body of the stomach. *Gastric* ulcer is more frequently found on the *posterior* wall of the stomach, near the pyloric end, while ulcer occurring in the *duodenum* is most frequently seen on the *anterior* wall. A very common type of chronic ulcer is the so-called "saddle ulcer," which involves both anterior and posterior walls and lesser curvature, just internal to the pylorus. They vary in size. The acute ulcer is seldom larger than a dime and may be simply an erosion of the mucous membrane. The chronic ulcer varies from $\frac{1}{4}$ of an inch in diameter to an area as large as the hand, usually, however, not more than a quarter to half an inch in diameter. Ulcers may be multiple, both in the stomach and in the duodenum, or they may occur in both simultaneously. The *acute* ulcer, or as it is sometimes called, the "*non-indurated*" type of ulcer, which may be round or fissured, possesses no inflammatory thickening and is invariably soft. This type of ulcer cannot be detected by the sense of touch applied to the outer wall and sometimes inspection of the inner surface of the stomach fails to discover its presence. It may involve the mucous membrane alone. It may involve in addition more or less of the muscular wall beneath; or it may be of a greater degree, involving the serous coat of the stomach. Whatever its size or its depth, however, it is characterized by soft non-indurated margins.

The pathology of the *chronic* ulcer is markedly different, usually surrounded by fairly healthy mucous membrane, rather round in shape, its edges sharply defined and surrounded by a zone of infiltration. Its depth varies, but almost invariably it involves the muscular wall. Viewed from the peritoneal side, it shows a puckering of the tissues with more or less redness and marked infiltration about it. There are often more or less marked varicose veins to be seen in close proximity. One of the marked characteristics of the chronic ulcer is the production of adhesions to nearby structures, thus attaching the stomach to contiguous viscera, in this way causing more or less interference with the motility of the stomach. Contraction occurs as would naturally be expected from the presence of fibrous tissue, resulting in more distention of the stomach walls and in more or less stenosis of its outlet. The ulcerative process may be so extensive and deep as to result in perforation.

If adhesions have occurred to nearby viscera of sufficient extent, then perforation will result in a localized circumscribed abscess. This is most likely to occur in perforations of the *posterior* wall, the stomach most often becoming adherent to the pancreas. Ulcers upon the *anterior* wall, however, are less likely to result in adhesions, and perforation usually means escape of the gastric contents into the general peritoneal cavity. Infiltration of the stomach and surrounding tissues, together with the adhesions which have formed, are sometimes sufficient to give rise to a well defined tumor in the epigastrium, which has been mistaken occasionally for a malignant growth and the patient condemned to death from the pathological conditions, which could undoubtedly have been converted into a complete cure. There seems to be no question but that one of the pathological complications, or better perhaps, one of the sequelae of gastric ulcer is gastric cancer. It has been estimated that 6% of all ulcer cases ultimately develop cancer. The pathologists have shown us illustrations of slides taken from chronic ulcer of the stomach showing unmistakable beginning cancer nests.

The *symptoms* of gastric ulcer are not often typical, but present such a diversified clinical picture that sometimes the most critical observation and careful judgment are necessary to establish a diagnosis. Both the acute non-indurated ulcer and the chronic indurated types may be latent for long periods, the first evidence of their presence being manifested by the occurrence of some complication. This difficulty of making a diagnosis is even greater when the ulcer is situated in the duodenum. In fact, it has been stated in past years that the diagnosis of duodenal ulcer was *not possible* to make and it has even been stated very recently that at least one-half of the cases present *no* symptoms, calling attention to their presence, before the occurrence of perforation.

Duodenal ulcer is much more likely to be latent than is gastric ulcer.

Of first importance in an endeavor to establish a diagnosis of gastric and duodenal ulcer is great care and detail in securing the patient's history. This is a very important part of the examination and rarely is sufficient time given to it. When present, the gastric symptoms of this disease are pain, tenderness, hemorrhage, vomiting, hyperchlorhydria and disturbed gas-

tric digestion. All of these are seldom present in any case of ulcer.

Let us now take up these gastric symptoms in further detail. First, pain: this is due to three causes: first and most likely, irritation of the sensory nerves at the base of the ulcer by the presence of food. Second, irritation from the hyperacid gastric juice, quickly increased by the presence of food in the stomach. Third, muscular contractions of the walls of the stomach in the process of gastric digestion. From 75 to 90% of the patients suffering from gastric ulcer complain of pain at some time during the course of the disease. It may be severe or mild, steady or colicky, sometimes described as boring or burning. Its location is usually in the epigastrium, most frequently just to the left of the ensiform cartilage or along the border of the left costal cartilage, downward and outward from this point. It may be occasionally reflected to the back, sometimes patients describe their pain as being "deep in," "going clear through to the back." The pain usually occurs in gastric ulcer soon after the taking of food, that is from 15 to 30 minutes. It may be delayed an hour. It may be delayed two hours or even more. The pain persists until the food is passed on into the intestine or until vomiting occurs, relieving the stomach of its irritating contents. Occasionally, the pain is *relieved* by pressure but ordinarily this makes it *worse*, in fact, many times patients can hardly bear the pressure of their clothing, particularly women.

The pain of ulcer situated in the *duodenum* is usually in the median line or more to the right and is, as a rule, more variable in its location than that of ulcer of the stomach. Its characteristics are similar to gastric ulcer pain, but its time of occurrence is pathognomonic. It almost invariably occurs at least three or four hours after meals and not infrequently is very regular in its occurrence, especially at night, often wakening patients at a certain hour. It may last from a few minutes to an hour or two but it is characteristic that it is almost invariably relieved by the taking of food, often even liquid food.

In one of the histories which I read at the beginning of this paper, the patient states that he gets relief within a few minutes after taking a glass of milk. The pain of ulcer situated in the duodenum is less likely to be referred elsewhere, although sometimes it is felt in the lower chest, sometimes in the right iliac region.

The *tenderness* of ulcer situated in the stomach is most noticeable at the point of greatest pain, just to the left of the ensiform cartilage. This tenderness is best elicited by *light pressure*. This point should be carefully held in mind. *Deep pressure* may entirely obliterate this tenderness. The tenderness is hardly a tender *point* but might better be termed a tender *area*. Boas has laid much stress upon the presence of the tender point in the back to the *left* of the 10th and 12th dorsal vertebrae. It is many times present, and *when present*, is diagnostic, as there is no disease of the upper abdomen which gives rise to it. Unfortunately, however, others have not found the same dependence to be placed upon it that Boas has.

The *tenderness* of *duodenal* ulcer is less distinctive and more difficult to ascertain, due undoubtedly to the deeper position of the duodenum. When present, it is to the right of the median line and at the costal margin. There is no point of referred tenderness.

Hemorrhage, like pain, is pretty constantly seen at some time in the course of the disease, whether the ulcer be situated in the stomach or in the duodenum. It may be in small amounts, sometimes only ascertainable by means of laboratory tests. Often seen only as streaks or small clots in the vomited food. It is less evident in the feces and there it is seldom bright, being usually tarry in its appearance. The hemorrhage from *acute* ulcer is usually profuse and not infrequently is due to the erosion of a small vessel, although capillary oozing from the gastric mucous membrane, which seems to shed blood as water exudes from a sponge, has occurred many times resulting in a fatal outcome. While the hemorrhage from an acute ulcer may be large in amount, it is seldom fatal. The recovery from the loss of blood seems to be fairly rapid. Hemorrhage takes place usually during the process of digestion, seldom when the stomach is empty, probably being induced by the distention of the stomach by the presence of food and gas. It seldom gives rise to pain. There is usually a feeling of faintness and weakness and soon the patient vomits blood, or if the ulcer be duodenal, blood will be discovered in the movements on the following day.

Hemorrhage from the *chronic indurated* type of ulcer is of a somewhat different character. There is usually less in amount but it is more constant and persistent, not infrequently found in small amounts in most of the food that is

vomited and in the stools for rather long periods of time, and in this type of ulcer, it is a most common cause of death. Its presence, either in the vomitus or in the stools rather persistently, is one of the most reliable of *all* symptoms of peptic ulcer, and its disappearance may be looked upon as one of the surest tests of cure that we possess.

Vomiting occurs at some time during the progress of the ulcer. In the early stages, it is due to irritation, to the effort on the part of the stomach to get rid of the irritating material. It is sometimes due to that condition known as pylorospasm, the muscular fibers of the pylorus spasmodically closing up in an effort to protect the ulcer existing near it from the encroachments of the irritating food and gastric juice. Later, vomiting occurs as a result of stagnation of food in the dilated stomach, the result of more or less stenosis of the pylorus. Vomiting in itself offers much relief to patients with gastric ulcer but unquestionably impairs their nutrition and, like the vicious circle, tends to keep up the process which it seems to relieve. Vomiting is *not* common with *duodenal* ulcer, although patients sometimes complain of *nausea* from the severity of pain.

Under disturbed gastric secretion, we have the increased hydrochloric acid content and later, when the stomach has become dilated, the absence of hydrochloric acid and the presence of acids of fermentation.

In summing up the diagnosis, the age, sex, appearance, and above all, the history of the patient must be taken into careful consideration. They may have one or rarely all of the cardinal symptoms of ulcer but the decision must be made upon the picture as a whole.

Consider for a minute the most serious accident, aside from hemorrhage, that may occur in this illness, perforation. The liability of this accident is naturally rather hard to estimate but it has been stated to occur in from 6 to 15% of all ulcer cases and as we learn to diagnose peptic ulcer with greater accuracy, even the latter figure of 15% may prove to be too low.

While more ulcers are situated upon the posterior than upon the anterior wall of the stomach, at least three-quarters of the perforations occur upon the anterior wall and practically all perforations of the duodenum are upon the anterior wall. It usually occurs without warning, although the symptoms which it gives rise to are

not always sudden in their onset. In illustration of this is a case operated upon by me 18 months ago, of a woman about 50 years of age seen in consultation with Dr. Greenough. At noon, just as the doctor was leaving, the patient called her back, saying that she had a funny little pain in her stomach, that it was not severe but was uncomfortable, and asked for its explanation. This pain did not become severe nor was there anything to excite any particular uneasiness for three or four hours, yet when this abdomen was opened 12 hours afterward, she had a ruptured chronic ulcer, through which a small pencil could easily be pushed.

If the perforated ulcer is situated on the posterior wall of the stomach, adhesions are most likely to have occurred between the stomach and the adjacent viscera, as I mentioned previously. This lessens very materially the dangers of a general perforative peritonitis, the result of this condition being usually a circumscribed localized abscess. Perforation of an ulcer on the anterior wall of the stomach, a most common occurrence, is seldom preceded by any inflammatory adhesions and general peritonitis is quickly set up. It is most likely to happen following a full meal or during vomiting, or occasionally after some unusual exercise. It is usually ushered in by acute sharp pain in the upper abdomen. Shock is stated to be commonly present. In the few that I have seen, there has been no shock. Vomiting may or may not be present but even when present, the vomitus seldom contains blood.

Perforation of the duodenal ulcer is much more likely to occur than of the gastric ulcer, thus rendering duodenal ulcer a much more serious disease than ulcer of the stomach. The symptoms of peritonitis resulting from perforated ulcer, I need not dwell upon. They are sufficiently familiar to you all to render that unnecessary. Even if we are unable to say what has happened, we can say truthfully and should say quickly that something has happened demanding surgical intervention and such should be carried out at the earliest possible moment.

Although ulcer of the stomach and ulcer of the duodenum are unquestionably due to the same cause and pursue to some extent the same course, it should be borne in mind that ulcer of the duodenum is much less likely to be influenced by medical treatment than is ulcer of the stomach, and further, that complications such as a rapidly

fatal hemorrhage and perforation are more likely to occur than in gastric ulcer. For that reason, if possible, attempt should be made to differentiate the two conditions. It has been found in gastric ulcer that patients are, as a rule, more commonly under 40 years of age, while duodenal ulcer is more commonly seen in patients over 40. Sex has some influence, duodenal being seen in men in a proportion of four to one. Vomiting is a common symptom in gastric ulcer, while in duodenal ulcer, it is not conspicuous and is frequently absent. In gastric ulcer, it occurs soon after eating, rarely longer than an hour, while in duodenal ulcer, when occurring at all, it takes place from two to four hours after eating.

Hematemesis is frequently present in gastric ulcer, occurring in nearly all cases at some time in their history, while it is very infrequent in ulcer of the duodenum. On the other hand, blood in the stools is only occasionally found in gastric ulcer, while it is a common incident in ulcer of the duodenum. The pain of gastric ulcer is in the epigastrium and usually to the left of the median line and is usually associated with a marked point of tenderness in some locality with an additional point of tenderness in the back to the left of the 10th to 12th dorsal vertebrae. The pain of duodenal ulcer is less well defined as is also the tenderness and there is no referred tenderness. In gastric ulcer, pain usually appears soon after eating, while in duodenal ulcer it does not occur for from two to four hours.

To review again, the more important differential points are, first, pain in duodenal ulcer comes on more frequently just before the next meal and is almost invariably relieved by the taking of food, in contra-distinction to ulcer situated in the stomach. Second, the failure of the pain to radiate is significant of duodenal ulcer. Third, there is more frequently a visible amount of blood in the stools in duodenal ulcer. Fourth, with duodenal ulcer, the patient has a good appetite with slight disturbance of digestion beyond his pain and often his appearance is that of good health.

Given a definite diagnosis, therefore, of peptic ulcer, whether acute or chronic, non-indurated or indurated, what advice shall we deem best to give a patient? Upon this point, there is as yet no settled definite opinion but it would seem that the medical and the surgical sides were coming closer together. For an acute ulcer, there seems

to be no question in the minds of all that the best and most satisfactory treatment is entirely medical, rest in bed, restricted diet, possibly rectal feeding, carefully prepared or pre-digested food, freedom from care and worry and all efforts made to improve the general condition of a patient. Usually in from four to eight weeks, this course results in complete cure.

In regard to the chronic indurated or non-indurated type of ulcer, there is less unanimity of opinion. Even here, however, it would seem wisest and best that careful, skillful, systematic, medical treatment be carried out for a period of six to ten weeks. Many chronic ulcers of the stomach have been cured by this course. Unfortunately, however, there is a tendency to relapse and in one or two years, these patients have returned presenting the same symptoms for which they consulted us 12 to 24 months previously.

Surgery of gastric or duodenal ulcer has, up to the present time, shown some excellent results and in view of these results, it would seem wise that patients presenting the symptoms of chronic indurated ulcer of the stomach and duodenum, not relieved or cured by six to ten weeks of careful, skillful, medical care, should be operated upon and a gastro-enterostomy or a pyloroplasty or other mechanical procedure carried out that may seem best suited and adapted to the individual case. Gastro-enterostomy has not been carried out sufficiently often or for a sufficiently long period so that we can state as positively as will later be possible the ultimate results for a period of years, but in the patients operated upon, after periods of five to ten years, the results in the class of cases in which these operations are indicated, have shown a cure without relapse in over 90%, which is far superior to that obtained by medical means in the same type of case.

In view of the fact previously outlined regarding the dangers arising from duodenal ulcer, surgical interference is without question the safest and most satisfactory treatment and should be advised.

And finally, may I ask that in patients presenting themselves to you with a history of digestive troubles, covering months and frequently years, that you enter very carefully into the history of their illness, that you particularly remember the cardinal symptoms of gastric and duodenal ulcer, pain, tenderness, hemorrhage, vomiting, hyperchlorhydria and their relation to the dis-

case in question; that you remember that these patients are long sufferers and that if you do finally make a diagnosis of peptic ulcer, bear in mind that their disease is serious and should be dealt with accordingly; that medical treatment should be carefully and skillfully carried out for a limited time, when if a cure doesn't result, surgical treatment should be sought for; that the dangers of the chronic peptic ulcer are greater uncured than when operated upon by anyone competent to do so.

"If the vacuum bottle is used in infant feeding, the following points must be observed: Heat milk to 150° F. (by thermometer) and pour in bottle previously warmed within by hot water; stopper tightly and keep in warm place; at feeding time take temperature (thermometer kept in bottle to avoid infection) and if below 115° F. discard, if above, allow to cool in nursing bottle. Never use milk if below 115 F., which is ordinarily reached in eight to ten hours; below this point the bottle becomes an incubator for germ life and the milk a culture medium.

"Blackening of the skin from wearing gold jewelry is due to the oleate of gold either produced by the natural oil of the skin or to cold cream and similar preparations applied. Even pure gold will darken the skin in certain persons. Sulphur deposited on the skin from within or from the atmosphere sometimes plays a part.

"The Bier treatment of tubercular joints is greatly aided by the simultaneous use of potassium iodide, 10 to 40 grains t. i. d.

"Plaster of Paris in time produces softening of the bone to which it is applied.

"Thickening of the foreskin of the clitoris, which is easily removed, is a very common cause of sexual indifference in women.

"Syphilis without the primary chancre is rare, but possible—called by the French, syphilis d'emblee.

"Section of the vagus nerve in 37 rabbits caused gastric ulcer in 27.

"Difference in physical signs of right lung apex as compared to left is due to immediate contact of trachea with right apex and to the reduction of the right apex in size from encroachment of the large vessels. Little or no difference in chest measurements of two sides in right and left handed persons."—*Charlotte Med. Jour.*

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EDITORIAL.

AN ATTITUDE ON DRUGS.

Drugs, by themselves, have restored to usefulness and saved the lives of more people than all other curative attempts combined. And one need not be a crank on drugs to appreciate this.

When some secondhand writers haven't anything else to do they attack the medical profession. When some individuals of a lower state than the former, wish to become conversational factors they attack the practice of medicine and make the administration of drugs the goal of their rantings.

Even some "doctors" have styled themselves *drug nihilists*. (Would it be presumptuous to assume that were it not for a properly administered dose of castor oil or fennel tea, the "drug nihilists" might not be to-day?) Thereby hangs the tale—the foolish, yea ignorant, antagonism of some medical men to the use of medicinal substances.

What is the reason for this attitude? Manifestly ignorance of the therapeutic action of any given drug. Of course a man is not to be blamed for not giving a drug he has no knowledge of. It might act as a poison. But is that a good reason why he should condemn drugs in general to his patients or the laity? We each know *one* such ass. Let's hope it's one and the same individual that we all know.

The perverted education the laity receive on the subject of drugs, has this directly deleterious effect—many of them will refuse medicinal aid when medicines mean their only salvation. The word drug is probably derived from the Dutch *droogen* meaning dry. In reality dry herbs, leaves, etc. A drug is a mineral, vegetable or animal substance employed in the treatment of physical or mental derangements.

In the ultimate analysis of its action every drug is a food. In other words it supplies some want of the ailing, consequently defective body. That we have not a thorough knowledge of these wants is due to the fact that we do not as yet fully understand the metabolism of the animal cell. A great deal of knowledge, however, has already been gathered. Much of it is empirical and much more experimental. There is not a man in all this wide world who knows enough about drugs to sentence them to oblivion as many of the misinformed laity and some misanthropic in the profession would fain do.

Under the delusion of progress and sophistry men here and there are tearing down the edifice of well tried experience. They are not making any attempt to rebuild. Quacks quick to note the tendency have swooped down upon the public in alarming numbers. That is the main reason for the existence of Christian Science, osteopathy, Emmanuel movementism, magic boots, electric belts, telepathic waves, etc.

Indeed there are measures employed in special cases of medical practice that are superior to the action of drugs. For example, mechano-therapy, diet, climate, light waves, hydrotherapy, heat and the various uses of the electric current. The actions of almost all of these however, are preventative and restorative. Splendid things in their domain and their domain is large. But one can't massage away an attack of malaria. Have you tried diet in myxedema and exophthalmic goitre? The electric current is useless in maniacal excitement, epilepsy and grippe. Can you imagine the results climate would give in the exanthemata?

Nature! So many cry nature, that in the din it becomes hard to tell who are really natural and who use it to cloak their shortcomings. All respect to the physician who is alive to the laws of nature. His therapy is superior to that of his confrere whose sole reliance is drugs. But isn't nature responsible for some very pitiable outcomes? Left to itself, very frequently its ineffectual efforts to reestablish normal conditions is productive of very dire results.

Imagine nature taking its course in smallpox, diphtheria, syphilis, heart failure, hemoptysis, hematuria, metorrhagia and inflammation of most skeletal cavities.

In the proper application of drugs we almost attain the impossible. The world is still ringing with Ehrlich's famous discoveries in the treatment of syphilis and sleeping sickness. Wassermann's colloidal treatment of cancer promises fair to become one of the greatest achievements in modern medicine.

Is there a man in the profession who does not know of the incalculable benefits derived from animal extracts?

Tetrahexamethylamine is a magic wand in the treatment of recent and chronic infections. Natural means and physical culture can not take the place of the salts of calcium and iodine

where they are indicated. Meltzer in his discovery of the potentialities of magnesium sulphate in the treatment of tetanus and erysipelas and the relief of pain has turned a commonplace drug into one of the greatest boons to humanity. The most prejudiced can not deny the value of quinine, iron and oil of wintergreen.

Anyone of the heart stimulants must be given credit for innumerable lives saved. To doubt this, is either an admission of mental blindness or of such prejudice that a straight path is called crooked because it best fits the perverse mind. Talk as you have a mind to, about regular living, slow eating and proper rest and exercise, people *will* fatigue themselves because they must, they *may be* compelled to lead an irregular life, and the manner of eating is as much a characteristic of individuals as their speech. To effect change in the mode of life of these people is a social problem that the physician can have no control over, but he *can* treat them when they have overstepped the limit. Stomachics, digestives and sedatives then become as necessary as food or drink. The most ranting anti-drug fiend *has* and *will* turn to one of these classes of drugs when the necessity for it is stronger than the objection. We all know such individuals. A howling anti-medicine, anti-physician, anti-treatment, physical culturist was asked why he drank coffee. Being off his guard, he nonchalantly remarked that he needed that food to start his day's work on. Food! Caffein! Delicious food. Many people will not drink sarsaparilla because it is a drug, but *will* drink root beer because it is not. Is it not, though?

The unfortunate thing is, that drugs are confused with drugging. Most of the drugging is done by the public itself anyway.

Drugs are a science. In fact one of the oldest. We must study them as warriors study

their weapons. They are our weapons against disease when disease has already occurred. It is a science which must be the peculiar property of physicians, for only they who know can judge. We have much to learn and probably shall never cease learning until humanity is physically and mentally perfect. In drugs as in foods we may find something to suit every taste. By taste is here meant idiosyncrasy.

Idiosyncrasy to certain drugs on the part of patients has turned some of them into drug pessimists and discouraged physicians away from some splendid medicinal aids. In the use of drugs we are not trying to substitute nature; we are trying to help it out when it is floundering. There are very few remedies one can make a habit of. From the physiological standpoint it is far more preferable to make a habit of taking cascara than being habitually constipated. No one will deny that digitalis and potassium acetate are more desirable than anasarca. Do you know of any man who doesn't want anything but natural aid in an attack of gastro-enteritis? Try physical means on the ordinary run of individual suffering from constant heart burn. If after a year the patient still believes in you, try the ordinary remedies. Your patient will be very happy to make a habit of atropine, soda, etc. You will also be happy.

Drugs must be studied. Special meetings of county societies should be devoted to therapeutic progress and therapeutic action. Successful machinists are continually seeking to improve their implements. We ought to do the same with ours. Untoward action of any drug should be reported at the meetings of medical men. Much knowledge goes lost by the failure to do so.

In conclusion medical schools have in recent years realized the value of such study and in the more progressive schools (University of Ver-

mont, University of Pennsylvania, Harvard Medical School, Cornell and in but few others especially including whichever school Torald Sollman teaches) pharmacology is studied from the broadest possible standpoint. Drugs may not be necessary when eugenics has made humanity perfect and the social system so changed that everyone has plenty of time. Until then we must apply them to make humanity as perfect as we can.

