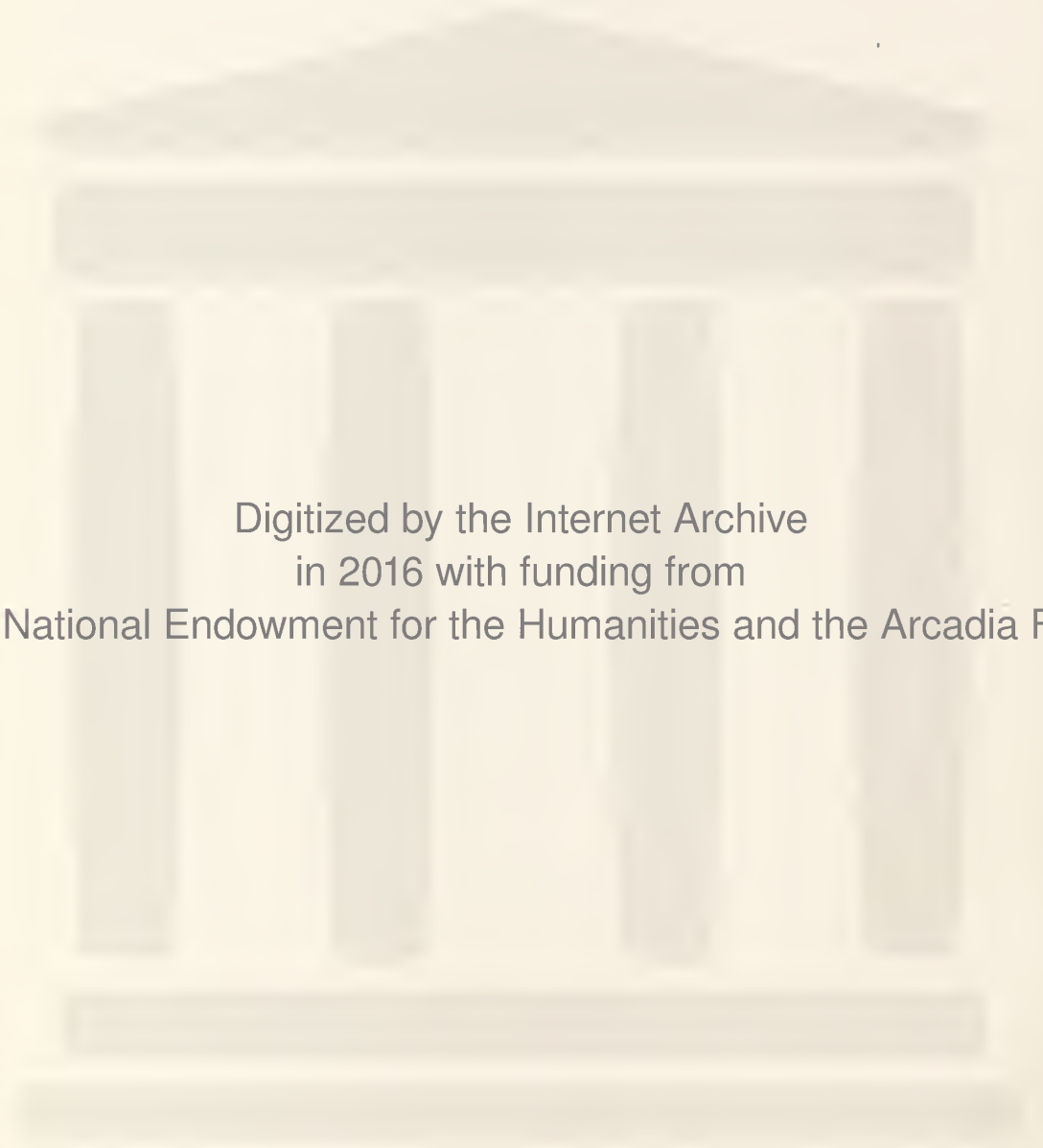

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SURGERY VS. X-RAY AND RADIUM THERAPY IN THE TREATMENT OF TUMORS OF THE UTERUS*

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The discovery of the x-rays and of radium and the development of the technique of their application introduced a basis for differences of opinion as to the treatment of tumors of the uterus which has made it imperative to examine critically the evidence presented by the results of various methods of treatment or of combinations of methods.