B. J.

NEWS ITEMS.

Dr. F. W. Norris, formerly of Swanton, who has been studying abroad for several months, has moved to St. Albans, Vermont.

Dr. H. P. George, Baltimore Medical, 1912, has opened an office in Claremont, N. H.

Dr. G. R. Davis of Bethel, Vt., was married August 3rd to Miss Mabel Kerr of Bethel.

Dr. Edward T. Fairchild has just been elected President of New Hampshire College. He comes from Lawrence, Kan. He is superintendent of public instruction of that state.

Dr. R. W. Holmes has resigned his commission in the army and taken the office formerly used by Dr. J. B. Hyland in Keene, N. H. Dr. Holmes graduated from George Washington University.

Health Officer Dr. Clarence F. Ball has resigned, due as he says in his letter, to the fact that Mayor Charles L. Howe does not cooperate with him and to a general lack of harmony in the health department. Dr. Ball says the city has not paid him for vaccination or examination of the city water supply. He also says the present smallpox situation in Rutland should give rise to alarm.

The series of lectures which Prof. Carl von Noorden of Vienna is to deliver in several American cities on "New Aspects of Diabetes, Pathology and Treatment," will be issued in book form, October 26th, immediately at the close of the New York lectures, by E. B. Treat & Co., New York, who have published all his other monographs.

Dr. Leonard W. Williams, instructor of anatomy at Harvard Medical School was re-

cently killed in an elevator shaft in the Laboratory building. He was riding in the lift which is supposed to be operated by the person using it, and standing near the exit of the car, struck his head near the wall of the shaft, the blow making him unconscious. As he was alone in the elevator at the time, the car without resistance, continued to move up until Dr. Williams' head and body became wedged between the elevator and the wall of the shaft supporting the car, where he was found some fifteen minutes afterward.

Dr. M. Benmasche, recently from London, England, has located in Nashua, N. H. He was formerly in practice in Virginia.

James Buchanan Brady, popularly known as Diamond Jim Brady, has given \$20,000 to Johns Hopkins Institute. During Mr. Brady's life he will in addition pay \$15,000 annually to maintain the institute. This is the first institute of urology in America. It will accommodate fifty public patients.

Dr. W. G. Caine has removed from Epping, N. H., to Nashua.

The governors of the New York Skin and Cancer Hospital announce that Dr. L. Duncan Bulkley will give a fourteenth series of Clinical Lectures on Diseases of the Skin in the Out-Patient Hall of the hospital on Wednesday afternoons from October 30th to December 18th, 1912 at 4.15 o'clock. The course will be free to the medical profession on the presentation of their professional cards.

The American Association of Clinical Research held its fourth annual meeting at the New York Academy of Medicine, November 9th, with the following programme:

1. Call to Order.
2. Opening Address by the President, Alvin Roy Peebles, M. D., Boulder, Colorado.
3. Reading of Records. Report of the secretary and Treasurer.
4. Election of Officers.
5. New Business. Charter. The Boston Polyclinic. The Next Place of Meeting.
6. The Negri Bodies, Simon Robert Klein, M. D., New York, N. Y.
7. Atrophic Serum for Cancer, Frederick Gaertner, M. D., Pittsburgh, Pa.
8. Radium and Thorium Therapeutics, Frank H. Blackmarr, M. D., Chicago, Illinois.

9. Electricity: A Neglected Resource in the Treatment of Rectal Diseases, Frederick Horace Williams, M. D., Boston, Mass.

10. Personal Observations on Indicanuria, F. C. Askenstedt, M. D., Louisville, Ky.

11. Therapeutic Possibilities of Manual Adjustment, Dr. R. Kendrick Smith, Boston, Mass.

12. Medical Efficiency, Ira S. Wile, M. D., New York, N. Y.

13. Disease Conditions Expressive of Correct Diagnosis, James Krauss, M. D., Boston, Mass.

14. a. Scientific Interpretation of Dreams by Jung—Freudian Method.

b. Vaccination Against Tuberculosis and Typhoid.

c. The Treatment of Malignant Streptococcus Sore Throat, Leonard Keene Hirshberg, M. D., Baltimore, Maryland.

15. Ectopic Pregnancy, Frank L. Newton, M. D., Boston, Mass.

16. Paper, E. Stillman Bailey, M. D., Chicago, Ill.

17. Other Papers.

EVENING SESSION AT 8 O'CLOCK.

1. The Two Most Far-Reaching Discoveries in Medicine, James Krauss, M. D., Boston, Mass.

2. The New Chemistry and the New Materia Medica, Hermann Hille, Ph. D., Chicago, Ill.

3. The Acid Test in Therapeutics, John Aulde, M. D., Philadelphia, Pa.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

INFECTIONS OF THE EXTREMITIES.

P. G. SKILLERN, Philadelphia (*Journal A. M. A.*, March 16), says that infections of the extremities are often of such serious economic importance that they should have a degree of care equivalent to that bestowed on serious abdominal or cranial injuries. Taking for example a felon; he has until recently followed the orthodox method of making a large incision, with the result of slow recovery and serious disablement of the patient for considerable time. He quotes from a recent address published in the *British Medical Journal* on Bier's hyperemic treatment, that in no case of thecal whitlow is more than a minute incision required under Bier's treatment. The application of the constricting bandage causes ready discharge of pus and painless and satisfactory improvement. Skillern has found this method not only satisfactory but has greatly increased its efficiency by immersing the part, immediately after the pre-

liminary puncture incision and the application of the constricting bandage, in a vessel containing hot Wright's solution. The local hyperemia produced by the hot solution augments the passive hyperemia of rubber bandage and the sodium citrate maintains the liquidity of the lymph and blood, preventing deep coagulation, while the sodium chloride expedites osmotic transudation of serum from the engorged vessels. It is well also to gently irrigate the depths of the wound through a cannula at the outset. The pain is relieved in a very few minutes and in a half hour the change is remarkable. After pouring off the supernatant solution there will be seen in the bottom of the vessel myriads of pus-cells and necrotic particles. The rubber bandage is then removed, rubber drainage inserted and a drain poultice of gauze saturated with Wright's solution applied. Equalization of circulation is secured by a compression pad of non-absorbent cotton and the dressing completed by a muslin roller bandage and elevation of the part. The patient is directed to get some sodium citrate and make up a solution for home use by adding two and a half teaspoonfuls of common salt and a large teaspoonful of the citrate to a glass of hot water, and with this keep the dressing moist and warm. He is also directed to get a rubber bandage and apply it with the usual precautions for thirty minutes every three hours. Skillern also uses bacterial injections in the treatment of these cases. The Martin bandage when applied is put on above the elbow or the knee so as to constrict the interosseous veins and is spread over an area of four or five inches to lessen the liability of injury to large nerves. The limb should become a dusky reddish hue and the pain should be relieved but not abolished; if increased the bandage is too tight.

INDIVIDUAL HYPODERMIC SYRINGES.

J. T. GREELEY, Nashua, N. H. (*Journal A. M. A.*, March 16), enumerates the disadvantages of the ordinary hypodermic syringe, the occasional leaky joints, the sticky or leaky piston and the rusty needles. He illustrates a form of instrument which can be used only once and for individual cases, with a flexible tin receptacle containing the solution, and which can be thrown away immediately after use. He has had these collapsible hypodermic syringes made, filled, labeled and placed in a small pocket case containing one dozen assorted drugs and doses, and has found them not only a great convenience and time-saver, but in two accident cases in which water was not available he believes they have been life-savers.

THE COLON BACILLUS.

R. T. MORRIS, New York (*Journal A. M. A.*, March 2), suggests that the colon bacillus may be at the present time the chief regulator of population and cause of the decadence of old age. Bacteria, which formerly caused disastrous epidemics, are practically under control through the progress of preventive medicine, but other bacteria, and especially the one in question, are still carrying on Nature's plans of reducing excessive population. The reason that the activities of this group of bacteria have been so long ignored is that the methods of search for them are of recent development and do not yet cover all the field. While we recognize the destructive activity of the colon bacillus in gangrenous appendicitis, we do

not so often trace its activity from this source to distant parts, such as infections of the pylorus or duodenum. From his point of view, the colon bacillus is often the original malefactor in these cases, though the adhesions that it produces in the upper abdomen are often overlooked by the physician. He believes it to be the frequent cause of ulcers of the stomach and duodenum and its activities in gall-stone disease have also been recently recognized. Pancreatic disease and diabetes can also be thus produced, and the proliferation of connective tissue which it causes is, he suggests, also seen in most cases of arteriosclerosis. The toxins it produces also attack the nervous system, and it may thus cause neurasthenia. If we are to assume that the colon bacillus is the cause of arteriosclerosis, we can easily rank this organism with the tubercle bacillus in increasing the death-rate. Experimental injection of the colon bacillus into the circulation has caused spinal disturbances, and Dr. H. G. Harris has found it abundant in the urine of a patient with infantile paralysis. One of these disorders, colon bacillus intoxication and infantile paralysis, may prepare the way for the other. One of the largest groups of cases in which the influence of the colon bacillus is overlooked by clinicians is the infections of the kidneys, and this is specially unfortunate since we can so readily control its growth in the urine by hexamethylenamin and benzoate of soda, as has been shown by W. H. Thomson. From the rectum it may readily affect the neighboring organs through the urethra and the vagina and be the cause of intractable leukorrhoeas, tubal infection, urinary incontinence and sterility. Its effects are sometimes so remote that it is not suspected, and Morris mentions as an instance a case of choroiditis cured by operation for appendicitis.

INFANT MORTALITY.

In his President's address at the meeting of the American Medical Association, Dr. ABRAHAM JACOBI, New York (*Journal A. M. A.*, June 8), took up the subject of the best means of combating infant mortality, after first noting the growth of the Association and the desirability of further increasing its membership. According to the New York Milk Committee and other authorities, 17 per cent. of infant deaths are caused by congenital troubles. Two great remedies are recommended: 1. No midwife be allowed to handle any of these cases. 2. Rest be provided for the mothers after confinement and the children be referred to milk stations. Both of these are combated by Dr. Jacobi, who says that his program includes additions and changes to these propositions. If 17 per cent. of infant deaths are caused by congenital troubles, study these and obviate them. The babe's life and pathology begins nine months before the birth. What the world wants is healthy babies, and it seems almost impossible to prevent some from being infirm, both physically and mentally, so long as the riches provided by this world are accessible to only a part, and the advice to limit the number of children would be more appropriately given to the poor rather than to the rich. A laboring mother is handicapped in producing healthy children, and the least that can be done for her is the reduction of working hours during pregnancy and protracted rest after confinement. Insanitary occupations are also hurtful. As regards the midwife, he says that 50 per cent. of all the births in the United States are attended by non-

medical women, and he strongly criticizes the view that the midwife should be abolished. The midwives, he says, are mentioned as not even worthy of being educated, and he asks, "Do our obstetricians demand all the obstetric practice?" He would give a hearty welcome to the evening-dress obstetrician, who gets hundreds of dollars for a confinement, in the household where the income is \$15 or \$10 a week. The teaching of midwives is not so difficult as is thought, and doctors themselves are often defective in practical knowledge. If this is the case in the green tree, i. e., among the men and women with medical diplomas, what can be expected from the untutored? It is useless to attempt a comparison of a midwife with a medical man. They must be considered individually. The ignorant doctor in obstetric work is inferior to the well-informed midwife, and *vice versa*. What he would teach the midwives is, besides the manual care of normal labor, not to use medicine, not to operate, not to try even to remedy wrong fetal position as a rule; to teach them the use of soap and water and antiseptics; enforce by law and custom the frequent change of their own clothing; forbid the simultaneous attendance on two or more cases; see that she does not attend a labor case if there is in her family or immediate neighborhood a case of contagious disease; and she should be examined and licensed and protected as are the doctors. The midwife should know when to call a doctor and how to do a version in cases of emergency; how to attend the eyes and meet other contingencies, like hemorrhage, asphyxia, etc.; and, more than all, how to keep absolutely clean, and lastly, and here is the secret of success, not to leave the woman. As regards the milk question, Jacobi insists that the maternal milk is the safest nutrient. It is not much influenced by emotions, cares and worries, only occasionally by medicine taken by the mother or by her food. The daily quantity is rarely less than a quart, and there is no such thing as absolute absence of secretion. He does not think that female suffrage will alter the conditions, or that women will be unable to meet added responsibilities in our modern civilization. The mother's milk has certain protective properties not possessed by substitutes and contains substances which organic chemistry has never isolated—the ferments that circulate in the blood, the alexins, agglutinins, etc. He refers to the reduction of infant mortality in Paris during the siege (1870-71) when women were compelled to nurse their own babies on account of the absence of cow's milk, as showing the superiority of maternal nursing, and gives a table to show the incidence of disease in the breast fed and artificially fed.

THYMOL IN HOOKWORM DISEASE.

CAMILLO BOZZOLO, Turin, Italy (*Journal A. M. A.*, June 8), having employed this remedy continuously throughout the past thirty years, and not as a cure for ankylostoma only, considers as somewhat exaggerated the fears expressed by the greater part of those who, while admitting the utility and great superiority of thymol in comparison with other drugs, regard its after-effects as likely to be poisonous, and see danger in the administration of the remedy in large doses or in the contemporaneous administration of some alcoholic beverage, and who advise the substitution of small and repeated doses for maximum ones. In the several cases under his

care during the time in which workers on the cutting of the St. Gothard tunnel, suffering from ankylostoma anemia, flocked to Turin, 12 gm. of thymol were given in twelve hours, 2 gm. every two hours, always well enveloped in capsules, and no serious disturbance was ever noted, either by him or his colleague, Dr. Medoni of Laveno—where a tunnel was then being cut—who increased the dose to 15 gm. In one solitary case throughout his long experience, in a woman, it is possible that thymol, administered in large doses, proved fatal; as a matter of fact, at the postmortem examination of this woman there were traces of marked enteritis, which had, perhaps, been the cause of death. Possibly the fears expressed by those who adopted thymol among populations in which the disease is marked and extensive and attacks children, old men and women who have long been anemic, have their foundation in the unsatisfactory results obtained from the treatment in the case of a person too weak to support an energetic course of treatment for which their limited powers of resistance are inadequate. Before having encountered ankylostoma anemia—that is, the year 1878—Bozzolo had already used thymol in diabetes with satisfactory results on the glucose in the urine (glycosuria) and with no serious after-effects. In these cases, however, the doses were restricted to 3 gm. daily. Without therefore exaggerating the fear of the direct drawbacks of thymol in the treatment of hookworm disease, which in Turin has been widely employed in other diseases as well, it may be advisable to administer it in smaller doses (*therapia sterilisans fractionata*) than those originally proposed by Bozzolo in cases of weak persons who have been suffering for a long time, and when the treatment cannot be carried out under direct supervision. In the case of persistent enteric catarrh it is further advisable, whenever possible, to precede the treatment with a dry diet, administration of tannic preparations, etc.

A DIAGNOSTIC TENDER SPOT IN PULMONARY TUBERCULOSIS.

STEVENS T. HARRIS, Highland, N. C. (*Journal A. M. A.*, June 8), adds to the usual diagnostic signs of pulmonary tuberculosis a hypersensitive or painful spot. This spot is a manifestation of the degenerative changes referred to. It may be due to a reflex from the pneumogastric nerve through the spinal accessory nerve supplying the trapezius, or the third or fourth cervical nerves supplying the levator anguli scapulae, as all these nerves either have common origins, or are connected by anastomosis. It may be found by palpating the tip of the superior angle of the scapula with the finger and riding over it with more or less inward pressure. It is best to palpate both sides at the same time, exerting the same degree of pressure, but not enough to produce pain in a normal individual. The pain may be quite severe, causing the patient to object or wince, or it may be one only of degree from the opposite side. Ordinary myalgia and neuritis, as well as rheumatism, must be excluded.

TETANUS.

Three cases of tetanus, two of them severe, treated by subcutaneous injections of magnesium sulphate solution with recovery, are reported by G. PARKER, Peoria, Ill. (*Journal A. M. A.*, June 8). The treat-

ment was suggested by Meltzer and Auer's findings that paralysis could be induced by magnesium salts. There have been reported in the literature twenty-four cases in which magnesium sulphate has been employed by subarachnoid injection, and four in which it has been used subcutaneously. In the subarachnoid cases thirteen patients recovered and eleven died; in the subcutaneous cases all four recovered. Except for a slight bronchorrhea in one patient, an infant, no toxic effects were observed in any of the three cases. There are some dangers, however, from magnesium, chief among which is depression of the cardiac and respiratory centers, and Parker suggests that physostigmin may be used to antagonize such symptoms if they occur. The dosage of magnesium solution recommended for intraspinal injection is 1 c.c. of a 25 per cent. solution for every 20 pounds of body weight, but considerably larger doses were employed in these cases reported without ill result.

GONORRHEAL CHORIOIDITIS.

G. W. VANDEGRIFT, New York (*Journal A. M. A.*, June 8), reports a case of gonorrheal chorioiditis of which the specific origin was undoubted, and which he believes is the first reported in ophthalmic literature during the past ten years. The possibility that the chorioid might be affected metastatically from gonorrheal arthritis has been suggested by de Schweinitz. Not only the therapeutic test of treatment with mixed gonorrheal and staphylococcal vaccines proved the etiology of the condition, but it was also confirmed by a positive complement-fixation test. The clinical picture displayed was that of a localized chorioretinitis, attended by a severe hyalitis.

CONTRIBUTIONS BY THE U. S. P. H. AND M.-H. S. TO PREVENTIVE MEDICINE.

JOHN F. ANDERSON, Washington, D. C. (*Journal A. M. A.*, June 8), sets forth some of the recent contributions made by the U. S. Public Health Service to our knowledge of the cause and control of communicable diseases. These contributions by the service have been along two main lines: first, research work in the laboratories of the service; and second, the application of new as well as older methods in the control of certain diseases. The two lines, however, at times necessarily merge. The measures instituted during the past summer may be considered under three general heads: 1. Quarantine measures enforced at foreign ports. 2. Quarantine measures enforced during the voyage. 3. Measures enforced at ports of arrival in the United States. The measures adopted in the suppression of bubonic plague in San Francisco have conclusively shown that it is possible to eradicate this disease even when it has obtained a foothold in a large city. The work on typhoid within the last several years, including a prolonged and intensive study of the disease in the District of Columbia, investigations of numerous outbreaks in towns and cities, and studies of rural typhoid in different sections of the country, has contributed materially to the knowledge of the epidemiology of the disease. In the past year studies were made on measles, as a result of which we obtained our first definite knowledge as to the susceptibility of the monkey to infection with measles. It was shown that the virus of the disease

is present in the blood at least some hours before the eruption appears and for about thirty-six hours after. The behavior of the virus to various physical and other influences was tested. Experiments made to determine whether the scales were infectious, justified the opinion that the desquamating epidermis in measles did not of itself carry the virus of the disease. It was conclusively demonstrated that the infective agent of measles was contained in the nasal and buccal secretions during at least the first forty-eight hours of the eruptive period; and in no instance were the secretions, collected at a later period, found to be infective. Other contributions pertained to the standardization of drugs, especially digitalis, ergot and thyroid preparations; the study of embalming fluids and methods of preparing dead bodies for interstate shipment; the disposal of sewage; laboratory and field studies on hookworm and other intestinal infections, etc.

FOWL TUMORS.

P. ROUS, J. B. MURPHY and W. H. TYTLER, New York (*Journal A. M. A.*, June 8), report experiments with the cultivation of tumors in chickens. Some two years ago one of them transplanted a spindle-celled sarcoma of the fowl, a very typical neoplasm, which has since been observed in twenty-seven series of fowls. Recently it has been successfully transmitted by the Berkefeld filtrate of an extract of the fresh tissue in Ringer's solution and by the dried or glycerinated tumor-tissue. From this they have been led to the study of other chicken tumors, and, while the work has not been advanced to test for an extraneous causative agent, it has disclosed the presence in chickens of an abundant material for cancer research. They have obtained during the past seven months twenty-seven chicken tumors from a single firm dealing in live poultry—more than have been obtained of mouse tumors during the past three years. Furthermore, the avian growths were encountered in a relatively unfavorable stock, for the most part young and supposedly healthy. Among the first twenty met with, were a large characteristic lipoma, a pure myxoma, and several stationary growths perhaps best looked on as nevi. Of malignant tumors there were an osteosarcoma, numerous round-celled tumors, a connective tissue growth producing cartilage and bone, three spindle-celled sarcomas, a fibrosarcoma and an epithelioma. Small bits of each spontaneous growth were removed and transplanted by means of a trochar. A vascular site for the grafts has much importance. Usually they were placed deep in the pectoral muscle. The normal fowls used were young and of the same variety as the chicken producing the tumor. Neglect of these points has been the cause, in part, of previous failures. Thus far two new tumors have been successfully transferred. One of these, a connective tissue growth forming cartilage and bone, is noteworthy, because in the original host it appeared like a symmetrical developmental anomaly connected with the sternum. It is now in its fifth "tumor-generation." The other was a metastasizing spindle-celled sarcoma, which is now growing rapidly in a large proportion of the fowls constituting the second "tumor generation." The question whether the spindle-celled sarcoma with a filterable cause would be found epidemic among chickens is of interest, but it has not even been encountered. Each spindle-celled sarcoma observed has its distinguishing histo-

logic features, and it is nevertheless possible that they may have a common cause which is being sought for.

AURICULAR FIBRILLATION.

After describing the normal mechanism of the heart beat and the use of the electrocardiograph and polygraph, J. D. HEARD, Pittsburgh (*Journal A. M. A.*, June 8), says that through recent researches, as summed up by Lewis, we are in full possession of the facts in regard to a hitherto uncomprehended manifestation. We now know that the "mitralized" pulse, with the frequently attending phenomena of circulatory breakdown, are due to fibrillation of the auricle. This knowledge is regarded by Mackenzie as the most important gain thus far in regard to the functional pathology of the heart. We can now make a sane prognosis of some hitherto puzzling cases, and have data for instituting a treatment hitherto impossible. Auricular fibrillation is a condition in which the auricles no longer contract coordinately, but are constantly in a position of diastole, while individual groups of fibers are in ceaseless activity, causing frequent and disorderly impulses to be transmitted to the ventricle, which responds by contracting without any rhythm. When this is the case the disorderly ventricular contraction impairs efficiency of the heart, which is somewhat enlarged, and unless proper treatment is instituted the ventricle is gradually exhausted. A disturbance of conduction, if present, is exaggerated, and partial or complete block may follow, though with this the clinical condition of the patient may improve. The condition is induced by myocardial affections, notably the post-febrile infections, though other causes may occur. Overstrain may be a predisposing cause, and the use of the drugs of the digitalis group may bring it on in the predisposed. Organic changes in the auricle seem to be essential, but the pathologic histology needs more study. Mackenzie's estimate of 70 per cent. of all cases of heart failure being due to auricular fibrillation or aggravated by it, may be accepted. Subjective symptoms may fail for some time when compensation is maintained, but this is not the rule. There may have been previous attacks of tachycardia, and the signs and symptoms of the early stage are those of broken compensation. In severe cases there may be orthopnea, cyanosis, dropsy, hemoptysis, local pain and albuminuria. The pulse is usually rapid and disorderly, and gives the usual evidence of hypertrophy and dilatation. The presystolic murmur of mitral stenosis is absent. The affection may be transient or permanent, and one attack predisposes to another. If permanent, the prognosis depends on the rate of pulse and the response of the heart to treatment. It is not incompatible with long life. A slow pulse is more favorable than a rapid one, and the prognosis depends in great measure on the ability to lower the rate. The one sovereign remedy is digitalis, but it usually fails where the pulse is regular, and is contra-indicated in cases accompanied by partial block.

SALVARSAN.

J. COLLINS and R. G. ARMOUR, New York (*Journal A. M. A.*, June 22), publish the results of their investigation on the effects of salvarsan in the nervous

disorders caused by syphilis. The diseases studied were tabes, paresis, certain forms of myelitis, myelomalacia, encephalomalacia, meningitis, endarteritis, and gummatous formation. Assuming that salvarsan destroys the spirochete when brought in contact with it, they say that what they have already learned is that one dose rarely cures, that the intravenous method is preferable for certain reasons, but not so potent as the intramuscular, and that in cases of long standing syphilitic disease salvarsan must be given repeatedly in many instances in full doses, and sometimes other agencies, such as mercury, must be involved. They believe that of all the syphilitic nervous disorders meningitis is the most important on account of its frequency and susceptibility to cure. The primary structural change is in the pia-arachnoid, though later the parenchyma may be the most involved. The future, they believe, will show that the study of the cerebrospinal fluid will be the most important guide in the diagnosis, and they give special attention to this. The proportion of cellular elements and of globulin in the fluid are significant in differentiating the different forms of tabes and paresis, and they discuss the work of other observers such as Nonne, Mott and others on the different reactions. The average dose of salvarsan in nervous syphilis, when vitality is not greatly impaired and the blood-pressure is not high, is the contents of one ampule (0.6 gm.). Not more than half this dose should be given, however, in cases with cardiovascular degeneration and high blood-pressure. It is not their experience that organic nervous diseases are best treated by repeated small doses, but that full doses are better with patients that have a fair amount of vitality. The technic is described in full and the results of treatment are given. In several cases there was very marked improvement. Nine cases of paresis were systematically treated with salvarsan and in three great improvement took place though one of these patients died later in convulsions occurring while apparently in perfect health; the symptoms appeared to have disappeared entirely until the attack occurred and this effect was more striking than in the ordinary remissions of the disease. Other cases with very gratifying results from the salvarsan treatment are reported and the authors express a very positive opinion as to its merits. They say that, while mercury has been for a long time a trusted weapon and practically the only one, salvarsan is far more satisfactory in the treatment of syphilis, though it has not replaced mercury altogether, and its therapeutic potentialities not yet fully shown.

UNILATERAL CERVICAL ADENITIS.

H. F. DAY, Boston (*Journal A. M. A.*, June 8), reports a case of unilateral tuberculous infection of the tonsils with extreme reaction in the glands of the neck, which entirely subsided after tonsillectomy without any change in mode of living of the patient or subsequent treatment by tuberculin. The diagnosis of tuberculosis was made after the examination of the extirpated tonsils, and the enlarged glands of the right side of the neck, which extended from the parotid to beneath the clavicle, gradually subsided. One year after the operation the throat was clear, and only one or two minute glands in the neck could be palpated. The lungs were reported as normal and were apparently not involved.

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Rubber-stoppered glass bulbs of 1 Cc.,	-	package of four, \$1.00
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Literature on any or all of our Bacterial Vaccines will be sent free to physicians on receipt of request.

THERAPEUTIC NOTES.

TREATMENT OF DYSMENORRHEA.—The most satisfactory agent for use in the treatment of the pain occurring before and during menstruation in ovarian dysmenorrhea is PASADYNE (Daniel's Concentrated Tincture of *Passiflora Incarnata*) in dessertspoonful doses every three hours. If a card is addressed to the Laboratory of John B. Daniel, Atlanta, Ga., a sample sufficient for trial will be sent to any reputable physician.

THE INFLUENCE OF THE CHEMIST ON MODERN THERAPEUTICS.—One of the advances of modern chemistry has been to show that cod liver oil possesses much more virtue than merely as a convenient means of administering fat to the patient. With a clearer understanding of its chemical construction has come a more just appreciation of the large therapeutic value of its essential qualities. Before modern chemistry had succeeded in isolating the active principles of cod liver oil, the patient whose stomach was unequal to the difficult task (a difficult task even to the normal organ) of digesting a greasy mass, was of necessity denied the advantages of this valuable agent. Unfortunately this was too often the case because the very patient who needed cod liver oil was possessed of a defective gastric organ. It was not until the pharmaceutical chemist made a practical use of his more theoretical colleague's investigations that a preparation of cod liver oil was secured which was freer from fat and which was capable of being digested by the impaired stomach. The most popular of such cod liver oil preparations is easily Cord. Ext. Ol. Morrhuæ Comp. (Hagee) which contains in palatable form the active principles of the oil, and by means of which the patient may enjoy the therapeutic advantages of the whole oil and yet be spared the distress inevitable upon taking the whole oil. Cord. Ext. Ol. Morrhuæ Comp. (Hagee) has for many years been put to the severest tests, and no stronger argument in favor of its clinical value may be advanced than that those who have used it longest use it the most.—*Therapeutic Review.*

GYNECOLOGIC THERAPEUTICS.—The tremendous growth of gynecology in recent years has been confined especially to surgical therapeutics. Even Skene several years ago regretted that medical treatment of female disorders does not receive its merited attention. The practitioner is, therefore, compelled to rely chiefly on remedies which have been tested by clinicians with years of experience having the best opportunity for observation. The most frequent diseases of women are those that arise from functional disturbances of the pelvic organs. For these we call the attention of the medical profession to Diovi-urnia, a combination of vegetable drugs, which has stood the test of many years as an efficient tonic and sedative to the female generative organs.

GROWTH IN THE USE OF BACTERINS.—Treatment of infectious diseases with preparations derived from corresponding micro-organisms is unquestionably

growing in favor. Not only do the bacterial vaccines (or bacterins) seem destined to a permanent place in therapeutics, but their field of applicability is constantly broadening. Proof of this is seen in the growing list of these products announced by Parke, Davis & Co., no less than fifteen of the bacterins now being offered to the profession.

There are a number of reasons for the favor which is being accorded to the bacterial vaccines. In the first place these products are in consonance with the scientific trend of present-day medication. They are being used with a gratifying measure of success. The method in which they are marketed (sterile solutions in hermetically sealed bulbs and in graduated syringes ready for injection) appeals to the modern medical man, assuring, as it does, both safety and convenience. The moderate prices at which they may now be purchased will tend to give them still greater vogue. And these prices are worthy of note, since they represent a great reduction from those formerly prevailing, amounting, if we are not mistaken, to as much as 60 per cent. in many cases. They are announced elsewhere in this journal over the signature of Parke, Davis & Co., and will repay a careful scrutiny.

ABORTIVE TREATMENT OF COLDS.—Cystogen-Aperient, 2 to 3 teaspoonsful to a large glass of water, repeated every four hours, will usually abort a cold if taken as soon as the first symptoms (sneezing, "stuffiness," etc.) are observed. After free laxative action has been obtained, Cystogen-lithia or Cystogen in powder or tablets can be substituted for the aperient form. Cystogen, in full doses, enters all of the fluids of the body and its use in the treatment of acute and chronic rhinitis, otitis media, bronchitis, etc., is as logical as the established practice of prescribing it where genito-urinary anti-sepsis is indicated.

HOW TO FIGHT THE FLY.

"Swat the fly" where he breeds, rather than where he basks.

Flies swarm about kitchens, meat markets, groceries and other places where food is kept. But they don't come into being there except in undisturbed filth. So seek them where they start!

Flies will breed in filth as they feed on filth, but the heap of horse manure brings forth the greater number. Kill them there!

One stable in which a horse is kept will supply house flies for the neighborhood, unless the manure is properly cared for.

But it is not difficult for a city to do away with the plague of flies. Though a fly may go a mile or more in search of food, it will not fly more than a few blocks away from food, except when it "flips" a wagon or some other moving vehicle. Consequently nearly all flies found in the city come to life there.

From egg to fly is ten to twelve days. If manure is carted away once every week the egg will not have time to develop. If the manure is spread out on the ground the sun will kill the eggs and maggots.

All cities and villages in the State of Illinois are clothed with power to abate nuisances dangerous to the public health. It is easy, therefore, for local health authorities to enact and enforce reasonable rules covering the care of stables and the keeping and disposal of manure.

Flies breed also in human excrement, thus becoming very dangerous to human beings, as they carry intestinal diseases, such as typhoid and dysentery.

The back yard privy is not only a nuisance but a decided menace to the public health. If the open privy cannot be abolished it should be regulated. The breeding of flies can be prevented by the use of kerosene thrown on the excreta.

The garbage heap, too, contributes to the number of flies. Indeed, there will be flies so long as there is filth. No filth, no flies.


The fly is a carrier of typhoid, tuberculosis and other diseases. It is a leading agent in the spread of summer dysentery and is responsible for the death of many babies. Every practical means, therefore, should be taken by municipalities to rid themselves of flies.

A municipality should not call upon its people to kill the fly and at the same time permit manure heaps to lie in the alleys from north to south, east to west, during the fly season; provide breeding places for flies in untreated privy vaults, and allow wide-mouthed garbage boxes, many overflowing, some without covers, others with covers constantly open, to remain unemptied for months at a time.

How house flies may be killed without serious loss of the fertilizing quality of the manure, is shown by the following experiments of Professor S. A. Forbes, State Entomologist:

Using three pounds of what is known as high calcium lime, to fifteen pounds of manure, we killed 940 larvae out of every 1,000. That is, in the untreated manure, 3,083 larvae matured into flies, as against only 184 in the treated manure.

Using two pounds of iron sulphate in a gallon of water to fifteen pounds of manure, we



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killed 941 larvae per 1,000; that is, from the untreated manure, 6,679 flies were developed; from the treated, only 395.

With a pound and a half of common salt in a gallon of water applied to twelve pounds of manure, we killed 888 larvae per 1,000, obtaining from the untreated lot, 7,227 house-flies and from the experimental lot, 807.

The cost of any of these applications in actual operation would amount to from a cent and a half to two cents per day per horse.

With one ounce of carbon bisulphid evaporated in a closed box, we killed 99 per cent of the larvae in twelve pounds of manure. This would cost less than a cent per day per horse.—Illinois State Board of Health.

The foetal mortality in the cases where de Ribes' bag was used was 66 per cent., but a large number of the children were premature, and in them the mortality was very high. The German operators advise against Caesarean section if the child is very premature, because there is little chance of saving it. So that as

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far as the question of infant mortality goes, there is little to choose between the methods, and it is just a question whether the chance of saving the child can be put against the additional risk run by the mother if the abdomen is opened.

Couvelaire admits that there are cases where Caesarean section should be the operation of choice, as, for instance, in elderly primiparae with rigid cervix and in cases of contracted pelvis. He would also be inclined to include some of the cases in which the German operators advise against the operation, viz., those in which the patient is in a very bloodless condition and delivery cannot be effected without force. In these he would advise the Porro operation. In

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this connection an interesting case is recorded by Redmond and Cazalis (*Ann. de Gynec. et d'Obstet.*, April, 1911) in which total hysterectomy was performed for placenta praevia, the uterus being removed without opening it, for fear of further hemorrhage. After the removal the uterus was opened and a living child obtained. The time elapsing between the cutting of the second uterine artery and the opening of the uterus was about one minute.—*Edinburgh Medical Journal*.

THE MENACE OF WOOD ALCOHOL.

The wide-spread discussion which followed the series of deaths in Berlin as a consequence of the drinking of liquors contaminated with wood alcohol has again attracted attention to its poisonous character. There has been considerable difference of opinion as to whether the poisonous effect of this substance is actually due to the alcohol itself or to some impurities, which are almost invariably present in all except the most refined products. There is a scarcity of facts regarding the actual behavior of wood alcohol in the animal body, so that the underlying causes of its extremely poisonous character are by no means clearly understood.

With respect to ordinary grain alcohol, the component of our alcoholic beverages, the facts are better understood. Ordinary alcohol is, when taken in moderate quantities, rapidly burned up in the body. This fact has been demonstrated by numerous experiments. With wood alcohol, however, the case seems to be different, according to the recent investigations in the Institute for the Fermentation Industries at Berlin. It has been shown that when wood alcohol is administered to animals it may not be eliminated completely even at the end of two days. The repeated ingestion of considerable doses of wood alcohol may lead to a dangerous accumulation thereof in the body. This factor has heretofore not been duly appreciated. These subtle dangers associated with the use of wood alcohol deserve wide-spread notice because of the increasing danger of its unsuspected entrance as an adulterant of the cheaper grades of distilled liquors and certain medicinal products. The insatiable demand for cheap liquors among certain of the degraded classes, says the *Journal of the American Medical Association*,

and the difficulty with which the admixture of the inexpensive wood alcohol is detected provide a constant temptation to the unscrupulous dealer and a menace to the health of certain classes. However objectionable adulteration may be on general principles, it becomes far worse when some subtle danger is harbored therein.

HEALTH CONFERENCE IN MICHIGAN.

A recent issue of *Public Health*—the bulletin of the Michigan State Department of Health—contains a report on the health officers' conference held at Ann Arbor, January 30-31. This annual conference of the local and state health officers has come to be an established custom in Michigan. Water-analysis, the need of a state hospital for advanced cases of tuberculosis, water-purification, certified milk, garbage-disposal, hotel-sanitation and occupational diseases were discussed before the conference. While it is important from a scientific standpoint, perhaps the greatest practical value of such a conference is that it brings together, and makes mutually acquainted all of the men in the state who are working directly on public health problems. Perhaps the most serious flaw in our public health work so far has been the lack of close cooperation and mutual understanding between the different detachments of the army that is carrying on this fight. Lack of organization and cooperation means duplication of work with waste of money and effort. The *Journal of the American Medical Association* calls attention to the fact that Michigan and Kansas are striving to unite the health-workers of the states into a compact and effective body which will render more effective warfare against disease than can the isolated town and county health officers found in too many of our states.

INDUSTRIAL HYGIENE AND THE INTERNATIONAL CONGRESS.

The problem of the prevention of injury and disease among industrial workers is receiving more and more attention. The International Congress on Hygiene and Demography, to meet in Washington in September, will devote considerable time to the discussion of industrial

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and occupational hygiene. Among the subjects on which papers are to be read are the physiology and pathology of fatigue; the injurious effect of unnecessary noise on workers; caisson disease; accidents and diseases occurring in electric generating works; occupational anthrax; safety devices for the prevention of accidents; the effects of temperature and humidity on fatigue; dust and its effects. Other important topics to be discussed by eminent men are sex and age problems in industrial hygiene; the employment of women and its relation to infant mortality; child labor, etc. These topics

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will be further illustrated in the exhibit to be held in connection with the congress. The *Journal of the American Medical Association* expresses the hope that the attention given these questions by this important congress will no doubt give impetus to their further effective consideration by government authorities and will result in distinct improvement in these economic conditions.

CONTROL OF DISEASE IN THE TROPICS.

Whatever influence the demonstration of the value of modern scientific medicine in the control of disease in the Panama Canal may have in this country, it is certainly having a good effect in tropical countries where the tendencies and ravages of tropical diseases are known. President Luco of Chile, in a recent interview in a New York paper, after describing in glowing terms the effect of the opening of the Panama Canal on commercial and financial conditions in South America, said: "The spread of plague and preventable diseases has been one of the worst handicaps of tropical America. With sanitation such as that of Panama, there is no reason why South America should not maintain a vast population and support nations as advanced as any in the world. The Panama Canal opens the gateway to the western coast of the continent and the elimination of disease from the Isthmus renders an even greater service to all Central and South America. . . . We have decided that we would request Washington to lend us several sanitary experts from Panama, the men whose services have won for your country such undying fame at least in South America. I personally would like to have the services of one of Dr. Gorgas' experts." Colonel Gorgas prophesied some time ago that the control of tropical diseases, making tropical countries a safe place of residence for white men, opened up an almost inconceivable field for the civilization of the future. Civilized man now has the knowledge necessary to make him free from many contagious diseases. Those diseases about which exact knowledge is lacking are rapidly being investigated. When the history of the present era is written, the most important facts to be recorded will not be those connected with

politics or international relations. The historian of the future will regard as the most important event of the present period the acquisition, beginning about 1870, by civilized man of the knowledge and control of preventable diseases. The extermination of plagues and epidemics will naturally be pressed most vigorously in tropical countries where the danger has been the greatest. The *Journal of the American Medical Association* says that it behooves us in temperate zones and civilized communities to bestir ourselves, lest those nations which we regard as backward outstrip us in the race for better health. That nation which first learns to utilize all the knowledge of modern science for the prevention of disease will rapidly improve, physically, commercially and financially, and will take a long step toward the front rank among nations.

SURGICAL SUGGESTIONS.

Creeping infants may gather wood splinters or needles in their hands or knees and abscesses in these localities should suggest such an etiology.

When it causes suppuration, a foreign body is usually found; but if there be difficulty in locating it, it is better to be content with drainage for a few days rather than expose uninfected areas by a prolonged search.

A subcuticular whitlow is often the superficial expression of a deep infection. After removing the raised epidermis carefully inspect the tissue beneath for a small opening. If this is neglected the process may speedily advance to the tendon sheath.

Active hemorrhage from a gastric ulcer is rarely fatal; the weight of evidence indicates that it is better to operate after than during the bleeding. Active hemorrhage from a duodenal ulcer is often fatal; operate as soon as the diagnosis is made.



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ORIGINAL ARTICLES.

ETHER ANESTHESIA BY THE DROP OR OPEN METHOD.*

BY

DR. WM. LINDSAY,
Montpelier, Vt.

Ether is the only anesthetic with which I am familiar. It is used in the hospital here exclusively because we believe it is the safest, most economical and most easily administered of all anesthetics. After an experience of over 2,000 cases of ether anesthesia without any deaths attributable to the anesthetic, ether has become the most satisfactory to us. I used for a period of years the closed or cone method of administration with good results, gradually acquiring skill and ease in the administration and with a considerable degree of comfort to the patients. Then a series of cases were tried with nitrous oxide gas as a preliminary to the ether administration. This method proved quite a rapid one, the patient being completely anesthetized very soon. It was especially satisfactory when in the later stages the ether was administered by the drop method.

After learning from experience the ease and comfort of the open method, I have adopted that for administration almost entirely.

Much has been written by able and experienced observers regarding this method; and its mode of administration has many times been described. I do not hope to add one atom to the sum total of information concerning it, but I am convinced that the method has not been followed properly, nor has its usefulness been appreciated. Especially is this true of the general practitioner who has not, in many instances learned the value and safety of a method, which would be of inestimable service in his emergency cases, when the administration of ether has often to be entrusted to a layman. Under such circumstances it is unusually safe as compared with the closed method.

Any form of open inhaler over which gauze

can be laid, or a piece of gauze alone, will answer the purpose for administration. I use the wire gauze inhaler, a Yan Kaner's with four to six layers of gauze upon it. This form of inhaler is convenient to carry in a surgical grip and is easily boiled after each patient. Fresh sterile gauze is always used for each case. The ether is dropped from a four ounce can into which is fitted a cork grooved on either side, one groove is filled with a plugget of absorbent cotton which extends about one inch out of the can. The drop can easily be regulated by holding the can so that the ether will pour slowly or rapidly as desired. The ether should be given regularly, not intermittently. After gaining the confidence of the patient and the manner of doing, this must be left to the discretion and judgment of the one administering, but a quiet, sensible, natural approach usually answers. I have found that getting the patient interested in the make-up of the cone and having them try it without ether, showing the free access air will always have during the time of taking the ether, coupled with the fact that only one drop at a time is put upon the mask, concentrates their mind upon that subject and gains the confidence needed. At first the ether is dropped slowly and carefully until the face is flushed, then a few more layers of gauze are added to the mask or a towel is made to enclose it and the ether is given more quickly until the individual is etherized. After this stage is reached the extra covering is removed and the drop is continued regularly and continuously throughout the operation. I usually converse with the patient, encouraging him as the anesthesia proceeds. Patients should not be allowed themselves to talk or count, this usually leads to excitement. Nor are they ever asked to "breathe deep" or "take long breaths," this unnecessary procedure has been so deeply inculcated into the minds of the patient that it is often difficult to persuade them to breathe quietly and naturally. The "long deep breath" produces a feeling of suffocation and a struggle is apt to follow.

The patient should be anesthetized upon the table and in the position in which the operation is to be performed. The moving and changing of a patient from one table to another or from

*Read at the Ninety-ninth Annual Meeting of the Vermont State Medical Society at Montpelier, October 10-11, 1912.

one position to another arouses him to a marked degree and valuable time is lost. The patient being in the desired position the preparation of the site should begin while the patient is going under the anesthetic. In this manner a more rapid surgical narcosis is reached than by waiting until narcosis is first induced and then beginning the preparation. The attention of the patient is diverted and much less anesthetic is used. The whole aim should be to have the patient under the anesthetic as short a time as possible, use as little of the anesthesia as possible and keep the patient within the border lines of narcosis at all stages of the operation. The amount of ether required must be judged by the one administering the anesthetic; many conditions enter into the dosage of ether, but under all conditions only enough should be given to do good work. The dose of ether used in the open method is very much less than by any other ordinary method. The average amount for an anesthesia lasting one-half to three-quarters of an hour is four ounces, the time required to bring the patient under is about five minutes, often much less. What are the signs of complete narcosis? There is no one positive sign upon which one can depend. There is the deep respiration, the color and relaxation, yet these fail in peritonitis cases and alcoholics. Alice Magaw relies upon the relaxation of the jaw both before and during the operation and I have found the sign very reliable. The eye ball should not be touched, it is very unscientific and unnecessary to touch the cornea, great injury may be done thereby. It is quite unnecessary either to even look at the eye to determine the depth of anesthesia.

A deeper anesthesia is required for the skin incision, and for operations upon the sphincter muscles, for patients in the Trendelenburg position, and for acute peritonitis cases.

The relaxed jaw, deep respiration, normal color and good quality of pulse are the general indications that the patient is right.

The head should be so elevated in relation to the chest that the muscles of the neck are relaxed and the patient should be given the greatest freedom of air possible. When breathing is not free the holding of the jaw up and forward will aid materially except in patients from whom artificial teeth have been removed, then holding the jaw sets the gums so firmly together that air does not enter at all, the thumb inserted between the gums

holding the tongue down gives better breathing space. In my cases by the open method respiration has rarely been interfered with, mucus not troublesome, vomiting is very infrequent and the tongue does not fall back upon the epiglottis. The tongue forceps has been discarded, none being used for several years. Neither have I found it necessary to hold the tongue with a piece of gauze to allow egress of air. The plan of holding the tongue with the fingers is much preferable to using the tongue forceps. Ether by the closed method is not so satisfactory, disturbances frequently arise.

The patients to whom I have administered ether do not receive any preliminary medication, unless in a few instances of emergency cases brought to the hospital when morphine had already been administered by the attending physician. Our patients take ether by the drop method quietly and easily and without struggling, surgical anesthesia being reached in from three to five minutes. They do not appear unduly frightened and are not more timid about taking ether than patients ordinarily are having a hypodermic needle jabbed into their skin. I am not troubled with mucus, the patient's head is always held to one side so that saliva and other secretions escape readily from the mouth. Sometimes a portion of towel acting as a wick in the corner of the mouth drains the collection of saliva from the throat. The administration of morphine is not always followed by a peaceful quiet relaxed state, frequently there is excitement and wakefulness, then why add an element of uncertainty to your already excited condition?