The American College of Surgeons deemed such a comparative study of the treatment of carcinoma of the uterus of such importance that carcinoma of the cervix was chosen as the first subject for intensive study. In the Cleveland Clinic the whole problem of the correlation of x-ray, radium and surgery in the treatment of tumors of the uterus—both benign and malignant—is under investigation.

Treatment of Benign Tumors of the Uterus

We are in accord with the conclusion of John G. Clark that near, during or after the menopause, intramural fibroids of moderate size or fibrosis associated with hemorrhage should be treated by radium or radium plus deep x-ray therapy, unless the tumor is submucosal or subperitoneal, when radiation will probably fail.

In my judgment, on the other hand, in the child bearing period, radium and x-ray should be used only in the treatment of cancer of the cervix. Since, in these cases, surgery carries an operative mortality of less than one per cent with permanent relief in about 100 per cent; since surgery assures the preservation of 100 per cent ovarian balance, and preserves to a surprising degree the child bearing function, there would seem to be no question regarding the use of surgery in the treatment of fibroid tumors within the child bearing period unless for some general reason the patient is not a good surgical risk.

*Read before the Inter-State Assembly of the Tri-State District Medical Association, Des Moines, October 29, 30, 31 and November 1, 1923.

The technique of partial or of pan-hysterectomy and of myomectomy, is now so perfected that any description here would be a waste of time. There is one type of operation, however, in which we have formerly been baffled and which we now apparently have conquered—that is, the removal of a fibroma or a myoma from a pregnant uterus in which the growth is so situated that the obstetrician sees clearly that normal delivery cannot be made and that a premature abortion will destroy the fetus and to some extent imperil the mother.

We have found by experience that in such a case when a miscarriage attended operation, it did not occur during nor immediately after the operation, but usually twenty-four or more hours later—the miscarriage being preceded by a period of labor pains. In considering the large numbers of physical injuries unattended by fear that a woman may sustain without miscarriage, and on the other hand the frequency with which a miscarriage occurs as the result of a strong emotional shock, it occurred to me that the removal of the emotional factor might obviate the danger of miscarriage.

The following plan of management was therefore adopted:

1. That the patient be kept in ignorance of the day appointed for the operation.
2. That a physiologic dose of morphin be given an hour before the administration of the anesthetic.
3. That the patient be given light nitrous-oxid-oxygen anesthesia in bed and be taken under light nitrous-oxid-oxygen anesthesia to the operating room.
4. That during operation the entire field—abdominal and uterine—be blocked with novocaine.
5. That during operation handling of tissues be reduced to a minimum.
6. That the patient be returned to her bed under light nitrous-oxid-oxygen anesthesia.
7. That the patient be kept under morphin for forty-eight hours after operation as in the Alonzo

Clark treatment of peritonitis, much water being given during this period.

8. That at the end of forty-eight hours, the morphin be diminished, unless the slightest rhythmic pain occurs, in which case morphin should again be increased.

By this plan of management I have taken out myomata as large as the fetus and have even exposed the placenta without a single post-operative contraction pain. One patient later gave a normal birth to twins.

The total series of my associates and myself of fibroid tumors of the uterus includes 1,235 cases.

THE BORDERLINE CASES BETWEEN BENIGNANCY AND MALIGNANCY

A group of cases which appear at the opposite extreme of life offer another type of problem—namely, the woman at the period of or after the menopause in whom examination reveals a normal vagina and a normal cervix, no fibroid and but slight thickening of the uterine wall, the only sign of trouble being a slowly increasing amount of discharge which may or may not be stained with blood. Such patients as these belong in the pre-cancer class, in fact, 5 or 10 per cent show cancer.

Experience has shown that local and general treatment exerts little influence; curetting and intrauterine treatment sometimes stops the discharge; more frequently no good effect is seen.

What shall we do with these cases? Shall we wait and see what happens? This courts disaster.

Shall we advise treatment with radium and the x-rays? Surgery must be used in these cases just as if it were certain that there was a fundus cancer—we know there is no cervical cancer.

As a substitute for operation we may use radium and deep x-ray therapy, but the advantage of radiation as compared with surgery in the treatment of cancer of the fundus is not clearly established. If there is no cancer, in certain cases either radiation or surgery will do well, but in general, surgery is better than radiation, for radiation will not relieve cases of sub-mucous fibromata; nor will it relieve the cases in which there is degeneration of the wall of the uterus from arteriosclerosis of the uterine artery.