Many prominent anesthetists advocate very strongly the use of preliminary medication, some going so far as to say that every patient except those under eight and over eighty years of age should receive it. The claim is made that it lessens mental suffering, patient is anesthetized more easily, prevents mucous rales, helps to prevent shock, less nausea and vomiting at the end of operation, induces a quiet state afterwards and relieves pain. Dr. Crill in his admirable work has shown the physical basis essential for preliminary medication. On the other hand there are many prominent men who do not deem it necessary or essential as a routine practice to give preliminary medication. Our experience does not prove the necessity of such a procedure. Ether without preliminary medication has been administered to all ages from two weeks up to

ninety years and to all classes of cases, except for goitre operations, and no untoward results chargeable to ether have followed. The patients do not, however, recover without nausea and vomiting, a good percentage having slight nausea and vomiting. The condition of shock is not present unless there has been hemorrhage or the operation has been prolonged. I am fortunate in having to anesthetize for surgeons who are rapid operators and who are exceedingly skillful in handling the structures carefully. This may be one of the reasons that patients do not suffer from shock. Post operative shock is also prevented by keeping the patient warm, applying heat if necessary, guarding against exposure and placing the patient in a warmed bed after the operation. I am told by physicians who have observed patients under preliminary medication that our patients do as well as those receiving medication and I am convinced that under the open method they do recover in good condition.

Our objection to ether by the drop method is the reduction in temperature of the ether as it is administered. In light anesthesia the temperature of the ether is reduced to 55° F., (room temperature 75° F.) in moderate anesthesia reduced to 45° F., deep anesthesia temperature reduced to 32° F. The ether then becomes very cold as it is inhaled. It ought to be at least the temperature of the room. R. C. Coborn has devised an apparatus for warming the ether vapor as it is given by the open method. Such an arrangement would be very desirable. The cold ether vapor does not appear to have any deleterious effects. Since adopting the open cone we have very few cases of ether pneumonia.

In obstetrics, ether by this method is very successful and should be the only anesthetic used.

Even in an open cone similar to the dropping of chloroform it will answer the purpose and be much safer.

Comparing with other methods of inducing narcosis "Chloroform must be considered as a dangerous anesthetic, even in the hands of experts."

With nitrous oxide and oxygen I have not had experience, but conclude from reading that in dentistry and minor surgery requiring brief anesthetics it is undoubtedly safe, but during the prolonged administrations required in major surgery this method is quite a different proposition. Bennett of New York states "That the general adoption of this method of anesthesia

would lead to a mortality approximating that of chloroform and ether." Nitrous oxide-oxygen requires a trained anesthetist and one of some skill, a special apparatus for administration, and preliminary medication three-quarters of an hour before operation.

Nitrous oxide gas-oxygen-ether anesthesia is a useful method in skilled hands but it also requires a special apparatus and the anesthesia is expensive.

Then ether-air-anesthesia by the drop method, i. e., ether administered drop by drop, on an open mask, the same that is used in giving chloroform, whereby it is mixed with the quantities of air, induces anesthesia gradually and evenly, and by this method ether can be used more universally than any other known anesthetic.

DISCUSSION.

Dr. Bidwell.—Having had a little personal experience, I have just one word to say in regard to the suffocating stage. I have had occasion to take ether three times. I passed through the same feeling each time I took it. There was a time, when the primary anaesthesia was coming on, when it seemed to me that I was strangling. But I found that by swallowing instead of trying to breathe, that that suffocated feeling passed away very quickly. Now when giving ether I explain to the patient that there will come a time when they will feel as though they were going to suffocate, and I tell them not to struggle, but just to swallow, and I often find they do it. When a patient complains that the ether is too strong, I say swallow, swallow, and no excitement follows as a rule.

Dr. Strobell.—I would like to relate the experience I have had with pre-anesthesia medication, more particularly as regards the use of the so called H. M. C. tablet which is composed of Hyosine Hydrobromide, gr. 1-100 Morphine Hydrobromide, Gr. 1-4, Cactin. Conc. Gr. 1-64, as is well known. I have never tried to "push" the drug combination to the full operative stage as is advised, but have made extensive use of it in my operative work at the Rutland City Hospital for the past four years, with the greatest satisfaction, and in the following way: On the morning of the operation one and one half hours before the administration of ether the patient receives an H. M. C. tablet hypodermically. By the time the anesthetist is ready to begin the patient has become extremely drowsy and prefers to be allowed to sleep on. She has lost all dread of the operation and is not in the least nervous. She takes ether by the drop method, calmly, without struggling and is speedily in the surgical stage.

During the operation there is marked freedom from retching and mucus collections in the fauces; the respiration is deep and regular, while the amount of ether consumed is remarkably small—a decided advantage as lessening the danger of ether pneumonia and renal complications.

As a rule these patients, even after the most severe operations, are free from the post operative vomiting and pain, have a comfortable day, and are on the whole in vastly better shape than if the tablet had not been used. I think it far superior to the employment of morphine and atropine.

DIARRHEA IN BOTTLE FED INFANTS.*

BY

C. K. JOHNSON, M. D.,

Instructor in Pediatrics, University of Vermont;
 Attending Physician, Home for Destitute
 Children.

According to the idea of Finkelstein and Meyer, the digestibility of human and cow's milk by infants is not dependent upon simple quantitative differences of its constituents. They show by experiments that fermentation is not due to fat as they had the same results with whole milk as with diluted skim milk or buttermilk. They also found that caseine added to skim milk and to diluted whole milk which was being given to babies in which indigestion was present did not increase the condition but apparently improved it, the loose green stools changing to normal within a few days. These observers believe that there must first be an injury to the intestinal epithelium caused by abnormal bacteria fermentation before the food can itself be harmful. An infant can digest the food elements when in the whey of human milk easier than when they are in the whey of cow's milk. Any medium except human milk may interfere with the normal function of the intestinal epithelium. The action of the whey of human and cow's milk seems to be different.

If their theory of diarrhea is correct the first indication would be as they advise to stop fermentation and allow the intestine opportunity to return to normal. From these experiments they conclude that caseine has an antifermentative action, also that fermentation is not due to fat. That sugar must therefore be the cause of fermentation, is their conclusion.

They found that when sugar was added to the food of infants in which diarrhea has been controlled by the addition of caseine, a recurrence of the diarrhea occurred, also that when the sugar was reduced for a considerable time, without caseine being added, the diarrhea was often controlled.

Further evidence pointing to sugar as the cause of diarrhea is the fact that the same amounts of proteids and fats diluted with water was better borne than when diluted with the sugar containing whey.

*Read at the Ninety-ninth Annual Meeting of the Vermont State Medical Society at Montpelier, October 10-11, 1912.

They therefore conclude that a food suitable to prevent intestinal fermentation depends on a diminution of the sugarmilk, a diminution of the salts by dilution of the whey and an increase in the caseine content with a fair amount of fat. Based on these observations they developed a food to meet these indications. This food is known as Eiweiss-Milch or caseine feeding and is prepared as follows:—One quart of milk is heated to 100° F. and two teaspoonsful of essence of pepsin or liquid rennet added, this is allowed to stand fifteen to twenty minutes until jellied, the whey is then drained off and thrown away. The curds are then worked through a rather fine sieve two or three times and water added to make one pint.

To this curd and water add one pint real buttermilk. This food has the following composition:

Fat	2.5%
Sugar	1.5%
Proteids	3.0%
Salts	0.5%

One quart contains about 370 calories.

In their original paper Finkelstein reports good results with this food in many conditions accompanied by diarrhea but not in the new born.

After a preliminary cathartic, followed or not by a period of starvation and tea diet depending on the case, this food is given for a few days, small quantities at first, then larger quantities until the stools are hard and dry, then a milk mixture is given without sugar. The sugar is added gradually as conditions admit, some sugar other than milk sugar or cane sugar being used, preferably dextrose and maltose. These infants of necessity lose weight in the beginning of the treatment owing to the low caloric value of the food. This loss is followed by a stationary period, then by a gradual increase in weight as the calories are increased by adding more of the food and carbohydrates. Finkelstein adds buttermilk because it contains only a small amount of sugar or fat, also for the good effect of the lactic acid.

Dennett has made an arbitrary division of diarrheas during the first year as follows:—1. Faulty feeding; 2. Insufficient feeding; 3. Overfeeding; 4. Infectious diarrheas.

As regards the sugar best suited for infants, Leopold believes that the maltose and dextrose

preparations cause less dyspeptic stools and a rise of temperature less often than saccharose, glucose, lactose or maltose.

His experiments also showed that more cases gained in weight when the maltose and dextrine preparations were used than with other sugars. These experiments were mostly with infants under three months of age.

In not a few cases a diarrhea can be controlled by omitting the sugar from the feedings. While not infrequently diarrhea will be caused by the sugar. An evidence of this is shown by the fact that many constipated infants are relieved of the condition by simply adding sugar to their diet.

All this tends to add weight to Finkelstein's view; that sugar is the cause of diarrheas.

In many cases I have seen loose green stools become yellow and well digested within a few days by giving a milk and water mixture boiled without sugar, many of these cases not having the customary preliminary cathartic. As soon as the bowel condition is improved, the boiling may be omitted and sugar cautiously added. In cases with a temperature of the infectious type, as cited above, I give a cathartic, calomel or castor oil depending upon the individual case.

CASE I.—F. M., age 7 months, weight 16 lbs. This baby had not been gaining in weight for some time. She was taking modified milk, sugar about 6%. The mother increased the sugar (cane sugar) of her own initiative, which was soon followed by 6 or 7 loose green watery movements daily. The sugar was withdrawn and the movements became normal within four days—when the sugar dextri-maltose was gradually added, one-half ounce to the 24 hours feeding being given first. The loose stools did not recur.

CASE II.—H., age 4 months, weight 6½ lbs. Birth weight 8 lbs.

Nursed for three months, then put on a milk and water mixture without sugar. The value of the twenty-four hours feedings was about 70 calories per kilo. When seen at 4 months of age the baby was emaciated, pale and anemic, crying much of the time. There were frequent small green stools. This baby was given a milk and water mixture, boiled without sugar. The stools gradually improved within a few days, to 3 or 4. They were yellow, well digested but quite dry. The boiling was omitted, modified milk without sugar was given. A few days later dextri-maltose ½ ounce was given daily, this was gradually increased so the baby was get-

ting more than 100 calories per kilo. The stools remaining normal with a very satisfactory gain in weight, the baby now 9 months old weighing 17 pounds.

CASE III.—L., age 9 months. This boy had been unusually robust up to ten days before I saw him, when he began having several movements daily, described as green and fetid. At my first visit he was having small greenish stools with mucus and curds. There was considerable straining and pouting at the anus. Temperature 101° F. The baby was emaciated, eyes sunken, abdomen flabby. A mixture containing deodorized tincture of opium, bismuth and chalk mixture was being given. Milk had been withdrawn but was now being given. Treatment, castor oil two drams, boiled water was given for 24 hours then replaced by Eiweiss-Milch. This was continued for six days, the movements gradually becoming yellow, well digested but rather dry, 3 or 4 daily. This food was discontinued and milk and water boiled—given without sugar. The sugar was gradually added as noted previously.

From observation in my private practice and in institution wards I am of the opinion of Dennett and Benson that a preliminary cathartic in these cases of summer diarrhea is not always necessary or wise as in some cases already in a weakened state they may do harm.

During the diarrhea period we must see that the milk supply is as good as possible, while if in doubt as to its quality we may temporarily pasteurize the milk. During the hot weather sugar should be reduced or even omitted. Drugs are a secondary factor in these conditions; strychnine may be given for its tonic effect and we may in rare cases require opiates cautiously administered.

An investigation by the Boston Board of Health shows that in 1911 there were 621 deaths from diarrhea and enteritis, of which 87 were breast fed and 534 bottle fed, i. e., 86% bottle fed.

Dr. Morse says that more mothers are nursing their infants than ten years ago, let us hope the number will continue to increase as herein lies a prophylaxis of many cases of diarrhea.

The good results that I have obtained with the line of treatment indicated in this paper have led me to believe:

First: That many cases of diarrhea in bottle fed infants can be controlled by giving milk and water mixtures boiled without sugar.

Second: That diarrheas that have persisted for some time without improvement are best treated with Eiweiss-Milch.

Third: That a starvation period is not always necessary or advisable in infants already in a much weakened condition.

Fourth: That in some cases not easily controlled, feeding with a barley gruel for twenty-four hours may result in marked improvement, probably by charging the intestinal flora.

Fifth: That many of us are inclined to place too much dependence upon drugs in this condition.

DISCUSSION.

Dr. J. J. Derven.—It would seem a little bit out of place for me to try to add anything to Dr. Johnson's very efficient paper, and I have had very little experience with feeding with the Eiweiss-Milch that he speaks of. Of course in the diarrheas of bottle fed infants we have to look to the etiology of it. I have read very recently that the idea of pasteurizing milk does not always help the milk. If you can get milk fresh, like we get in the country and put that milk on ice and keep it at a temperature of about 40°, that will give the baby better nutrition than pasteurized milk, and is just as good.

There are other things to look at in feeding infants. I have seen children that were sick and children that were not sick, and the mother would sit down and take the baby and change its diapers, getting some of the fecal matter on her hands and then she reaches for the baby's bottle, strips the nipple a few times and sticks it right into the baby's mouth. If there is anything in an antiseptic theory, that is entirely wrong. It is a very difficult proposition to get a mother with a baby that is sick and crying, to space the feeding, and this is important. If you give a baby nourishment every time it cries you cannot expect it to get well very fast. But some of them do, for they don't want to hear the baby cry. If the baby cries they give the baby the bottle, and then it stops crying. Sometimes you can overcome this by giving water or weak tea, which is not harmful to a child with diarrheas.

I don't think that it is always necessary to give a cathartic. If you get a weak baby that has had diarrheas four or five days before you have seen it, it is wrong to give the baby a cathartic and weaken it still more. In giving a malt sugar, if you increase the malt very much, and the baby is getting quite a lot of sugar, and if it is absorbing the sugar too rapidly it will put the temperature up. I think in feeding the baby sugar it is sometimes advisable to watch the temperature, take it at least twice a day, and in the case of a great rise, to examine the urine. If you find sugar you have to cut out your malt sugar and dextrin. If a baby is suffering pain in diarrheas, give it some preparation of opium. Codeine will stop the pain and reduce the shock. The shock of a pain will injure a child more than the codeine, but don't give too much opium and tie a baby up that is in a toxic condition. In a very weak baby I use atropine and nux vomica or strychnine. Sometimes you meet a family that is absolutely opposed to having you treat the baby unless you give it a lot of medicine. It is pretty hard to get along with people who have not yet learned that

disease can be treated with little medicine, and if you tell the mother to give a dose of castor oil and regulate the feeding, she thinks you are crazy and that it ought to have some medicine. I think large doses of medicine do more harm than good.

Dr. F. R. Stoddard.—This is a subject that interests us all here in Vermont, and everywhere, the raising of babies. It seemed to me that the only thing, that the principle for each physician that has one of those cases to look after especially, is to study each child, make a special study of the individual, for nature is so constituted that she will do many things that we don't expect. To illustrate, only last fall there was a baby born in the town where I live, and the mother wished to nurse the baby, but in order to be sure that the milk was all right some of it was sent to the State Laboratory, and our good friend, Dr. Stone said that milk was not fit to raise a baby on, but in spite of that the mother kept on nursing her baby and she nursed it for six months, and it grew very well. There is where we have to study the child and mother. That baby, according to Dr. Stone's theory, ought to die, but it is growing very well. At the age of six months it stopped growing and we put it on modified cow's milk and it is doing well now. As Dr. Crain said, the nearer we get to fresh cow's milk, clean, cool and modified, the better it will agree with the baby. For the last two years I have had very little trouble with those children in treating them.

To illustrate again how much nature does, a baby born in July or August, the mother was a little Irish woman and had two other children, and didn't care whether she nursed the baby or not, so she used to feed the baby from the bottle about every fifteen minutes, but it is growing and does not have the colic, and eats when it wants to, and it gets something to eat every time it cries, and is flourishing. On general principles that baby ought to have the colic and die, but it is growing.

I believe a good deal in calomel. It is pretty hard to tell what is going on inside of a baby. In some cases we will hunt a long time before we will find something that will agree with them. About a year ago I noticed one of the physicians speaking about using bulgarian bacilli to disinfect the bowels of the children, and I got some and gave five grams after each vomiting, and the child got better. On general principles the bacilli disinfects the bowels and it is supposed to be of benefit, but when you come to take individuals and the treatment, and the nourishment, it is hard sometimes to tell what will cure the patient, but the only thing I think we can do is to study that patient and determine by careful consideration of each case just what we think they ought to do.

Dr. W. N. Bryant.—I wish to report an incident coming under my observation, which emphasizes the necessity of care and cleanliness in feeding infants, also the danger of infection coming by way of the nursing bottle.

I had a maternity case some years ago and a few weeks after the birth of the child I found the mother to be suffering from pulmonary tuberculosis. The child was at once put on a bottle and the mother made a fair recovery, though she had and still has tuberculosis. The incident to which I refer I did not see myself but neighbors reported to me that the mother was accustomed to fix the bottle for the baby and if for some cause it was fussy about taking it she would place the nipple in her own mouth to

start it and then transfer it to the baby. And that mother was a trained nurse before her marriage. Between two and three years of age the child died from tubercular meningitis.

Dr. C. K. Johnson.—I did not intend to cover some of the points about which the doctors have spoken. In regard to the feeding, I think it will help us a good deal if we first get the confidence of the mother. As to the sugar, causing a temperature, Dr. Leopold found by experiments that infants could assimilate one hundred per cent. more dextrine and maltose than they could milk sugar without causing a temperature or a diarrhea. As to the use of opium, it may be needed in rare cases. Strychnine may be given by simply dissolving the ordinary triturate. Dr. Peck spoke about so many foods being on the market, I think if we take more pains with our feeding cases, we may adjust cow's milk so we will not need to use them. In some cases with a temperature, bowel irrigation may be beneficial, but we are apt to overdo this causing more irritation of the bowel. As to the use of cream, to simply tell a mother to use cream, is very indefinite as the percentage of ordinary cream varies greatly. Castor oil should be used where there is a temperature, that is, in what I have termed the infectious type. In closing, I simply wish to cite a few cases, and if any of you have such cases, I would like to have you try boiled milk and water mixtures without sugar, or Eiweiss-Milch.

THE CHEMISTRY OF FOOD.*

BY

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On the threshold of a new science, physical chemistry, which bids fair to furnish us rational explanations of all things in nature, life, mind, morality and disease, it behooves us to throw a glance at the recent past and recapitulate our knowledge of biology and pathology.

Darwin, in giving us the origin of species, through natural selection, established biology, as an exact science, alongside of chemistry, physics and astronomy; and of late the discovery of hemolysis, carrying as it does, our scientific knowledge into realms heretofore undreamt of, has inspired much respect for biology from the votaries of its sister sciences.

Chemical pathology is in its infancy. The monumental work of Thudicum on the physiological chemistry of the brain in 1874, has never been repeated, still less has any attempt been made to adapt his researches to the study of brain pathology. Only recently our best

equipped laboratories are beginning to try a little work along that line.

In 1879, in a prize thesis on the philosophy of disease, I dwelt on the close relation of chemistry and pathology. In 1882, I began publishing a series of biological papers, and in the one entitled *Animal Heat*, and its *Mechanical Equivalent*, the relation of food to human work was gone into at length, and the value of various foods in calories tabulated from the most recent authors.

In 1896, Gutrikox, in the laboratories of the University of Charkov, made brain analysis of total solids, nitrogen, phosphorus and sulphur. I have, many years ago, repeated several of his analyses for total solids, phosphorus, and sulphur in the brains of people dying insane, and have watched vainly ever since to see some such work reported.

In my paper on *Pathological Laws**, a full share is given to chemical affinity in its various relations to disease.

In 1903, Halliburton published his small book on the chemistry of muscle and nerve. His work is based on the simple observation that solutions of albumen coagulate at various temperatures, and his analyses stop with the determination of total solids and total nitrogen.

II. Gideon Wells, (1907) in his bulky volume on chemical pathology, largely made up of recent researches in the laboratories of Germany, treats of everything else except the chemistry of the nervous system or the chemistry of food.

The work of Gaube was brought to my attention in 1905, in some article in the *Lancet* treating of demineralization and remineralization. I sent for the four volumes and it repaid a careful study. Gaube is worthy of the master as a good evolutionist, and that is the quarter from which light is to come. His volumes were published in 1899-1903.

The study of metabolism is an all engrossing subject in therapeutics nowadays. The preparation of the different aliments, the investigation of the various ferments, assimilation as absorption and as oxidation or work; and the excretion, almost necessarily imperfect, of the products of combustion, leading to an accumulation of waste bound to end in death, but effective even in early and middle life, such are the important problems before us.

*Retiring President's Address, read at a meeting of the Nicollet-LeSueur County Medical Society, at LeSueur, Minnesota, January 2, 1912.

*In *Northwestern Lancet*, May 15, 1903.

In these days of fads, the progress in dietetics does not proceed step by step, but a revolution is attempted by the friends of vegetarianism. And the physician, especially the pathologist, is appealed to as the arbiter of such momentous reforms.

The functions of life are all reflections of the forces of nature. These forces included in what is generally termed the "environment" have sharp demarkations and admit of clear definition, and they are not many; and so the vital functions are few and readily distinguished. Without more than calling attention to the fact that metabolism consists of chemical reactions, and that the circulation of the blood is a calorific process, I wish to inquire how far we have been able to account for those more subtle chemical changes which seem to underlie the various enzymes or ferments, and point out the chemical compounds in the food which furnish the ferments their most important constituents.

Since their advent in physiology the enzymes have remained the most mysterious factors in metabolism. They are in biology what the toxins are in pathology. Their action is often catalytic, by which we mean that an exceedingly small quantity is capable of working great results. Their mere presence seems to bring about important changes, and some enthusiastic chemists believe that we have a key to a clear understanding of the toxins and antitoxins if we can explain the nature of the ferments.

Previous to the discovery of *hormones* and of *anaphylaxis*, which depart considerably from fermentation, the discovery of the oxidizing ferments impressed us deeply.

Much good work in analytical chemistry has been done by national departments of agriculture and we are beginning to reap the benefit in biology and in therapeutics.

The discovery of the bacteria and other low organisms and the making of culture media for them has brought us much nearer a clear understanding of metabolism, the relation of food to vital energy.

Through the enzymes, processes similar to combustion are brought about at a temperature compatible with life, and the oxidation of starch into sugar, of sugar into fat, and of fat into carbonic acid, furnish the mechanisms of the body their energy. It is not my intention to go deeply into the study of the various enzymes,

only far enough to make the importance of the chemistry of food clear, and to show the bearing of the ferments on toxic agents and other disease products.

Each elementary substance and each mineral entering into the composition of the human body seems to have localized itself into some organ of predilection and to have called forth some special enzyme, and in the laboratory this given mineral may be made to serve the purpose of the ferment for a demonstration.

J. Gaube treats the subject of the chemistry of food in this light, and will be quoted extensively in this paper.

Liebig in 1840 wrote: "It is exclusively inorganic matter which is the first source of alimentation of the vegetables."

Says Gaube: "The position occupied by man as a natural being, enables him to find the minerals he needs directly in the animal, the vegetable or the inorganic kingdom."

"The physical and chemical forces act in the living organisms after the same manner that they act in the inorganic world, because the organic is governed by the inorganic."

"Mineral matter in living beings is met with under the form of salts in solution or as salts directly combined as bases or as acids with protein. This distinction is important because whenever mineral matter is found as bases or as acids combined directly with protein you are in the presence of an enzyme; it is a law; vulgar examples, hydrochloric acid in gastric juice, sodium in pancreatic juice." Gaube.

The ferments are noted for their mineral wealth and pancreatic emulsin contains 2 to 3.5 per cent of mineral matter; magnesium is its dominant mineral.

Laccase contains more than 5.5 per cent of mineral matter; manganese is its dominant mineral. Laccase is widely spread in the vegetable kingdom, it is an oxidizing enzyme, fixing oxygen and liberating carbonic acid. (First oxidase, found by G. Bertrand).

Potassium combined with protein gives us the enzyme which in the muscles transforms the carbohydrates of the tissues into lactic acid.

The great importance of potassium in the vegetable kingdom arises from the fact that chlorophyll cannot produce starch (by polymerization of methyl aldehyde) except under the influence of potassium. While the sulphate and the carbonate bring about the formation of

starch, it is for the chlorid of potassium to dissolve it and help its removal as well as bring about its formation. Gaube.

In the animal economy the chlorid of potassium is the chief agent in the enzyme which converts starch into sugar. If you determine the quantity of potassium present you will have an index of the animal energy of which the tissues or the organs are capable. Gaube.

Says Gaube: "The quantity of sodium chlorid contained in the body of a healthy man may vary from 190 to 230 gms. I say a healthy man, for there are few biologic minerals impressed by disease so rapidly and with such intensity. Tuberculous cases, even those who feed heartily, are underchloridized."

He calls attention to the fact that cats and dogs and carnivorous animals in general dislike salt, while the herbivorous are fond of it. Then he explains, on the authority of Bunge, in what manner the ingestion of sodium chlorid helps the elimination of potassium chlorid which we take in excess in our vegetables.

It has been demonstrated in recent years that an excess of sodium chlorid in the body fluids and tissues dissolves away the phosphate of lime of the bones, otherwise insoluble, and this in adults makes the bones brittle.

According to Gaube, potassium chlorid is a dominant salt in the urine of tuberculous cases, and does not come from their food but from their blood corpuscles and from their muscles, which are the natural reserve of potassium.

This is the place to make note of the salt free diet treatment of dropsy.

In explanation of renal dropsy, Strauss in Germany and Widal and Javal in France, originated the idea that because of the inability of the nephritic kidney to secrete chlorid of sodium, an abnormal quantity of the latter accumulates in the tissues, and that the serum is retained there to hold it in solution, constituting dropsy. As food and the salt added thereto are the source of such salt, it is evident that more favorable conditions are brought by salt-free food. Hence it is advised that only salt-free food be used in renal dropsy. Such food includes eggs, unseasoned meat, unsalted butter and milk, bread without salt, fresh water, fish, potatoes, rice, fresh vegetables, fruits and chocolate.*

The discovery of a nitrogenous source of sugar in diabetes mellitus has modified somewhat the diet treatment. In severe cases, less nitrogenous food is allowed than formerly, a certain amount of carbohydrates is retained, and those sugars (levulose) are permitted which are capable of oxidation. The urine is carefully tested for diacetic acid, the presence of which is in ratio to the acidosis which brings on coma.

Abuse of sodium chlorid leads to wasting of tissue, and in excess it is a poison but not near so toxic as potassium chlorid, to which the natural toxicity of urine is due.

"To the distribution of lime phosphate in nature social questions of a high order are linked. If you cast your eyes over the land, soils rich in phosphates and granitic soils for instance, you will observe a strange contrast: on granitic soils the men are small, the domestic animals are small, the plants are small, the vegetation is wretched. On soils rich in readily soluble mineral matter, full of lime phosphate, the animal species are better developed and vigorous, the men are taller, more robust, vegetation is luxuriant and the crops abundant." Gaube.

Phosphates have a tendency to accumulate in the seeds.

The tricalcium phosphate of bones protects them against organic acids. The acid calcium phosphate can only be in the system in transit, the neutral calcium phosphate is the phosphate of organic exchanges, and the tribasic phosphate is the phosphate of the skeleton.

"The quantity of phosphate of lime eliminated in the urine of man, that is utilized, figured as dicalcic phosphate is about 1 G every 24 hours.

"The destiny of lime is the support of the tissues, it gives them the necessary solidity, it assures the stability of the tissues through the insolubility of its salts and it fixes nitrogen. Its chief role consists in taking part in a double decomposition with the alkaline salts and retaining this organic matter." It is the dominant mineral matter of pectase, the enzyme which coagulates vegetable matter, and of rennet ferment.

"Magnesium appears to be the metal of vital activity in what life has that is most precious and highest; the multiplication of the species and sensation."

Magnesium, phosphorus and potassium are the chief minerals of the brain, of the sperm, of

*Hare's Modern Treatment, Vol. 11, p. 684.

the yolk of egg, and of wheat grain. Phosphorus is linked to the fatty body of lecithins.

Magnesium phosphates prevail in the nucleins, the nucleo-albuminates and the caseins. As lime is necessary for the transformation of the lecithins so magnesia is necessary to the transformation of the nucleins. Sajou tells us that each atom of iodine which is rhythmically poured into the circulation by the thyroid gland fires an atom of phosphorus, thus furnishing the nerve cell its energy. Bauman was the one to show that iodine is the dominant mineral of the thyroid ferment.

Iron as an oxidizing ferment behaves thus: metallic iron in the egg becomes oxidized by incubation and in the blood the peroxid parts with some of its oxygen again becoming iron oxid, and in the lung becomes once more a peroxid to return to the tissues loaded with oxygen. This is an example of catalytic process.

So much oxygen is carried in the blood that manganese has to be called in as a far greater oxidizing agent than iron. Sulphates in the urine are a good index of the disintegration of organic matter. Sulphur has points of resemblance with oxygen, and chlorine is made to replace hydrogen in some organic compounds (acid acetic).

Oxalic acid may be considered as the result of the oxidation of hydrocarbons. The antitoxic properties of the fats might be thus accounted for.

River water, saturated with silicic acid, as the Minnesota after passing through Granite Falls, when it comes in contact with carbonate of lime as in this and the Mankato district, transforms the lime rock into a sandstone, each grain of lime is replaced by a grain of silica. Gaube believes that silicic acid in the body liberates carbonic acid in a similar manner, chiefly in the muscles.

"I believe," says Gaube, "that we may classify the toxins with the diastatic ferments; the toxins, like the enzymes, arise from the action of mineral matter; indeed, the culture broths lose, during bacterial growth, about 40 per cent of their mineral matter.

"The ferment of sprouting barley is an albuminate and an albumino-carbonate of lime and contains a small but nearly equal quantity of acid sulphuric and of acid phosphoric.

"Ferments of vegetable origin are albuminates accompanied by albumino-carbonates,

while the animal ferments are albuminates accompanied by albumino-phosphates.

"Outside the physiological acts which they share in common, we may say that the life of plants is a continual condensation of carbohydrates while the life of animals is a continual reduction of phosphorus compounds.

"In the manner of a gland the brain is the organ working most with its own substance; it is also the most mineralized. The muscles on the contrary are the instruments as J. Mayer remarked, to transform energy, but they do not originate energy, and therefore they are poor in minerals.

"The study of nutrition must begin by a study of the bio-chemical minerals, the primordial nutritive elements, without which all the others are inert."

Gaube proposes the following prescription to relieve demineralization:

Sodium chlorid	1.66	grams.
Calcium chlorid	0.66	"
Magnesium chlorid	0.43	"
Potassium chlorid	0.33	"
Distilled water	100.00	"

M. Sig. Teaspoonful after each meal, or the same may be sterilized by boiling and used for a hypodermic injection in the dose of 5 c.c. every other day.

A popular agent of remineralization is the sodium sulphate with sodium chlorid and sodium phosphate and may be given also hypodermically.

Mineral waters are also used in that manner after sterilizing. When time and opportunities are favorable, the elements of remineralization should be prescribed by arranging the diet of the patient. Thus phosphates are furnished to the system in a milk of good quality, and in the form of green vegetables, and a good supply of the cereals, products of the whole grain, and oysters and eggs.

Of course for a person in health *vivified mineral aliments* are the best; and there are a few among us who believe to this day that minerals, phosphates in particular, are not absorbed if they have not been first passed through a vegetable or an animal organism.

The importance of magnesium, the mineral of thought and reproduction in man, is to be judged from the fact that it exists in human flesh in an amount eight times greater than in the flesh of the ox.

In the smooth muscle fibers sodium instead of potassium prevails.

In the work of Gaube, we find careful analyses of the ashes of the different meats and vegetables and their adaptation for the use of man in health and in disease is pointed out with that care which has made French cookery one of the fine arts. It is well worth a careful study. But the term demineralization is not well chosen. What is meant is the lack of proper supply of the right mineral, in infancy, in youth and in adult life, in health and in disease. If we could only *demineralize* the prematurely aged, remove their calculi by other means than the knife, and make their arteries supple once more, it would be the medical wonder of the ages. And it is surely making a mistake to give these people mineral waters rich in lime salts, which can only increase the atheromatous deposits in their brains and hearts.

Still, as our mental and physical energy arises from the assimilation of life-giving minerals, it might well be in this strenuous life of ours that the most a physician could do for a business man threatened with prostration would be to ascertain some mineral with which the man's system is not saturated and feed it to him. Many such men in the course of a few years of the life they are accustomed to would complete the establishment of their family, or succeed in controlling some great enterprise, in securing a monopoly, and it means more to them than decades of dieting and of a relaxed life or semi-invalidism.

According to the analyses of Gaube, potatoes contain an excess of potassium.

Artichokes contain a large quantity of phosphoric acid.

Carrots contain much lime, as well as phosphoric acid.

Parsnips contain an excess of potassium.

Cabbages give a high ratio of phosphoric acid and considerable magnesia.

Turnips contain potassium in excess.

Considerable potassium is found in cauliflower.

Asparagus contains much acid phosphoric.

Spinach contains a large quantity of sodium and is very desirable as a green vegetable.

Beets contain a large quantity of silica and lime as well as of potassium.

Apples contain a large proportion of phosphoric acid and much silica.

Grapes contain much potassium and some phosphoric acid.

In wheat there is large quantities of phosphoric acid, also much potassium and magnesium. Barley and rye, the same. Indian corn is not greatly different. But oats stand alone for the large quantity of silica they contain. A large quantity of potassium is found in peas, and in beans, besides much phosphoric acid and some magnesia.

Rice shows a high ratio of magnesia as also of silica and of phosphoric acid.

In beef the ratios of phosphoric acid and lime are particularly high; much lower in mutton and lower yet in pork, lowest of all in chicken.

In fish the lime is as great in quantity as in mutton, while the phosphoric acid is only a twelfth as great.

The amount of mineral matter taken up by a man in 24 hours is about 35 grams and only about 18 grams are excreted. If all of it were excreted, man would live forever.

In a nursing babe 60 per cent of the mineral matter taken in is retained.

Daily alimentary mineral ratio.

Acid phosphoric	4.00	grams.
Acid sulphuric	0.40	"
Chlorin	10.00	"
Lime	2.00	"
Magnesia	1.00	"
Potassium	5.00	"
Sodium	10.00	"
Iron	0.04	"

The total mineralization of man is only 60 per cent that of an ox.

From mineral matter protoplasm was born, for the good reason that it could not be born of anything else. In course of time protoplasm individualized itself by entering into combination with metallic acids, a ferment was formed, and the cell was the result.

"The differentiation of organisms is the result (1) of the mineral aptitude of protoplasm, (2) of the rate at which mineral elements participate in life processes."

This is the mineral basis of the origin of species, and: "There is an active mineral for each family and so also for each species, for each genus and for each individual."

Minerals produce their maximum effect on the physical and intellectual work of man when they are ingested in the form of organic compounds and in quantity proportional to the requirements as determined by uranalysis.

In looking over this table it is readily seen that the lime, magnesia, and silica which produce arteriosclerosis and atheroma come to us from the vegetable kingdom; that the potash which gives rise to eclampsia and uremic convulsions, as well as furnish most of our muscular energy, is from the same source. Why is it that a vegetable diet is prescribed nowadays to ward off such conditions? The benefits from vegetarianism which are marked in some such cases, as I have experienced in my own person, must be due to some other, overlooked, factor. Most of us begin to feed on vegetables at a mixed table, and a great reduction in the intake of food is an immediate result, and it takes long

"Whenever a certain mineral element is found in the urine in excess it means that one of the tissues or one of the body fluids are wasting; and whenever one of the mineral elements in the urine is deficient, it means that one of the tissues or one of the fluids is ruined, that life is becoming extinct somewhere."

About 24 mineral ingredients of the urine may be made the subjects of analysis, but the silica, the potassium, the sodium, and the lime, the magnesia and the ammonia might be made the subject of special determination in addition to the substances generally looked for.

The urine of a pregnant woman should be slightly acid in reaction, and from the fourth week it should give a precipitate on heating which dissolves readily in contact with acids; women whose urine remains strikingly acid through the entire duration of pregnancy give birth to children in whom ossification is retarded;

MINERAL CONTENTS OF VEGETABLES, MEAT, ETC.

	Human flesh	Food	Urine	Beef steak	Wheat flour	Apples	Potatoes	Beans	Cabbage
Acid phosphoric	0.74	4.00	2.83	0.69	2.54	2.63	1.63	12.00	41.88
Acid sulphuric	0.32	0.40	2.75	0.62		0.16	0.60	1.00	.77
Chlorin	1.00	10.00	0.65	0.61		1.06	0.30	0.44	
Lime	0.23	2.00	0.35	0.14	0.21	0.13	0.32	1.55	14.63
Magnesia	0.36	1.00	0.17	0.40	0.40	0.25	0.50	2.15	11.56
Potash	3.00	5.00	1.64	3.93	1.60	1.04	5.79	13.00	21.34
Soda	1.17	10.00	6.00	1.27	0.04	0.77	0.29	0.20	5.36
Silica	0.25		0.02	0.12		1.24	0.22	0.20	1.32
Iron	0.17	0.04	0.004	0.04		0.04	0.003	0.007	2.84

for an appetite for the new food to become established. This gives rest to the alimentary functions and nature brings on the improvement. In fact, the diet of infancy (milk), which is also the diet of old age, is an animal fluid, and the broths of acute diseases could not well be replaced by vegetable infusions.

Although the ordinary text-books on uranalysis are silent in regard to the analyses for sodium, potassium, calcium, magnesium and silicon, the standard book of Hoppe-Seiler gives full details for that work, which is the same as that of mineral water analysis, and presents no unusual difficulty.

these children later on become readily rickety, especially when nursed by their mother.

In pregnant women and in children lime in the food is nearly always insufficient, and they offer no resistance to the bacterial diseases.

But demineralization is a most frequent result of bacterial disease. When it is the result of heredity it interferes with the evolution of the reproductive organs.

In demineralization it is less the nerve cells than the muscles and the red corpuscles that are affected. Disease species should be classed from a careful mineral analysis of the patient's urine.

The quantity of urea nitrogen is in ratio to

the manganese contained in the muscles of an animal and is three times greater in man than in a horse.

Barium is the dominant mineral of inosite-muscle sugar. When phosphates are excreted in excess, it is the loss of magnesia which gives rise to neurasthenia.

The work of Gaube is teeming with points of interest for the chemist, the biologist and the physician.

Of goitres he says: "It has been observed that goitres are chiefly developed in countries where the soil is formed of magnesian lime stone, dolomite, and the water of which contains magnesium sulphate.

Gaube extolled iodine as the great germicide (at least 12 years ago) and he used hypodermically the iodobenzol iodid of magnesium freshly prepared for a constitutional antiseptic.

To support the contention in the mineral basis of animal species he says: "The mineralization of the dog, which never suppurates, and the mineralization of the horse, which suppurates, on all occasions, are absolutely different.

"Whenever the blood loses three per cent of its water, the muscles lose twice as much, and the muscular tissue not being sufficiently irrigated, cramps set in, which are so painful."

This writer is less fortunate in proffered explanations of atheroma. Mineral incrustation in the tissues, he says, is the result of inflammation sometimes, and sometimes the result of irritability.

He speaks well of the treatment of diabetes by the permanganate of potassium.

Speaking of potassium, he reminds you that if you heat caustic potash to 100° with carbon oxid, the formiate of potassium is formed, and thus an organic compound results from two inorganic substances.

In the blood of blond people silica prevails, while in that of the black haired it is potassium. It is said that when the mind is out of equilibrium the blond are noted for their vagaries and the black for their furious outbreaks. In the hair of the red haired the carbonate of magnesium is found in greater quantity than the carbonate of lime.

Rheumatism is a frequent expression of retarded nutrition, or demineralization from hyperacidity.

On the subject of hyperthermia Gaube points

out that glycogen is the great heat producer in the body. In fever, the combustion exaggerated of hydrocarbons furnish much of the heat, but it is the combustion of glycogen as evidenced by potassium salts in excess in the urine which causes the greatest hyperthermia. The injection of invertin into the veins of animals furnishes a good demonstration and a lasting fever results. And the toxins have a character similar to that of invertine as agents of hyperthermia.

While the foregoing data are not to be dismissed in a careless way, I feel that they are matters of history, and our scientific attention is now taken up by the all absorbent chapters of the New Knowledge built on the solid foundations furnished by the discoveries of the X-rays and radium and its properties. All of a sudden physics have supplanted chemistry. The natural relationship of the elementary bodies has been firmly established, and the progressively complex grouping of ions gives us the true origin of organic as well as inorganic species, and assigns each its proper place in the Cosmos. Some of the most wonderful mechanisms of the nervous system have been made useless by the discovery of the *hormones*; and even the food idiosyncracies have been robbed of their terrors by the discovery of *anaphylaxis* and its biological products.

SURGICAL SUGGESTIONS.

If the surgeon desires to discover carcinoma of the cervix in a curable stage women past middle life must be examined periodically, for to wait until symptoms appear is often to discover the disease too late.

When Kocher's method fails to reduce a recent dislocation of the shoulder, it is usually because the surgeon has proceeded too rapidly. Deliberately is the only way to work quickly.

Gastro-enterostomy should not be performed unless there is, or is deliberately made, an obstruction in the duodenum or at the pylorus. If these remain, or become patent, the food will not be diverted through the artificial channel.—*American Journal of Surgery*.

Vermont Medical Monthly.

A Journal of Review, Reform and Progress in the Medical Sciences.

H. C. TINKHAM, M. D., }
B. H. STONE, M. D., }Editors.

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EDITORIAL.

RUBBER HEELS.

There is absolutely no objection, scientific or otherwise to it. The rubber heel is a product of modern civilization which has come to stay, the demand for it is growing, as witness the increased number of factories concerned in its output. The rubber heel is a boon to those who are compelled to do much walking—to the busy house-wife, who prefers a light shoe to the time-honored carpet slipper or moccasin and to that class of people who are subject to myalgias it is surprising how many little aches and pains will disappear upon the change from a leather to a rubber heel. It seems strange that we had not taken the hint that nature gave us, until but a short time ago. Nature padded the Os Calcaneus with the evident intention of minimizing the shock. When the step is completed, human beings on the other hand are counteracting this all-wise arrangement—by adding a number of layers of hard leather. Of course there are terminal nerve fibrils in the fat of the heel, and the skin beneath it. It makes quite a difference, therefore, when in coming down upon them

whether we do so on a hard leather, or a soft pliable substance. The same holds true when standing. The next statement may be somewhat overdrawn but, it does seem as if the abolition of the leather heel would do away with an immense quantity of noise. Stop, for a few moments in the corridor of a public building where a number of people visit, and you will readily appreciate what that means to those who are compelled to listen to both the pounding and the echo throughout the day. Manifestly the leather heel is to the rubber heel what the coat of leather is to one of cloth. The rubber heel bears the same relation to comfort in walking, as the rubber tire does in driving.

The question of whether in proportion to population, typhoid fever is more prevalent over the rural or urban areas, is a subject of an exhaustive study undertaken by Sedgwick, Taylor and MacNutt, in the September issue of the *Journal of Infectious Diseases*.

The authors have studied with great thoroughness, conditions in Massachusetts, Connecticut, and New Hampshire, and draw their conclusions from these areas which they consider representative. There is a widespread belief that typhoid fever is a rural disease. Newspaper and magazine paragraphs often advise persons about to visit the country to beware of typhoid infection, implying if not affirming, that the dangers of such infection are greater in the country than in the city, and the annual autumnal excess of typhoid fever which occurs almost everywhere in northern latitudes, draws attention to this disease, and the assertion that it is due to the return of many city dwellers from the country is so often reiterated, that it has come to be considered true, not only by the popular mind, but even in the mind of a large number of sanitarians, and yet this is contrary to much that we know regarding the spread of

typhoid fever. Bacteriology and epidemiology have proven that it is a disease of contact and crowding, of infected food and drink, conditions more common and affecting a larger proportion of the population in cities than in the country. It is this sharp contradiction between conditions reputed to exist and conditions secured by theory, that stimulated the authors to undertake their study.

In order to come to any well-founded conclusions, they assume that a reasonable definition of rural and of urban communities must first be sought, and looking to the United States Census for such a definition, they find that the eight thousand population mark has been taken as a basis of division of communities into urban and rural, and that this arbitrary line of demarkation is obviously, not preferably, to some other and perhaps lower figure. This has been appreciated by the later compilers of the census, and the last, 1910, standard has been lowered to twenty-five hundred.

As a basis for sanitary studies, it is necessary to bring together if possible, and compare, populations, living under either closely corresponding or strongly contrasting conditions. This is by no means easy to do. "There are for example great differences in many respects in living conditions and therefore in sanitary conditions between isolated farm-houses, country villages, and the somewhat larger and often compact communities which frequently cluster about a mill or a factory employing a hundred or several hundreds of operatives. Yet hundreds of all three of these and of many other classes are included in the rural group of the United States Census among communities having fewer than 8,000 inhabitants. The sanitary conditions in a community having one, two, or three thousand inhabitants and technically called 'rural' may and often do more closely resemble those of the city than they do those of the country farmhouse or the sparsely

settled hamlet. Such places may, for example, have public water supplies and sewerage systems, and if built closely around mills or factories, may possess typical city congestion and tenement-house crowding. Other communities, on the other hand, which under the Census division are also called 'rural' may be in fact mill towns or factory towns which have gone beyond the stage of country villages, but have not arrived at what are essentially city conditions. This state of development means that most of the dangerous conditions of the city have arrived while public water supply, sewerage and adequate sanitary supervision have not yet been secured. 'The state of change' has been called 'the state of danger,' and the dictum certainly applies in community life. Congestion is characteristically a city evil, but it is no less an evil when connected with the overgrowth of small mill or factory communities where it may exist in as great or even greater degree than in larger centers of population. Such communities, we repeat are often denominated 'rural' under any arbitrary classification which takes no account of the actual characteristics and distribution of housing, crowding, and other sanitary conditions of the various communities in question."

The authors finally decided as their definition of a rural community, one characterized by sparsity of population, with segregation of a few families upon a large area and an urban community is one characterized by density of population with concentration of many families upon a small area. With this basis of conclusions applied to Massachusetts, they found: 1. In the first place it appears that the total population of the state increased between the earlier and the later years about 40 per cent. This increase was chiefly among the cities having more than 25,000 population, although it was shared by many communities ranging from 5,000 upwards. On the other hand, population in towns having less

than 5,000 actually decreased by some 15 per cent. This movement of the population must be carefully kept in mind wherever conclusions are to be drawn. 2. Inasmuch as the deaths were, on the whole, somewhat less for the various communities during the later years (owing no doubt to general sanitary improvements) and while the population increased during the same period, the typhoid fever death-rates declined for the most part conspicuously, between the earlier and the later years. 3. The decline in the amount of typhoid fever as indicated by the decline in death-rates from that disease was considerably greater among the smaller than among the larger communities. This decline is especially noteworthy in the groups having less than 6,000 population. 4. The median line for areas (i. e., for the number of deaths) falls for 1880 and 1885, in the vicinity of populations of 15,000 and for the later years has moved toward a much larger community-size namely, about 50,000 population. 5. The most important result disclosed is, however, that in the earlier period the groups of smaller communities showed the highest typhoid fever death-rates, while in the later years this relation is reversed.