The following point may justly be raised: Why be in doubt as to the presence of cancer, when by a curettage that fact can be ascertained?

First of all, in its earliest stage, cancer may be missed and no cancer cells may be demonstrated in the curettings. My opinion is that a hysterectomy is indicated whether or not a cancer is found. If there is no cancer today, do we know that there will not be a cancer another day? Moreover, these senile changes are usually not cleared up by curettage; and finally, vaginal hysterectomy prolongs the operation for only a few minutes beyond the curettage, and the risk is almost nil; that is to say, the patient secures safety against the future and relief from local trouble at the expense of but a trivial discomfort and a negligible risk.

CARCINOMA OF THE FUNDUS

In doubtful no less than frank cases of carcinoma of the fundus, surgery—vaginal hysterectomy—is indicated.

The same procedures are employed when the diagnosis of carcinoma is definitely established with the following added precaution to prevent the implantation of cancer cells: before operation gauze saturated with alcohol is passed well within the cervix and held firmly by means of heavy clamps.

In the certainly inoperable cases radium alone or in combination with deep x-ray therapy offers the best method of palliation.

CARCINOMA OF THE CERVIX

In a case of suspected carcinoma of the cervix a section is first made for microscopical diagnosis. If the diagnosis is confirmed, our method in the past was to destroy the local growth with the cautery and to pack the vagina with alcohol sponges which were left in place overnight. The following day an abdominal hysterectomy was performed with a wide dissection of the parametrium and the broad ligaments, an iodoform drain being placed well within the wound. These procedures applied to the certainly operable period, the operation being followed promptly by radium.

At present, however, because of the favorable results of radium and deep x-ray therapy in inoperable cases and the indications of its value in all stages of carcinoma of the cervix, we are not using surgery in any of these cases. We are, however, holding our final judgment in abeyance until a sufficient time shall have elapsed for a definite comparison of the three and five year results of radiation in early cases to be made.

Our total series of cases of carcinoma of the uterus includes 362 cases among which 107 were cases of cancer of the fundus. The end-results among the cases of carcinoma of the cervix as they stand to date are given in the following table:

Number of cases cancer of cervix	255	
Not treated	22	
Probable carcinoma, diagnosis uncertain	10	
Cases available for study of operability, mortality, etc.	223	
Radical operation	60	
Palliative operation	109	
No operation — (radium and x-ray only)	54	
Deaths—radical operations	4	
Radical operation mortality		6.6%
Cases heard from	79	
Radical operations, heard from	24	
Palliative operations plus radium and x-ray, heard from	25	
No operations (radium and x-ray only)	30	
Number of cases surviving (5 years) heard from	8	
Number of cases surviving (10 years) heard from	3	
Percentage of 5 year survivals (all operations)		16.3%
Percentage of 3 year survivals		37.5%

The inadequacy of the survival percentages in the above table should be noted as in some of the cases heard from the five-year period has not elapsed. These survival percentages are presented therefore as the figures of the moment—an indication rather than an established fact.

Summary

Our judgment at this date as to the treatment of benign and malignant tumors of the uterus may be summarized as follows:

I. *Benign Tumors*—(a) Within the child bearing period, partial or pan-hysterectomy or myomectomy.

(b) In association with pregnancy, if the operation cannot be delayed, operation under complete anociation.

(c) At the period of, or after the menopause, radium or radium plus deep x-ray therapy unless the tumor is submucosal or subperitoneal.

II. *Borderline Cases*—The same treatment as that used when diagnosis of cancer of the fundus is certain.

III. *Cancer of the Fundus*—(a) In all operable cases—vaginal hysterectomy.

(b) In inoperable cases, radium alone or in combination with deep x-ray therapy.

IV. *Cancer of the Cervix*—Radium and deep x-ray therapy, with reservation of final judgment as to the abandonment of surgery.