Their conclusions in regard to Massachusetts which are strikingly borne out in the further study along the same lines of the statistics of Connecticut and New Hampshire, are that typhoid fever is not found to be either absolutely or relatively to the population, a "rural disease." On the contrary during this period, typhoid fever has prevailed somewhat more among larger than among smaller communities, probably explaining the origin of the belief of to-day that typhoid fever is a rural disease; that a large number of the smallest and most rural communities are among those having the lowest typhoid fever death-rates, as well as a scarcity among the latter of communities of large size; and, on the other hand, revealing a notable con-

centration of relatively large communities in the groups having comparatively high death-rates.

We are evidently driven by all our considerations to the conclusion that no matter whether we take as a basis the total amount of typhoid fever material existing in the various communities of the state or the specific death-rates from that disease, typhoid fever in Massachusetts since 1890 cannot possibly be regarded as "a rural disease." It appears on the contrary not only that there is very much more typhoid fever in the city than there is in the country, but also that there is more of it there in proportion to the population. Typhoid fever must for the present, therefore, be regarded as an urban rather than a rural disease, at least in Massachusetts.

NEWS ITEMS.

Dr. Henry D. Holton, Brattleboro, Secretary and executive officer of the State Board of Health, for twelve years, has resigned, to take effect December 1st, and Dr. C. F. Dalton, Burlington, at present connected with the State Laboratory of Hygiene, will succeed him. Dr. Holton while president of the Vermont Medical Society, in 1873, suggested in his annual address the necessity of a state board of health, and a committee was appointed to take the matter up with the legislature. After thirteen years of work, the bill was finally passed, creating the board. Dr. Holton was appointed a member of the board in 1896 and four years later was made its secretary.

The Washington County Medical Society in Barre, elected the following officers: President, Dr. C. J. Runrill, Randolph; Secretary and Treasurer, Dr. E. A. Colton, Montpelier.

The Rutland County Medical and Surgical Society met at Lake Bomoseen, and elected the following officers: President, Dr. E. R. Clark, Castleton; Secretary and Treasurer, Dr. William Stickney, Rutland.

In the case of Dr. Henry Charles Ogle, Baltimore, Md., who sued the Maryland Casualty Company for \$20,000 damages, alleging that on

October 7, 1909, he operated on a patient and thereby became infected, resulting in total blindness, the court decided in his favor, allowing him damages of \$7,500. Dr. Ogle held an accident policy in the company by which he was entitled to \$5,000 in the event of blindness and a weekly payment of \$25 a week for a certain period.

Health Commissioner Lederle has announced that dealers selling oysters fattened in fresh water must show conclusively that the freshening beds are not polluted, if they are to retain their permits. The public is warned that the gray and relatively smaller oysters that are tonged in salt water are the only ones above suspicion.

Dr. M. B. Hodskins, for 13 years chief of staff at the Munson State Hospital for Epileptics, Palmer, Mass., has succeeded Dr. Berry in the management of the Lake View Sanatorium.

Dr. W. C. Berry, for 10 years manager of the Lake View Sanatorium, is about to start for Europe, where he will do work in neurology for an indefinite time, after which he intends to open an office in Boston for the practice of his specialty.

Dr. C. W. Strobell of Rutland announces his retirement from general practice to devote his entire time to operative surgery, the diseases peculiar to women, and the office treatment of referred chronic medical and surgical cases.

Dr. C. H. Beecher of Burlington announces his retirement from general practice to devote his time to medical consultation work and office practice.

Twenty-one of the leading German and the same number of the leading American universities have been selected for making a comparison to show the number of foreign students in each country. There were 54,823 students in the twenty-one German colleges and 74,325 in the American. There were 4,672 foreign students in Germany and 1,576 in America. The American Colleges are gaining every year.

The United States through the Secretary of the Treasury has just issued an order that prohibits hereafter the use of the common drinking cup on all interstate railroad trains. This is practically the same law that is in force in twenty-six states.

Dr. A. L. Alsberg who has for some time been in charge of the poisonous plant laboratory of the Department of Agriculture has been selected to take the position of Chief Chemist of the department. He is thirty-five years of age and is a graduate of Columbia College, receiving the degrees of A. B. and A. M.

A small epidemic of smallpox had broken out among the students of South Lancaster, Clinton, Mass., and forty cases and one death have occurred. The Massachusetts State Board of Health is investigating the situation.

For the first time on record, infantile paralysis has appeared among the Eskimos of Alaska. Reports have been made to Surgeon-General Blue of the Public Health Service in charge of the health of the Eskimos, of five cases of the disease and one death at St. Michael's and of ten cases and two deaths at Unkaleet, forty-five miles distant. Three cases have also been reported in Sitka.

The City of New York has protested to the State Health Commissioner, Dr. Eugene H. Porterm, against the proposed erection by Westchester County of a tuberculosis hospital at Croton Lake in the northern part of the county. The Water Supply Department of New York contends that the hospital at Croton Lake will be a menace to the water supply of Manhattan, because two streams which flow through the Griffen farm, which is the proposed site, empty into Croton Lake, not far from the intake of the new Catskill Aqueduct.

Dr. Lauder, Brattleboro, Vermont, has been appointed a member of the hospital staff of the Mount Pleasant (Iowa) State Hospital.

Dr. George M. Sabin and Dr. George E. Latour have been appointed medical inspectors of the schools of Burlington.

A man in France has just killed his wife at her request because she suffered agonies from an incurable malady. The couple were devoted to each other and she had many times entreated him to kill her to end her suffering. He finally did so by shooting her three times with a revolver. The husband surrendered at once. She had twice tried to commit suicide. The sister of the wife declared the man a saint, saying she knew what her sister and the husband had endured. The event occurred near Paris.

Miss Norma Garvin, daughter of Dr. Lucius F. C. Garvin, ex-governor of Rhode Island, committed suicide by drowning Nov. 20th. She was about thirty-five years old and unmarried.

Dr. William R. Lightbody, Harvard 1910, whose home is in Manchester, N. H., has gone into practice in that city.

Dr. G. C. Beckley of Derry, N. H., while driving recently, was severely injured by an automobile running into his carriage and throwing him out. He is gradually regaining the use of his legs and that part of his body that was paralyzed.

Dr. and Mrs. O. N. Eastman of Burlington are the parents of a son born in November.

Dr. and Mrs. G. M. Sabin are the parents of a son born in November.

Dr. T. E. Hays was married Oct. 26 to Miss Ella B. Thabault of Burlington.

Dr. T. E. Hays announces the opening of the new Beecher & Hays Sanatorium on Pearl Street in Burlington. This was formerly the Prime Sanatorium, but has been entirely refitted and equipped with baths of all sorts, apparatus for electrical treatment and equipment for scientific culture and exercise.

Dr. C. F. Whitney lately associated with the Laboratory of the Boston Board of Health has accepted the position as medico-legal chemist at the Laboratory of Hygiene, Vt. State Board of Health. Dr. Whitney has also been appointed to the position of adjunct professor of chemistry, College of Medicine, University of Vermont.

Dr. I. Ford Nasson who has practiced in Dover, N. H., for nearly twenty years has retired from active work owing to poor health.

Dr. Elizabeth McCarty, Boston University 1911, has taken Doctor Ford's offices.

Dr. Caesar a Von Randohr, referred to in the daily papers as an eminent New York physician, testifying as an expert in a suit of a physician to secure a fee of \$7,000, for services under a special contract declared that the rich always dispute doctor's bills and he testified that he would not treat John D. Rockefeller unless he paid him in advance.

A recent report of the Dean of the Medical Faculty of Columbia University to the president

of that institution shows that German, English, and French medical schools are not superior to the American. The report shows that clinical instruction in Germany is often bad and inferior to our best schools and that laboratory methods in Germany are very elementary and inefficient.

The Carnegie Foundation report leads us to infer that laboratory instruction is of a low grade in France also. Dr. Lambert concludes from a searching review of the Carnegie Foundation report that the best medical schools in America furnish better laboratory teaching than the German schools and that they are rapidly becoming as good clinical schools as are those of France and Great Britain.

The amount of money expended by our medical colleges for the training of each student is much in excess of that spent by the German schools. The average cost in Germany is \$565 annually, while Columbia University spends \$700 on each student. The difference in cost, says Dean Lambert, does not represent, as may on superficial view appear, the true difference between American and German values, because in the German estimate the entire cost of hospital teaching is added, where as here the hospital budget is not included. This includes the Presbyterian and Sloane Hospitals and the Vanderbilt Clinic.

The fact is that the medical department of Columbia University faces a deficit every year, as does every other school that furnishes the best instruction. The general fund of the university is drawn upon to meet this deficit, because the medical school has no endowment. While it receives occasional liberal donations, these are precarious.

The late Prof. D. B. St. John Rosa founded the New York Post-Graduate Medical School, which is the oldest institution of its kind in the world. There has just been unveiled in the corridor of the college a memorial to the Professor which is four feet wide and six feet in height, and is the work of H. M. Shrady who did considerable work for the Capitol at Washington. At the top of the tablet above the half figure in profile of Dr. Rosa were the words: "Every man's work shall be made manifest."

Dr. Abraham Jacobi has resigned as trustee of the New York Academy of Medicine, of which he has been a member for fifty-six years. He gives as a reason for his resignation the work

required of him as president of the American Medical Association and he thinks also that a younger man should be selected as a trustee of the Academy.

W. B. Saunders Company, medical publishers, are now established in their new building on West Washington Square—an ideal site right in the heart of Philadelphia's new publishing center.

The remarkable success of this House and the rapid growth of their business, with the increased facilities which this growth demanded, necessitated removal to larger quarters. They therefore erected a seven story building, housing all their departments under one roof.

Constructed of reinforced concrete, the building is absolutely fireproof and equipped with every modern aid for the manufacture and distribution of medical books and for the comfort and convenience of their employees.

A cordial invitation is extended the profession to inspect the new plant.

OBITUARY.

Lucius Wadsworth Clarke, M. D., University of Vermont, 1863; assistant surgeon of the Thirteenth Connecticut Volunteer Infantry until the close of the Civil War; for forty-six years a practicing physician in Cambridge, Wis., and for two years president of the village; died at his home, November 3, from senile debility, aged 81 years.

BOOK REVIEWS.

THE PRACTITIONER'S VISITING LIST FOR 1913. An invaluable pocket-sized book containing memoranda and data, important for every physician, and ruled blanks for recording every detail of practice. The Weekly, Monthly and 30-Patient Perpetual contain 32 pages of data and 160 pages of classified blanks. The 60-Patient Perpetual consists of 256 pages of blanks alone. Each in one wallet-shaped book, bound in flexible leather, with flap and pocket, pencil with rubber, and calendar for two years. Price by mail, postpaid, to any address, \$1.25. Thumb-letter index, 25 cents extra. Descriptive circular showing the several styles sent on request. Lea & Febiger, Publishers, Philadelphia and New York.

The Practitioner's Visiting List is so familiar that a discussion of its various features seems unnecessary. It contains a table of doses; therapeutic action of drugs; poisons and antidotes;

obstetrical record, etc., etc. A most carefully arranged and useful visiting list.

COLLECTED PAPERS BY THE STAFF OF ST. MARY'S HOSPITAL (Mayo Clinic) FOR 1911. Octavo of 603 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$5.50 net.

The papers by the Staff of Dr. Mayo's Clinic are so valuable a collection that this idea of putting them into satisfactory form for preserving, and a most convenient form for reference, must appeal to those physicians who are interested in these clinics, and who desire the views of modern surgeons who have large opportunities for observation. These papers cover a wide range of subjects.

SURGICAL AFTER-TREATMENT. Second Edition, practically rewritten. By L. R. G. Crandon, M. D., Assistant in Surgery at Harvard Medical School and Albert Ehrenfried, M. D., Assistant in Anatomy at Harvard Medical School. Octavo of 831 pages, with 264 original illustrations. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$6.00 net, Half Morocco, \$7.50 net.

The fact that this work has come to a second edition in two years is a positive indication that the book has received the recognition and support by physicians which its merits warranted.

This edition is a careful revision, many changes have been made, much new material has been added and many illustrations have been used. It represents the latest ideas of surgeons in regard to after treatment of surgical cases. It is a book which is indispensable to physicians who have the after care of surgical cases.

THE BLOOD OF THE FATHERS. A Play in Four Acts Dealing with the Heredity and Crime Problem. By Dr. G. Frank Lydston. The Riverton Press, Chicago, 1912.

This book written in the form of a play is an ingenious and interesting mixture of science and love based upon the idea that "blood will tell," and making clear the deduction that marriage should be considered from a scientific side as well as the sentimental side. It is an interesting and entertaining book.

SEXUAL IMPOTENCE. New (4th) Edition Enlarged. By Victor G. Vecki, M. D., Consulting Genito-Urinary Surgeon to the Mount Zion Hospital, San Francisco. 12mo of 394 pages. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$2.25 net.

This book is a careful discussion of the anatomy and physiology of the sexual organs together with the conditions which lead up to sexual impotence. Its pathology and treatment are considered at length.

This work is the result of careful and extended observation and experiment and is a carefully written treatise based upon thoroughly scientific investigation.

INFANT FEEDING. By Clifford G. Grulee, A. M., M. D., Assistant Professor of Pediatrics at Rush Medical College, Attending Pediatrician at Cook County Hospital. Octavo of 295 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$3.00 net.

It is safe to say that there is no subject of medicine in which the general practitioner is in need of direction more than in infant feeding. This book is just what the physician needs. There is not too much of it, still it is explicit. If every physician would read this book and follow its direction it would have a marked influence in lessening infant mortality.

MUSCLE SPASM AND DEGENERATION IN INTRATHORACIC INFLAMMATIONS. by Francis Marion Pottenger, A. M., M. D., LL. D. Medical Director of the Pottenger Sanatorium for Diseases of the Lungs and Throat, Monrovia, California. Sixteen illustrations. St. Louis, C. V. Mosby Company, 1912. Price \$2.00.

This monograph on Muscle Spasm and Degeneration with reference to light palpation as a method of diagnosis gives some original and interesting observations in regard to the diagnosis of intrathoracic diseases. It presents some new ideas which are entitled to careful trial at least. The book is interesting from departing from the time worn paths of diagnosis and giving new methods worked out from a large experience.

INTERNATIONAL CLINICS, a Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene and Other Topics of Interest to Students and Practitioners.—By Leading Members of the Medical Profession throughout the world. Edited by W. T. Longcope, M. D., Philadelphia, U. S. A., with the collaboration of Wm. Osler, M. D., John H. Musser, M. D., A. McPhedran, M. D., Frank Billings, M. D., Chas. H. Mayo, M. D., Thos. H. Rotch, M. D., John G. Clark, M. D., James J. Walsh, M. D., J. W. Ballantyne, M. D., John Harold, M. D., Richard Kretz, M. D. With regular correspondents in

Montreal, London, Paris, Berlin, Vienna, Liepsic, Brussels and Carlsbad. Vol. II, Twenty-second Series, 1911. Philadelphia and London: J. B. Lippincott Company. Price, \$2.00.

This number of the International Clinics contains many interesting and valuable papers. Among the most interesting papers are these on Pellagra, Poliomyelitis, Infant Feeding, Anesthesia, and Surgery of the Kidney. It is a compilation of most instructive papers.

A TEXT-BOOK OF PRACTICAL THERAPEUTICS. With especial reference to the application of remedial measures to disease and their employment upon a rational basis. By Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Fourteenth edition, thoroughly revised. Octavo, 984 pages, with 131 engravings, and 8 full-page colored plates. Cloth, \$4.00, net. Lea & Febiger, Philadelphia and New York, 1912.

Hare's Practical Therapeutics has been before the profession for more than twenty years. The fourteenth edition just out is carefully revised and includes the latest ideas of treatment, salvarsan, tuberculin and vaccine therapy being carefully discussed. The author is to be congratulated on keeping the book so thoroughly up with the advance in ideas of treatment.

A TREATISE ON FRACTURES AND DISLOCATIONS. By Lewis A. Stimson, B. A., M. D., LL. D., Professor of Surgery in Cornell University Medical College, New York. New (7th) edition, thoroughly revised. Octavo, 930 pages, with 459 engravings and 39 plates. Cloth, \$5.00 net. Lea & Febiger, Publishers, Philadelphia and New York, 1912.

This work on Fractures and Dislocations has been so generally recognized as a standard work that it needs no introduction.

This edition has new sections on fractures of the small bones from the knowledge gained from X-ray examinations. It has revised the operative treatment of fractures to conform to the modern consensus of opinion and many new illustrations have been added. This book is certainly keeping pace with the marvelous advancement that is being made in this branch of surgery.

HEISLER'S DISSECTOR \$4.50. This is an excellent manual of anatomy. It presents the chief and relevant anatomical facts from the viewpoint of the regions of the body. The text is clear, well written and with a minimum amount of verbiage; long, prolix descriptions are absent and the necessary details are given in a lucid manner and to the point. The value of anatomy to clinical medicine rests entirely upon the correlation of anatomical facts with morbid change or disturbed function. To

this end the author has included in small type many clinical observations and applied diagnostic facts. These are liberally intercalated throughout the text. To the reviewer this feature has given a unique interest to the volume and will certainly stimulate study and assist in the proper assimilation of anatomic details. The author has wisely considered the Basle anatomical nomenclature as his leading authority but has sanely kept some of the old, familiar names. Where old, and in some cases cherished names are used in preference to the B. N. A. nomenclature, the later designation is given in parenthesis.

The author is to be congratulated upon writing such a splendid single volume book. The illustrations by Mr. E. F. Faber are excellent in detail and those in colors are splendid examples of chromatic printing. In turning over the pages the wealth of illustrations tend to give the expression that one has in addition to the text pictorial anatomy.

The publishers have made a very attractive volume. The liberal use of bold-face type makes a pleasing page form and accentuates the teaching. This book merits a ready acceptance by students and teachers. It is a distinctive publication.

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MINUTES OF THE NINETY-NINTH ANNUAL MEETING OF THE VERMONT STATE MEDICAL SOCIETY, HELD AT MONTPELIER, OCTOBER 10-11, 1912.

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THURSDAY, OCTOBER 10th.
FORENOON SESSION.

The meeting was opened in the City Hall at 11 A. M., by President F. T. Kidder of Woodstock. Prayer was offered by Rev. W. J. O'Sullivan of Montpelier.

The Society was welcomed to Montpelier by Mayor J. B. Estee.

On motion of Dr. David Marvin the minutes of the previous meeting were accepted as printed in the "Transactions."

The report of the Local Committee of Arrangements was made by Dr. Wm. Lindsay.

The report of the Secretary was made by Dr. C. H. Beecher and was accepted and referred to the House of Delegates on the motion of Dr. Clark.

The Treasurer, Dr. C. F. Dalton, made his report which was audited by Dr. A. M. Norton as correct. It was accepted on motion of Dr. Holton.

The Executive Committee made no report.

The report of the Publication Committee was read by Dr. Beecher. It was accepted on motion of Dr. Sears.

The Legislative Committee's report was read by Dr. Sears, and on motion of Dr. Lindsay the report was placed on file and referred to the House of Delegates.

The report of the Committee on Medical Education was read by the Secretary. It was discussed by Dr. F. W. Sears and on motion of Dr. E. R. Clark the report was adopted and placed on file.

The Secretary read the report of the Necrology Committee and also that of the Medico-Legal Committee. On motion of Dr. Clark these reports were accepted and referred to the House of Delegates.

There were no reports of Delegates to other Societies.

President Kidder introduced Dr. T. D. Crothers as delegate from the Connecticut Society and Dr. French from the Massachusetts Medical Society. The meeting then adjourned until the afternoon session.

THURSDAY AFTERNOON.

The meeting was called to order by the President at two o'clock. The first paper on the program, the Vice-President's Annual Address, "Ether Anesthesia by the Drop Method" was given by the Vice-President, William Lindsay. The discussion was opened by Dr. A. O. Morton of St. Albans, and continued by Doctors Crain of Rutland, Bidwell of Waterbury, Strobell of Rutland and Dr. Lindsay.

The next paper, "The Report of a Death from Internal Hemorrhage with Unusual Findings at Autopsy" was read by Dr. L. H. Gillette of Springfield; it was discussed by Doctors Stone of Burlington, Melville of St. Albans, Townsend of Rutland, L. B. Morrison, Dr. Tinkham and Dr. Wheeler of Burlington.

The next paper was "Mechanical Ileus; With Points on Diagnosis and report of Two Unusual Cases" by Dr. M. R. Crain of Rutland. It was discussed by Doctors Bidwell of Waterbury, Tinkham of Burlington, Gillette of Springfield and Crain of Rutland.

The next paper on the program, "Recent Contributions to the Surgery of Bones and Joints," was in the absence of Dr. John B. Murphy, given by his associate, Dr. John F. Golden of Chicago. The paper was illustrated by lantern slides. It was discussed by Doctors Chandler of Montpelier, Wheeler of Burlington, Crain of Rutland, Melville of St. Albans, Derven of Poultney and Doctor Golden.

On motion of Dr. Melville of St. Albans, Dr. Golden was elected to honorary membership in the society.

The first regular meeting of the House of Delegates was held at five o'clock in the Council Chamber of the City Hall.

MEETING OF THE HOUSE OF DELEGATES OF
THE VERMONT STATE MEDICAL SOCIETY.
THURSDAY, OCTOBER 10, 1912.

Meeting called to order at 5.15 by the President, J. H. Winch.

The roll-call of the secretary showed twenty-five delegates or alternates present as follows:

- Addison County—E. H. Martin, E. T. Briggs.
- Bennington County—C. W. Bartlett.
- Caledonia County—E. H. Ross, E. J. Mackey.
- Chittenden County—F. J. Arnold, J. N. Jenne, L. B. Morrison, F. W. Sears, F. K. Jackson, I. S. Coburn, H. A. Ladd.
- Franklin County—C. S. Scofield, E. M. Brown, E. D. Washburn, A. O. Morton.
- Essex County—No delegate.
- Lamoille County—No delegate.
- Orange County—No delegate.
- Orleans County—No delegate.

Rutland County—H. L. Manchester, E. R. Clarke, G. G. Marshall, J. M. Hamilton, J. L. Welsh.

Washington County—A. C. Bailey, L. A. Newcomb, G. S. Bidwell, J. H. Winch.

Windham County—No delegate.

Windsor County—No delegate.

Report of last meeting read by the Secretary.

Moved that the report of the Secretary be accepted and adopted. Motion seconded and carried.

Mr. Austin made a report for the Legislative committee and presented a bill amending the Act of Incorporation of the Vermont Medical Society in 1813, changing the name of the Society and defining its powers and privileges.

Mr. Austin's report discussed by Doctors Jenne, Clarke and Hamilton.

Dr. Hamilton moved that the Legislative Committee, with Mr. Austin, be authorized to draw a new bill that involves all the features suggested by Mr. Austin.

Motion seconded and carried.

Mr. Austin reported for the Medico-Legal Committee the experience of the Society under its insurance feature during the time it has been in operation, namely since October, 1910. Mr. Austin reported they had only had one complaint, which was by Dr. Hazen of Burlington for threatened suit for malpractice in extracting two teeth while attempting to extract one.

Mr. Austin's report was discussed by Doctors Scofield, Sears and Hamilton.

Dr. Bidwell moved that Mr. Austin's report be accepted and the permanent committee be discharged.

Motion seconded and carried.

Dr. Jenne stated that the Special Committee appointed a year ago to report upon some programme for the celebration of our Centennial meeting, were not ready to report at this meeting, owing to the fact that he had been unable to get into communication with some of the members, and asked that the report be deferred.

There being no objection the report of this committee was deferred.

Dr. Hamilton, speaking for the Rutland County Society, extended an invitation to the Society to come to Rutland next year for their annual meeting, providing the Special Centennial Committee have made no other arrangements. Dr. Jenne stated that although he did not wish to anticipate the committee's action, he thought the committee would make some recommendations that would necessarily throw out the acceptance of this invitation. Dr. Sears moved, that under the head of new business, we take up the subject of Medical Insurance.

Motion seconded and carried.

The subject of Medical Insurance was discussed by Doctors Bidwell, Sears and Hamilton.

Dr. Clarke moved, the matter be laid on the table until tomorrow morning.

Motion seconded, put and carried.

Dr. Marvin brought up the question of the purchase of the Vermont Medical Monthly by the State Society and presented a circular letter from the owners of the Journal pertaining thereto.

By Dr. Marvin's request the communication was read by the Secretary.

Moved by Dr. Marvin that a committee of three be appointed to investigate this matter with power to act. Dr. Scofield moved that the motion be amended and that the committee report back to the Society before action.

Motion seconded, put and carried.

Dr. Sears moved an amendment that the committee report back to the House of Delegates at 8.30 tomorrow morning.

Amendment seconded, put and carried.

Dr. Marvin's motion, as amended, was seconded, put and carried.

Dr. Marvin moved that when we adjourn it be until 8.30 tomorrow morning.

Motion seconded, put and carried.

Dr. Bidwell nominated Dr. Bingham H. Stone of Burlington for President of the Society for the ensuing year.

Nomination seconded, and there being no other nominations it was moved and seconded that the Secretary cast a ballot for Dr. Bingham H. Stone of Burlington as President.

Question put and carried.

The Secretary cast a ballot for Dr. Stone as President of the Society for the coming year, and Dr. Stone was declared elected.

Dr. Marvin moved, that the Chair appoint a committee of three to meet and present names at an adjourned meeting tomorrow morning at 8.30 o'clock for the remainder of the officers named in the list.

Motion seconded, put and carried.

The Chair appointed as a committee on the purchase of the Vermont Medical Monthly, Doctors Marvin, Jenne and Clarke.

As the committee on nominations, Doctors Brown, Bailey and Hamilton.

On motion of Dr. Jenne, the House of Delegates adjourned.

ADJOURNED MEETING OF THE HOUSE OF DELEGATES, OCT. 11, 1912.

The committee on nominations reported as follows: The nominating committee would respectfully report and place in nomination for your consideration and revision the following names for officers:

President—Dr. B. H. Stone of Burlington.

Vice-President—Dr. W. W. Townsend of Rutland.

Secretary—Dr. C. H. Beecher of Burlington.

Treasurer—Dr. C. F. Dalton of Burlington.

Auditor—Dr. C. A. Cramton of St. Johnsbury.

Executive Committee—Dr. J. H. Winch of Northfield, Dr. H. W. Barrows of Stowe, Dr. C. H. Beecher of Burlington.

Publishing Committee—Dr. C. H. Beecher of Burlington, Dr. F. E. Farmer of St. Johnsbury, Dr. David Marvin of Essex Junction.

Legislative Committee—Dr. F. W. Sears of Burlington, Dr. E. A. Colton of Montpelier, Dr. E. A. Hyatt of St. Albans.

Necrology Committee—Dr. C. L. Erwin of Newport Center, Dr. R. E. Welch of Franklin.

Medical Education—Dr. L. W. Burbank of Cabot, for three years.

Medico-Legal—Dr. C. W. Barlett of Bennington, for three years.

Anniversary Chairman—

Delegates to:

1. Connecticut River Valley Medical Association, Dr. F. C. Angell, Randolph.

2. White Mountain Medical Association, Dr. H. L. Manchester, Pawlet.

3. White River Valley Medical Association. —

4. Maine State Medical Society, Dr. T. F. Gartland, White River Junction.

5. New Hampshire Medical Society, Dr. C. S. Scofield, Richford.
6. Massachusetts Medical Society, Dr. C. B. Ross, West Rutland.
7. Connecticut State Medical Society, _____
8. Rhode Island Medical Society, Dr. D. C. Hawley, Burlington.
9. Medical Society of the State of New York, Dr. G. R. Anderson, Brattleboro.

Member of Board of Registration—Dr. S. W. Hammond, Rutland.

It was moved by Dr. Jenne that the Secretary be instructed to cast the ballot for the officers and committees as named.

Motion seconded and carried.

The ballot was cast by the Secretary and the officers declared elected.

The following officers for the House of Delegates were elected:

President—Dr. C. W. Bartlett.

First Vice-President—Dr. C. S. Scofield.

Second Vice-President—Dr. G. G. Marshall.

Secretary—Dr. G. S. Bidwell.

Dr. Hamilton presented the following resolution:

It is hereby resolved:

That the Medico-Legal Committee be empowered to arrange in such manner as seems most feasible for medico-legal protective insurance for one year for the active members of this Society at a maximum expense of \$150.00, and it is further resolved that this sum be, and it is hereby placed at their disposal from any available funds of this Society.

Dr. C. S. Scofield moved the adoption of the resolution.

Dr. E. R. Clark moved to amend by referring the resolution to a committee to investigate and report at the next annual meeting.

Dr. Scofield accepted the amendment, and the motion was carried as amended.

The committee on the purchase of the Vermont Medical Monthly reported at some length and recommended that a committee be appointed to further investigate and report.

The committee's report was discussed by Doctors Jenne, Hamilton and Clark.

Moved by a member that the report of the committee be accepted, and the committee dismissed.

Motion seconded and carried.

Moved by Dr. E. R. Clark that a committee of three be elected by the House of Delegates, with power to act, to investigate the purchase of the Vermont Medical Monthly.

Dr. Allen moved to amend by striking out the words "with power to act" and inserting the words *report to the Society in one year*.

Dr. Clark accepted the amendment, and the motion was carried as amended.

The members elected to serve on this committee were Dr. Jenne, Dr. E. M. Brown, Dr. Scofield.

The special anniversary committee reported and recommended that arrangements be made for a three days meeting and celebration to be held at Burlington at the usual time next year, the celebration to be of a scientific, social and clinical character.

Moved that the report be accepted and that the same committee continue to act in conjunction with the Executive Committee.

Motion seconded and carried.

On motion of Dr. Hamilton the Chair appointed a committee of three to investigate the falling off in membership of the State Society and endeavor to

increase the membership in the Society, said committee to report at the next annual meeting.

Motion seconded and carried.

The Chair appointed on this committee Doctors J. M. Hamilton, C. W. Bartlett, A. C. Bailey.

On motion of Dr. Jenne the House of Delegates adjourned.

Attest:

L. A. NEWCOMB, Secretary.

The annual banquet was served at the Pavilion at 8.30 P. M. The post-prandial exercises were in charge of the Anniversary Chairman, Dr. W. N. Bryant of Ludlow.

FRIDAY MORNING SESSION.

The meeting was called to order at nine o'clock and the report of the Secretary of the House of Delegates was read.

The first paper on the program was "Diarrhea in Bottle-Fed Infants" by Dr. C. K. Johnson of Burlington. This paper was discussed by Doctors Derven of Poultney, Peck of Brandon, Bryant of Ludlow, Crain of Rutland, Stoddard of Shelburne and Dr. Johnson.

The next paper on the program, "Multiple Neuritis" was not read.

The next address "Diagnosis and Treatment of Syphilis" by Dr. Judson Daland of Philadelphia was discussed by Doctors Crane of Hardwick, Morton of St. Albans, Jenne of Burlington, Melville of St. Albans, Johnson of Burlington and by Dr. Daland in closing.

On motion of Dr. Jenne, Dr. Daland was made an honorary member of the Society.

Following this Dr. David Marvin of Essex Junction read a paper on "Blood Pressure; Its Control by Drugs." After the reading of this paper the Society adjourned to the afternoon session.

The Montpelier members gave a buffet luncheon, to the visiting members and guests of the State Society, in the banquet room of the City Hall at twelve o'clock, which was largely attended.

AFTERNOON SESSION.

The meeting was called to order at 1.30 o'clock by the President, and the discussion of Dr. Marvin's paper was taken up by Doctors Martin of Middlebury, Hammond of Rutland, Holton of Brattleboro, Wasson of Waterbury, Jenne, Beecher and L. B. Morrison of Burlington, L. H. Ross of Richmond and Marvin of Essex Junction.

By vote of the Society Dr. J. B. Anderson's paper on "Recent Additions to our Knowledge of the Etiology of Infectious Diseases" was read at this time. Following the reading of this paper, Doctors Stone of Burlington, Melville of St. Albans, French of Massachusetts and Dr. Anderson discussed it.

On motion of Dr. Dalton, Dr. Anderson was made an honorary member of the Society.

The President's Annual Address was next read by Dr. F. T. Kidder of Woodstock, his subject being "The Physician and his Relation to the Public Health." It was discussed by Doctors Bryant of Ludlow, Ferrin of Essex Junction, Peck of Brandon and Holton of Brattleboro.

Dr. Bryant offered the following resolutions which were adopted:

"WHEREAS, the Governor, in his inaugural address most fittingly referred to the matter of State aid for the Medical College of our University, therefore,

RESOLVED: That the State Medical Society in annual session assembled, desires to go upon record as heartily approving the recommendations of the Governor in this regard, and congratulates him upon his attitude toward advanced medical education.

RESOLVED: That our members are urged to use their influence with their local representatives towards securing an efficient appropriation for this purpose.

RESOLVED: That a copy of these resolutions be transmitted to the Governor by the Secretary of the Society."

Following this Dr. F. W. Sears of Burlington presented a paper on "Crime: Cause and Prevention," which was discussed by Doctors Marshall of Rutland, Crothers of Hartford, Connecticut, Derven of Poultney, Joseph of Burlington, Clark of Castleton, Colby of Stanstead, P. Q., and Dr. Sears of Burlington.

In the discussion of this paper Dr. Marshall introduced a resolution from the Rutland County Society which read as follows:

To the Legislative Committee of the House of Delegates of the Vermont State Medical Society:—

Through its committee the Rutland County Medical and Surgical Society begs to submit the following suggestions for changes or additions in the statutes of the State of Vermont.

The accompanying statistics by J. N. Barss of Vergennes show a pressing need of these or similar changes.

1. Compulsory medical school inspection.
 - a. Each school union to have at least one medical examiner.
 - b. All sections not formed into school unions be grouped for the purpose of medical inspection by the state educational commissioners. One member of the state education commission to be a doctor who will systemize method of inspections, receive, examine and present to the educational commission all reports of the local examiners.
 - c. Expense of medical inspection of schools to be one-fourth paid by the state, and the balance apportioned among the towns or cities of the respective unions.
2. That our present Parol Statute be changed so that the party committing an offense may be placed on parole without a conviction.
3. Segregation of inmates of state institutions after classification according to mental capacity and criminal tendency.
4. When in the opinion of a board to be created by the general assembly, after due hearing an inmate of a state institution has habitual or hereditary tendencies, the transmission of which, would be a menace to future generations they can order the individual sterilized.
5. "State Farm" for confirmed drunkards.
6. No marriage shall be performed without a certificate, from a reputable physician, of mental and physical fitness of the contracting parties.

Dr. Barnet Joseph of Burlington moved to endorse the resolution of the Rutland County Society. After a considerable amount of discussion it was moved by Dr. Stoddard that the resolution be tabled for one year, which motion was carried.

Dr. T. D. Crothers' paper on "Inebriety; Home and Office Treatment," the last paper on the program, was then read, and was discussed by Doctors

Wasson of Waterbury, Stoddard of Shelburne, Marshall of Rutland, French of Clinton, Massachusetts, Sears of Burlington and Dr. Crothers.

On motion of Dr. Hammond the Society expressed its thanks to the local members and committees, the Montpelier City Government, and all others who had helped to make the meeting a success.

The meeting then adjourned.

SECRETARY'S REPORT.

To the Members of the Vermont State Medical Society:

The membership of the Society is divided by County Societies as follows:

	Total membership	Dropped N. P. D.	Deaths	New members
Addison	22	5	1	4
Bennington	10	3	0	1
Caledonia	28	4	1	2
Chittenden	54	16	2	7
Franklin	32	4	0	2
Lamoille	12	2	0	1
Orleans	17	5	0	3
Rutland	58	8	0	6
Washington	45	6	0	2
Windham	20	17	0	1
Windsor	8	23	0	2
	306	93	4	31

Making a total membership of 306 which is a loss of 66 from last year. There have been dropped from the list 97 which number includes four deaths and 93 who failed to pay their dues.

There have been added to the list 31 new members.

There should be some explanation for the number of members who have failed to stay in the Society this year. I believe it to be due in great part, to the increased dues made necessary by the insurance of members against malpractice suits. This situation should be considered seriously by the House of Delegates at this meeting, and if the increase in fees is the cause of the marked reduction in membership some action is necessary if we are to retain our members, or make the insurance provision effective, since its value is in proportion to the number of members there are associated with it; with less than half the doctors in the State, members of the Society, its value is very markedly diminished.

I hear a good many complaints about the contract practice resolution; in some places it is not lived up to. There should be some consideration of this condition and the resolution enforced or repealed.

A number of cases of flagrant violation of Sec. 8, Art. 1, Chapter 2 of the Principles of Medical Ethics by members have been brought to notice recently. These should be investigated and the offenders dealt with as is fitting.

The possibility of our owning our Journal and printing our own Transactions should be investigated by the House of Delegates. I believe it to be possible for the Society to do this without increased expense over what we are now paying for the publication of the Transactions. We would then be able to control the advertising and general policy of the Journal, and make it of greater value to our members.

I believe we should request the State Board of Medical Registration, a part of which we name, to

(Continued on page xlv.)

AN EPITOME OF CURRENT MEDICAL LITERATURE.

A COLLECTING URINE DEVICE.

F. VAN DER BOGERT, Schenectady, N. Y. (*Journal A. M. A.*, June 8), after mentioning the difficulty of collecting urine from female infants, describes a method he has used with success, suggested to him by a parent. It consisted of fastening a firm cloth tightly like a drum-head over the rim of an ordinary large wash-bowl, on which the baby lies fairly comfortably. To avoid the filtering of the urine through the cloth, a small opening can be made in a convenient place. Specimens thus collected will necessarily be contaminated, but not more so, he thinks, than those obtained by various infant urinals or by other methods.

EPILEPSY (?) FROM EYE-STRAIN.

J. S. WYLER, Cincinnati (*Journal A. M. A.*, June 8), gives the history of the case of a young man, aged 23, who was subject to attacks resembling epilepsy, aggravated by the use of his eyes, which first appeared about a year and a half before he was seen by the physician. There was a premonitory cry, followed by a tonic convulsion, lasting from a quarter to half an hour. He was comparatively normal between the attacks. The attacks had become more frequent and had prevented him from following his occupation—that of a skilled mechanic. Close work requiring the use of his eyes and reading in the evening, had a tendency to bring on the attacks. Correction of the eye defect immediately was followed by cessation of the attacks, and he has been free from them for two and a half years. Wyler has never observed one of them personally, and therefore cannot positively assert that they were epileptic, but they were certainly stopped by the refraction.

INFANT FEEDING.

The principles of infant feeding as carried out by Finkelstein and used in the dispensaries of the United Jewish Charities, the Franklin Street Settlement and the Salvation Army in Detroit are described by D. J. LEVY, Detroit (*Journal A. M. A.*, June 22). They are: "(1) milk dilutions instead of percentage formulas. (2) long feeding-intervals: five feedings in twenty-four hours, four hours apart; (3) mixed carbohydrates; the addition of 10 gm. of flour and the use of oatmeal water as diluent; maltose dextrin as sugar; (4) limiting the total quantity of milk mixture to 1 liter (1 quart) a day; (5) the employment of broths, fruits and vegetables from the sixth month on." The least intelligent nurse can prepare a proper milk mixture, and the longer feeding intervals give rest to the mother and induce regular habits in the child. Breast nursing should never be given up until it is absolutely necessary. Levy thinks that when that occurs it is better to give one-half milk instead of one-third and increase to two-thirds milk after the first six months of life. The employment of broths and fruits and vegetables in the infant's diet is usually not sufficiently emphasized.

UTEROVAGINAL PROLAPSE.

G. B. SOMERS, San Francisco (*Journal A. M. A.*, June 22), speaks of the differences of opinion and method that exist among surgeons in regard to the operation of choice in uterovaginal prolapse occurring after the menopause. He restates his views formerly expressed and describes the technic he has followed in accordance with them. In conclusion he says that he believes that a careful consideration of the conditions involved in the operation for prolapse of the uterus will lead to the acceptance of the following propositions: "(1) It is better to preserve the uterus than to remove it. (2) The cystocele complicating prolapse of the uterus is most effectively treated by reinforcing the anterior vaginal wall. (3) Interposition or vaginofixation best answers the requirements of the operation. In regard to the technic of interposition I believe that, where the operation is applied to severe cases of prolapse, success depends largely on the following points: (1) amputation of the portio vaginalis; (2) transposition of the cervical stump high in the vault; (3) support of the stump by shortened sacro-uterine ligaments; (4) functional restoration of the perineum."

STERILIZATION.

W. J. MANNING, Washington, D. C. (*Journal A. M. A.*, June 22), describes and illustrates an apparatus whereby instruments and hypodermic medication may be rendered reasonably safe, convenient and prompt as regards sterility, as well as simple from a practical standpoint. The apparatus can be best understood by the aid of the illustrations. The author says: "Briefly stated, the essential features are that under this system little or no attention need be paid to the matter of the mechanical or the chemical cleanliness of instruments after this sterilizer is in operation with consequent relief of mind where one is without skilled help; the annoyance of the sterilizing receptacle running dry or overflowing is avoided; the applied agents mentioned are convenient for prompt use, and the nearest tinsmith or plumber may readily construct a similar contrivance for those who may desire such innovations in their operating-rooms, connected with their present equipment."

CARBON DIOXID PENCILS.

G. H. BOYER, Pottsville, Pa., (*Journal A. M. A.*, June 22), recommends the use of Prest-O tire tubes, used for inflating automobile tires, for forming carbon dioxid pencils. The original cost is \$1.25 and an empty one may be exchanged for a full one at a cost of 20 cents. A perforating valve apparatus costs \$2, making a total expense of \$3.25. To make the pencil of solidified carbon dioxid, remove the connecting tube from the valve proper, tie with string a piece of chamois 3 inches square, around the mouth of the valve, and close the end of the tube thus formed with a hemostat; then screw the valve tightly into the tube of compressed gas and operate it as the label describes for inflating tires. Test the contents of the chamois tube by feeling it, and when it feels solid you have a stick of solid carbon dioxid ready for use.

ADHESIONS OF THE COLON.

M. L. HARRIS, Chicago (*Journal A. M. A.*, June 22), calls attention to the importance of the recognition of the different pathologic conditions in the lower right quadrant of the abdomen. Appendicitis is not the sole cause of pathologic changes in this region. In many cases the cecum or the ascending colon is at fault. The conditions most frequently found are what may be called adhesions, varying, however, considerably in nature and probably in origin. Notice is first called to those on the posterior surface of the cecum and the posterolateral wall of the ascending colon. In some cases they may be better designated as agglutinations and while they are generally pathologic some may be best explained by assuming that the normal agglutination of fetal life has persisted to some extent. If this is extensive it must interfere with free action of the ascending colon. In another variety of adhesions we find distinct bands of new formed tissue between the ascending colon and the parietal peritoneum, the appendix, the omentum, or to the lower end of the ileum. Next Harris describes what is sometimes called membranous pericolicitis or Jackson membrane. In the early stages the wall of the ascending colon seems thickened and edematous. The endothelial layer of the peritoneum, which is slightly movable on the bowel wall, becomes separated from it and another layer forms beneath it. A raised thin transparent membrane remains attached to the bowel at the longitudinal bands where small blood-vessels may be seen entering and spreading over the thin membrane. Later this membrane is almost certain to become attached to the anterolateral parietal wall and becomes thicker with age and still more intimately attached to the ascending colon, extending from pouch to pouch and on contracting draws them together so as to practically obliterate them on the external surface of the bowel. The membrane can then only be removed with difficulty and leaves a raw and bleeding surface. In cecum mobile both it and the ascending colon are abnormally movable and as a rule abnormally enlarged. It may cause disturbance of intestinal function and may be mistaken for a pelvic tumor. It is a congenital condition but produces similar symptoms with the pathologic conditions before described. The one symptom practically always present in colonic adhesions is pain but varying in location and character. There is not usually any rise of temperature during the attacks. Young women from 20 to 30 years of age are most frequently the victims and the pain may be worse at the monthly periods. They are practically always constipated, differing generally in this respect from those with cecum mobile. Many of them are neurasthenics. The causes of the adhesions are not always clear but there is no doubt that they are of inflammatory origin, and Harris is inclined to consider that anaerobic organisms are responsible. The treatment of the condition is surgical and prophylactic. The surgical treatment is usually the first called for, as after the conditions begin to cause symptoms it alone can give relief. The incision should be large enough to allow a thorough examination of the entire region and the operation should aim to get rid of the adhesions. If the appendix is involved, it should be removed. If what are called agglutination bands are found, they should be separated. The inflammatory bands or adhesions should be divided or removed and the sites re-covered with peritoneum which should be brought over any uncovered parts posteriorly.

In membranous pericolicitis the membrane should be removed from the parietal wall and the colon left smooth and covered with peritoneum. If the membrane is thin and transparent and attached only at points, all that may be necessary is to remove it and control the small bleeding points with hot moist sponges. If it binds together the pouches removal will leave raw bleeding surfaces which must be covered by using the thin transparent parts of the membrane in the manner of Thiersch's grafts. Considerable ingenuity may be required. If very extensive adhesions to the parietal wall exist and the bleeding surfaces cannot be covered, this part of the bowel should be completely removed or excluded by anastomosing the ileum to the sigmoid. The results of surgery are usually satisfactory but recurrence may take place and medical prophylaxis is advisable.

SARCOMA OF THE FOWL.

PEYTON ROUS and JAMES B. MURPHY, New York (*Journal A. M. A.*, June 22), have attempted to determine the nature of the filterable agent causing a sarcoma of the fowl. Although the filterable viruses have but recently come to attention, it is known that they are of very diverse character and that, except as a matter of expediency, they can scarcely be discussed together. At present each constitutes a separate problem. This is especially true of the filterable agent which causes a sarcoma of the fowl. The disease is so different from the ordinary infectious processes that nothing can be preassumed with regard to the character of the etiologic agent. On the contrary, in considering it one must take into account all those numerous and often bizarre possibilities which are suggested by the literature on tumor causation. The first question concerning the agent is whether it is living. A very little of it will give rise to a growth from which numerous others may be started, each yielding the agent in abundance. But this does not necessarily settle the point. The agent might very well be a chemical substance somewhat similar to those used experimentally to produce atypical cell proliferation. The fact that the proliferation induced by a chemical compound ceases as the latter is expanded, whereas our sarcoma's growth is continuous, constitutes no objection. For the sarcoma cells may themselves be the source of the inciting chemical, and thus serve to perpetuate the disease. Such an assumption throws little light on the origin of the "spontaneous" tumor. Recently much work has been done in this direction without success. The results of differential filtration may have some value as indicating whether the agent is a formed body and its probable size. In sarcomatous tissue autolyzing at the temperature of the chicken's body (41 C., 105.8 F.) the agent remains active for less than forty-eight hours. Toluol and chloroform in the proportions employed to prevent bacterial growth during autolysis destroy it in less than two hours. So, too, will 50 per cent. alcohol or 2 per cent. phenol (carbolic acid). Unlike the virus of poliomyelitis, the agent fails to withstand phenol 0.5 per cent. Like the animal organisms in distinction from most of the vegetable ones (von Prowacek) it is rapidly destroyed by bile, and by saponin in high dilutions. At 41 C. it is within two hours deprived of all activity by 50 per cent. rabbit or chicken bile, or by saponin in strengths greater than 1 to 800.

Pituitrin* shows brilliant results in obstetrical practice.

PITUITRIN is undoubtedly the most reliable oxytocic ever offered to the medical profession. From all over the world we are receiving evidences of its value in difficult parturition. Expert obstetricians

assert that it is without a rival as a corrective of uterine inertia.



Read this tabulated report of eight cases under the observation of Dr. Oscar Bondy, of the Gynecological Clinic of the University

of Breslau, and reported by him in the *Berliner Klinische Wochenschrift*:

DURATION OF LABOR.

Before injection of Pituitrin.		After injection of Pituitrin.
34 hours.	-	45 minutes.
44 hours.	-	30 minutes.
48 hours.	-	15 minutes.
23 hours.	-	5 minutes.
36 hours.	-	35 minutes.
27 hours.	-	60 minutes.
44 hours.	-	10 minutes.
32 hours.	-	29 minutes.
Average, 36 hours.	-	28 minutes.

Dr. Emil Vogt, of the Royal Gynecological Clinic at Dresden, in the *Muenchener Medizinische Wochenschrift*, tells of the oxytocic action of Pituitrin in over one hundred cases:

"In half of the cases the Pituitrin was administered in the second stage of labor. It failed only once. In all other instances its action was very pronounced. And although we encounter a great many cases of narrow pelvis in Dresden (from 40 to 50 per cent.), it was not necessary to have recourse to forceps delivery in a single instance in which Pituitrin was employed. * * * According to our experience, Pituitrin is the most ideal oxytocic we possess today."

Try Pituitrin in that next case of difficult parturition.

Glaseptic ampoules of 1 Cc. (16 minims), convenient for hypodermatic injection; also ounce bottles.

WRITE FOR PAMPHLET ON PITUITRIN AS AN OXYTOCIC.

*The word Pituitrin identifies the pituitary extract manufactured by Parke, Davis & Co.

PARKE, DAVIS & CO.

THERAPEUTIC NOTES.

THE APPLICATION OF CHEMISTRY TO CLINICAL MEDICINE.—It has long been thought that the therapeutic value of cod liver oil did not rest upon its abundance of fatty substances, for while the advantage to be secured from the employment of fats in emaciation and general debility was truly appreciated, yet it was believed that it was to other elements that cod liver oil owed its acknowledged worth.

With an increasing chemical knowledge of cod liver oil, it became an obvious fact that the essential principles of the oil could be separated from the whole product without the loss of therapeutic power in the process, or, in other words, that these isolated principles when applied clinically would produce the effects hitherto secured from the entire oil. It was this practical fact together with the realization that in a vast number of cases any potential value possessed by the oil was more than neutralized by the distress occasioned when a defective gastric apparatus attempted to digest the entire greasy mass, that encouraged chemists to apply themselves to the task of extracting the essential principles and thus relieve the stomach of the burden. In short, chemical science has enabled the patient to secure every therapeutic virtue possessed by cod liver oil without being forced to digest a large amount of fats. Cord. Ext. Ol. Morrhuæ Comp. (Hagee) has long been recognized as the highest type of cod liver oil preparations, for results show that although it lacks the fat which makes the crude oil so unpalatable, yet it still retains those principles upon which the therapeutic value of cod liver oil depends.

PITUITRIN IN DIFFICULT PARTURITION.—Every physician who has any considerable obstetrical practice owes it to himself and to his patients to familiarize himself with the oxytocic function of Pituitrin. Here is an agent which, according to reports in the medical journals of the Old World (notably of Germany)—if obstetricians adopt it generally, as now seems likely—is destined to rob childbirth of much of its pain and terror. What shall we say of such an agent that fails but once in over a hundred cases in which it is used? And that is just what happened in Dresden, according to a report of Vogt, of the Royal Gynecological Clinic of that city. Vogt adds: "It was not necessary to have recourse to forceps in a single instance in which Pituitrin was employed."

For the benefit of physicians who are uninformed on the subject, it may be said that Pituitrin is an extract of the posterior or infundibular portion of the pituitary gland. While in use for a number of years—chiefly, perhaps, as a hemostatic and heart stimulant—it is only of late, comparatively speaking, that its value in uterine inertia has been fully understood. The product is prepared and marketed by Parke, Davis & Co., to whom inquiries should be addressed for further particulars of this remarkable agent. Not very long ago the company issued a pamphlet in which a number of interesting and surprising case reports were published. We understand that copies of this Pituitrin pamphlet are still available and may be obtained upon application to Parke, Davis & Co., at their general offices in Detroit, Michigan.

A THERAPEUTIC REQUISITE FOR NEUROTIC PATIENTS.—There is never a greater need for careful discrimination in the choice of remedial agents than in the case of neurotic subjects. As a result of perverted nervous function the moral fibre of such patients has become weakened, in view of which the physician hesitates to order drugs whose use otherwise would be warranted.

It is in just such instances that Pasadyne is of the greatest usefulness. Pasadyne, as is now generally known, is a standard preparation of the Concentrated Tincture of *Passiflora Incarnata*, and possesses marked soothing and hypnotic properties. A further distinct advantage of Pasadyne lies in its freedom from the dangers attending the use of drugs producing similar effects. The physician giving it, although he may look for the same results following the use of chloral or the bromides, need not fear any disagreeable after-effects.

A sample bottle may be had by addressing the Laboratory of John B. Daniel, Atlanta, Ga.

A SYSTEMIC ANTISEPTIC.—Although Cystogen ($C_6H_{12}N_4$) is excreted largely through the urine, it has been found in the blood, in the gall-bladder, in the cerebrospinal fluid, in the middle ear and in the secretions of the nasal mucous membranes and the accessory sinuses. It is excreted into the sputum of patients suffering from bronchitis and pneumonia.

The value of Cystogen as a urinary antiseptic has long been recognized but only during the past year or so has it been used in bronchitis, and other infections of the respiratory tract. Its action in these conditions, particularly if given in full doses, is most gratifying. Common colds are aborted if Cystogen is prescribed early, and given at any stage of the infection the pain and congestion are relieved, the excessive secretion is reduced, and the possibility of complications is lessened.

TREATMENT OF CONGENITAL CLUB FOOT.


Savariaud refers particularly to the equinovarus variety. In the case of children who can be given plenty of care, he advises treatment by daily manual correction under the supervision of the physician. In the intervals the corrected position should be maintained by appropriate apparatus. Later, these measures proving insufficient, tenotomy and forcible correction under chloroform are to be added. With sufficient patience, excellent results may thus be obtained, even in severe cases. Where less care can be given and more expeditious treatment is necessary, early operation on the bones, consisting of subcutaneous gouging in the young, and later astragalectomy and cuneiform resection, followed by the use of a plaster cast, are indicated.—*New York Medical Journal*.

RELATION OF DIET TO HEART AND BLOODVESSEL
DISEASE.

Bishop advises as an ideal diet bread and butter, with a certain portion of milk to supply the liquid, and sufficient cheese to meet the protein requirements, without excess of carbohydrates or heat units. A diet of bread and butter alone yields an excess of carbohydrates, taxes digestion, and induces an accumulation of excess weight and other evils, but if given with cheese, it forms a balanced ration upon which the patient will thrive and be comfortable.—*New York Medical Journal*.

TRANSMISSION OF THE WHISPERED VOICE.

Rist pleads for a more general recognition of the diagnostic value of whispering pectoriloquy. While this sign is, in a sense, the equivalent of bronchial breathing and bronchophony, it is more easily recognized than these in certain doubtful cases, e. g., where bronchial breathing reaches the ear in admixture with the normal vesicular murmur, where it resembles the so-called "harsh" respiration, or where its place of origin is deeply situated, as in the case of certain cavities, interlobar pleurisy, or central pneumonia. In these difficult cases bronchophony is likewise almost useless, being too loud and without differences of shading. Whispering pectoriloquy, on the other hand, allows of diagnosing the physical condition underlying bronchial breathing, viz., consolidation, partial or complete, with great delicacy and precision. Care should obviously be taken to exclude direct transmission of the whispered voice to the ear through the air. It is also to be remembered that when listened for over areas normally yielding bronchial breathing, whispering pectoriloquy is without significance. Curiously, it is precisely in the two conditions in which it was formerly asserted to be pathognomonic, viz., serofibrinous pleurisy and involvement of the peribronchial glands, that the sign is untrustworthy or valueless.—*New York Medical Journal*.



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revoke the licenses of physicians who are convicted of criminal malpractice.

Lastly, the celebration of our Centennial next year should be an inspiration for a large increase in membership and greater usefulness.

Respectfully submitted,

C. F. DALTON, Treas.,
Oct. 8, 1912.

Oct. 9, 1912, Accounts examined and approved,
A. M. NORTON, Auditor.

REPORT OF THE TREASURER, VERMONT STATE MEDICAL SOCIETY.

RECEIPTS.

Balance on hand, October, 1911...	\$1309 38
Received from Addison Co. Society	96 00
Received from Bennington Co. Society	52 00
Received from Caledonia Co. Society	116 00
Received from Chittenden Co. Society	280 00
Received from Franklin Co. Society	144 00
Received from Lamoille Co. Society	48 00
Received from Orleans Co. Society	144 00
Received from Rutland Co. Society	240 00
Received from Washington Co. Society	236 00
Received from Windham Co. Society	137 00
Received from Windsor Co. Society	52 00
Received from Interest on Trust Fund	65 00
Received from Dr. F. E. Clark, Bal. 1911 meeting	43 68
Received from Kress & Owen, exhibit	10 00
Refund Am. Med. Assn., Directory	6 00
Interest on Savings Bank Deposit...	19 88
	<hr/>
	\$2998 94

EXPENDITURES.

Paid Lane Press, printing	\$ 52 50
Paid Burlington Med. Pub. Co., journal	300 00
Paid Hotel Vermont, bal. 1911 meeting	44 50
Paid Susan A. Nott, reporting meeting	22 27
Paid Dr. G. W. Crile, trust fund int. & exp.	100 00
Paid Wm. A. Riley, carting	1 50
Paid Am. Med. Assn., directory	6 00
Paid Louise M. Converse, clerical work	140 60
Paid Katherine R. Farrell, sten. work	1 50
Paid H. J. Shanley & Co., stationery supplies	3 60
Paid W. G. Reynolds Co., Filing Cabinet	9 80
Paid Dr. C. H. Beecher, salary	50 00
Paid Postage	16 00
Paid Refunding duplicate dues	4 00
	<hr/>
	\$752 27
Balance on hand	\$2246 67
On deposit, Burlington Savings Bank	\$1031 88
Checking account, Burlington Trust Co.	1214 79
	<hr/>
	\$2246 67

PUBLICATION COMMITTEE'S REPORT.

To the Members of the Vermont State Medical Society.

The Publication Committee believing that the arrangements for publication of the Transactions had been satisfactory continued it for the past year.

We still feel that the State Society should control its official publications, and believe this could be done without increased expense per member.

C. H. BEECHER,
DAVID MARVIN,
F. E. FARMER.

REPORT OF COMMITTEE ON MEDICAL EDUCATION.

Your Committee on Medical Education read with profit all the articles on medical education in the 1912 educational number of "The Journal" of the American Medical Association and begs the privilege of incorporating in its report the following extracts therefrom as the most accurate obtainable statement of the present condition of medical education in this country.

NUMBER OF MEDICAL STUDENTS.

"The total number of medical students in the United States for the year ending June 30, 1912, was 13,412, a decrease of 1,374 since 1911. The total number of graduates for the same year was 4,483, an increase of 210 above 1911. Of the 4,483 medical graduates 763, or 17%, were reported to hold degrees in arts and sciences, as compared with 16.5% last year. It is expected that in future the percentage of graduates holding collegiate degrees will increase, since a large number of medical schools are requiring college work for admission.

NUMBER OF COLLEGES.

Since June 30, 1911, seven colleges have either suspended or have merged into others, one new college has been organized and two others formerly suspended were revived, leaving 116 medical colleges now existing. Sixty-five colleges have been closed by merger or otherwise since 1904, but in the same time fifteen new colleges were organized. Of the sixty-five colleges which have ceased to exist, thirty-seven closed by merger and twenty-eight became extinct. It is interesting to note that most of the closures of medical schools in Classes A and B were by merger, whereas all but two of the schools which became extinct had been rated in Class C. While the total number of medical schools is growing smaller and approaching more nearly the normal supply for this country, it is encouraging to note that the number of high-grade, stronger medical colleges is constantly increasing. In 1904, only four medical colleges were requiring preliminary education in advance of the usual high school educa-

(Continued on page xvi.)

GRAFTING OF HAIRY SKIN.

Lauenstein reports an unsuccessful attempt to transplant a hairy piece on one man's scalp to the scalp of another who was bald. The portions of scalp were exchanged between the two men, the hairy one necrosed, the transplantation of the other was successful in part, the base adhering, the superficial layer dying.—*New York Medical Journal.*

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tion. Now there are forty-five requiring one or more years of college work. The colleges have been remarkably improved also in regard to buildings, new laboratories, better equipment, larger hospital facilities and more and better full-time, salaried instructors.

LENGTH OF TERMS.

The length of term of each college fluctuates somewhat from year to year, but on the whole, during the last twelve years there has been a decided lengthening of college terms. Only one college this year reported sessions shorter than twenty-seven weeks. Eleven colleges claim courses of twenty-nine or thirty weeks, thirty-four claim courses of thirty-one and thirty-two weeks, and thirty-seven, the largest number, claim courses of thirty-three to thirty-four weeks. Eighty-five per cent. of the medical colleges now existing in this country claim to require from thirty-one to thirty-six weeks of actual work, as compared with seventy-six per cent. in 1910.

REQUIREMENTS.

The House of Delegates of the American Medical Association in June, adopted a report instructing the Council on Medical Education to omit from the acceptable list any medical college which after Jan. 1, 1914, does not require for admission in addition to the four-year high school education, at least one year in higher preliminary work, including courses of college grade in physics, chemistry and biology. The medical profession of the United States, therefore, has gone on record for entrance qualifications which will bring medical education in this country more nearly on a par with the requirements in other countries.

Another development of the year was the action of the New York Education Department in requiring that after Oct. 1, 1912, no medical college will be registered as being up to the required standard which does not have at least six salaried full-time teachers. This is one of the chief improvements of the year. Buildings, equipment, laboratories, good location and clinical material are important and essential if there are good teachers to make use of them. Without such teachers, however, their possession is of less consequence. Given these expert teachers, the chances are that they may be relied on to secure the needed laboratory equipment, to develop working medical libraries and museums, and to attract dispensary and hospital patients. While there have probably been fewer changes of a spectacular nature during the last year as compared with previous years, nevertheless the changes within the existing colleges have been even more marked. The campaign for improvement in medical education, therefore, is still being actively carried on."

Respectfully submitted,

WALTER L. HAVENS,
J. M. ALLEN.

COMMITTEE ON NECROLOGY SUBMITS THE FOLLOWING REPORT:

There have been four deaths in the ranks of the Society during the past year, viz.: Dr. L. M. Bingham, Burlington, Dr. P. H. McMahon, Burlington, Dr. A.

C. McDowell of Lyndonville and Dr. G. F. B. Willard. Obituaries are prepared in cases of these deceased members by Dr. C. A. Pease of Burlington, Dr. P. E. McSweeney of Burlington and Dr. A. A. Cheney of Lyndonville respectively.

S. F. HAMMOND,
Chairman of Committee on Necrology.

REPORT OF ATTORNEY.

St. Albans, Vt., Oct. 8, 1912.

To Dr. E. A. Hyatt, Sec., Dr. W. Lindsay, and Dr. James N. Jenne, Chairman; Medico-Legal Committee of the Vermont State Medical Society:

Only one case of threatened suit for malpractice has been submitted to me this year, and its history is brief.

January 9, 1912, F. R. Campbell, Attorney for Mitchell Blaine, a student in the University of Vermont, threatened suit against Dr. L. D. Hazen of Burlington, Vt., for extracting two teeth while attempting to extract one tooth. Dr. Hazen on January 10th, notified Medico-Legal Committee, and January 13th I was sent to Dr. Hazen and obtained from him the necessary power of attorney, and thereupon immediately saw Mr. Campbell, and notified him that upon investigation the Vermont State Medical Society had determined to resist this claim because it appeared to be unfounded. Mr. Campbell notified me that he should immediately bring suit, but nine months have passed and I have heard nothing further from the case.

I have submitted to the Legislative committee recently, a tentative plan of a bill to be introduced in the Legislature to amend the Charter of the Vermont State Medical Society, according to recommendations made by me a year ago.

Respectfully submitted,

WARREN R. AUSTIN,

Attorney for Vermont State Medical Society.

OBITUARY.

DR. L. M. BINGHAM.

The death of Dr. LeRoy Monroe Bingham occurred at his home in Burlington, Vermont, November 27th, 1911. Dr. Bingham had been in good health for some time and his sudden death was a great shock to his family and many friends.

He was born in Fletcher, Vermont, April 10th, 1845. He enlisted as a private in Company H, Second Vermont Regiment, May 7th, 1861 when sixteen years old. He was soon promoted to Corporal. May 3rd, 1863, he was severely wounded in the assault on Mayre's Heights; and again May 5th, 1864, in the Wilderness Campaign. Later he was at the Marine Hospital in Burlington under the care of the late Dr. S. P. Thayer. He was mustered out of the United States service June 29th, 1864.

On returning to Vermont Dr. Bingham entered the Academy at Stowe and later graduated from the Johnson Normal School. For a time he was instructor in the Hampton Institute at Fairfax, Vermont.

Graduating from the Medical Department of the University of Vermont in 1870, with high honors, he began the practice of his profession in Stowe.

(Concluded on page xx.)

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CATALOGUES

The Medical Department of the University of Vermont will appreciate it very much if any of the Alumni can furnish catalogues of the Medical Department of the following dates to complete the files, 1857-66-7-8-9-71 and 73. These may be sent to the Dean.

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In 1874 Dr. Bingham removed to Burlington where he built up a large practice by his ability as a diagnostician and surgeon. His wide experience and sound commonsense made him a valuable consultant; and his genial, shrewd humor endeared him to all with whom he came in contact. His reputation extended throughout and beyond the State of Vermont.

From 1875 to 1880 he was demonstrator of Anatomy in the Medical Department of the University of Vermont. He was attending Surgeon at the Mary Fletcher Hospital from the time of its organization in 1879 until his retirement in 1900, when he became consulting surgeon.

In 1880 he was appointed Surgeon-General with the rank of Brigadier-General and served on the staff of his Excellency, Governor John L. Barstow.

In 1894 he established the Amy Proctor Sanatorium. In 1900 he became attending physician to Dr. W. Seward Webb and accompanied him for several years.

Dr. Bingham was a man of strong personality, faithful to his Christian duties and his generosity and thoughtfulness for others gave him the love and respect of all with whom he was associated.

He was a prominent member of the Methodist Episcopal Church in Burlington, to which he gave much of his time and in other ways aided it, especially during the last years of his life.

In 1901 he was appointed Chief Surgeon of the Rutland Railroad, which position he held at the time of his death. In 1910 he was President of the New York and New England Association of Railway Surgeons.

He was a member of the American Medical Association and of the Burlington and Chittenden County Clinical Society.

He is survived by his wife, one daughter, Miss Amy Proctor Bingham; and two sons, Harry LeRoy Bingham and Royal Edwards Bingham.

In the death of Dr. Bingham passes a life that could well be an example to all; but that could not be realized by any one more than by those who were intimately acquainted with him. His interest in their success, often to his detriment, his untiring thoughtfulness for them, and his interest in their work leaves in their hearts a feeling of warmest admiration as well as deepest sorrow.

C. A. PEASE, M. D.

DR. A. C. McDOWELL.

Dr. A. C. McDowell was born at Sheffield, Vt., Dec. 14th, 1864, and died at Lyndonville, March 2nd, 1912, after an illness of only five days with pneumonia.

His education was obtained at Orleans Liberal Institute at Glover, Vt. and the Medical Department, U. V. M., obtaining his degree of M. D. in June, 1890.

After graduation, Dr. McDowell located in Barnet, Vt., practicing there two years; coming to Lyndonville in April, 1893, where he was engaged in active practice until his death.

In Nov., 1901, he was married to Edith Dwinell of Glover, Vt., who with one daughter survives him.

Dr. McDowell was a prominent member and past master of Crescent Lodge, F. & A. M. Also a member of Valley Lodge Jr., O. U. A. M., and a member of the board of school directors for several years.

Dr. McDowell possessed to a rare degree those qualities that make the successful physician.

Always cheerful and possessed of a fund of ready wit that made him a welcome guest in any home or in any gathering—a good mixer among men and popular in the club and social life of the community.

To the family and friends of Dr. McDowell, his loss is irreparable, and as we miss his wise counsels and words of cheer, we exclaim with the poet: "Oh, for the touch of a vanished hand, and the sound of a voice that is still."

A. A. CHENEY.

DR. PATRICK HENRY McMAHON.

Dr. Patrick Henry McMahon, the eldest son of John and Bridget (O'Shaughnessy) McMahon, was born in Stowe, Vermont, January 9, 1854. He received his early education in his home town; going to school in winter and working in summer to lessen the financial burdens of his parents. He came to Burlington to live in 1878. In 1891 he entered the University of Vermont College of Medicine, graduating in the class of '94, thus realizing the ambition of his boyhood. He took post graduate course at the New York Post Graduate School and Hospital and then entered into general practice in Burlington, where he was most successful.

In addition to his skill and ability his patients found him honest and unselfish, always ready to give them the best of his knowledge and work, never sparing himself when he could help others.

By his love for his profession, his kind and zealous care of patients, his congenial manner and his great love for his home, he made many friends; and his loss was keenly felt by all, especially the poor of Burlington.

As a man, Dr. McMahon, had many sterling qualities. He arrived at conclusions quickly and accurately and was fearless and strong in his convictions.

In 1897 he wrote an article on "Infant Feeding" for the Vermont Medical Monthly; and in 1907, one on "Placenta Praevia and How to Treat It," and another on "Some Causes of Postpartum Hemorrhage" published in the American Medical Journal.

He was a member of the Burlington and Chittenden County Clinical Society, the Vermont State Medical Society, from which he was chosen delegate for 1911-12, the American Medical Association, the Phi Chi Fraternity, the Mutual Benevolent Society and the Catholic Order of Foresters, being medical examiner for the two latter. He was also a member of the Knights of Columbus and trustee of the local council.

On December 14th, having just returned from a professional call, he was seated at his desk reading the morning paper when God summoned him to his eternal reward. The suddenness of his death came as a great shock to his family, although it is now known that for some time previous he realized that he was suffering from an organic disease of the heart and that death was imminent, a fact which he carefully concealed from his family. His funeral was held from St. Mary's Cathedral, Burlington, Vermont.

He is survived by his wife, Mrs. Catherine (Shanley) McMahon, to whom he was married in 1880; by two daughters, Mrs. J. V. Whelan of Norwalk, Conn., Miss Agnes E. of Burlington and one son, George F., U. V. M. '12, who now resides in Chicago.



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