V. *General Note*—In every case, the patient should be strictly individualized.

THE GENERAL ROLE OF X-RAYS IN THE TREATMENT OF BENIGN AND MALIGNANT TUMORS OF THE UTERUS*

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Our present knowledge of the physical laws in accordance with which the x-rays operate demonstrates that until recently but few deeply situated malignant lesions ever received a therapeutic dose. The successful clinical application of x-rays and radium rays depends upon a thorough understanding of the physical laws governing the action of these two valuable agents. The rays emitted from radium and x-ray obey the same laws of physics. For all practical purposes therefore the rays may be considered as identical.

About two years ago we began the investigation of deep x-ray therapy. In collaboration with our department of biophysics a special study of the intensities of x-rays was made, and our findings were compared with results already published. We were disappointed to find that the very great dosages anticipated were not obtainable under practical working conditions. As a result of our investigations we came to the conclusion that in most cases a therapeutic dose of radiation could not be safely administered to the most deeply situated malignant tumors by x-ray alone.

The favorable results of radium therapy and this knowledge of the limitations of the x-ray led us to adopt a plan for the establishment of "a radiation therapeutic dose" by means of the combination of these two similar agents. This is accomplished by individualizing the patient by drawing on paper an exact cross section of the body at the site of the lesion, and indicating thereon the involved areas and organs. Our own charts which show the rate of absorption of x-rays or equal intensity curves are superimposed on the cross section at suitable portals of entry so that the sum of the intensities of the x-rays which reach any point from the various portals may be calculated. A standard chart showing the sphere of radium activity is then superimposed at the point of radium application and the combined radiation from the x-rays and the radium can be computed for any point in the cross section. By this method we are able to estimate and tabulate the exact dosage of radiation administered in any case.

*Read before the Inter-State Assembly of the Tri-State District Medical Association, Des Moines, October 29, 30, 31 and November 1, 1923.

Biological Reactions—The biological effects of radium and of the x-rays are practically identical. Microscopical examination of tissues after destructive or therapeutic doses of either shows no distinguishable difference.

In general, the different types of cells apparently react differently to radiation and under similar conditions cells of the same morphology may vary in their susceptibility. As a rule neoplastic cells which are undergoing rapid mitosis are most susceptible while those which are most nearly like those of normal tissue are most resistant. After a destructive or therapeutic dose of radiation the cells undergo a process of nuclear hyperchromatization, fragmentation and vacuolization which leads to eventual necrosis and repair by absorption and fibrosis.

Among the normal tissues the endothelial cells of the lymphatics and blood-vessels are most susceptible to radiation. The swelling and necrosis of these cells produces an obliteration of the vessel channels which in turn cuts off the nutrition of the surrounding tissues. We believe that this result explains in part the favorable consequences of radiation. It is possible, however, that this effect is secondary and that the primary therapeutic action is directly upon the tumor cells.

Since it is found that cells vary in their reactions to radiation it is necessary to consider separately the treatment of benign and malignant growths. It is obvious that the basis for the successful radiation treatment of tumors depends upon accuracy of diagnosis. In this symposium, therefore, we shall consider separately the application of radiation to fibromyomata and to carcinoma.

Fibromyomata—Chronic metritis and fibromyomata react very favorably to proper administration of radiation in properly selected cases. Until recently the results of radiation in these cases have varied considerably but since we now have accurate methods of measurement and a basis for the selection of cases we may anticipate more uniformity of results.

The selection of cases depends upon certain well defined conditions:

1. *The Age of the Patient*—No woman under forty years of age should be subjected to radiation, as it tends to advance the menopause, although in certain cases there may be justifiable reasons for disregarding this precaution.

2. *Complications*—Certain coincident conditions may require special consideration:

(a) *Inflammation*—Intensive radiation in the presence of chronic or acute inflammations or any evidence of inflammation within the pelvis is hazardous.

(b) *Evidence of degeneration*—Irregularity of the menses or the character of the bleeding may indicate a malignant or inflammatory degeneration of the uterus or of the tumor which would require a different method of treatment.

3. *Size and Form*—A tumor of any size may be reduced by radiation but those tumors that extend as high as the umbilicus may regress too slowly to relieve the rather distressing pressure symptoms. Pedunculated and sub-serous fibroids obviously demand surgical treatment.

4. *Pregnancy* contraindicates radiation, as abortion will probably be induced and it has been demonstrated that radiation may produce a monstrosity of the foetus.

After eliminating the groups of cases indicated above as unsuitable for radiation there remain about 30 per cent of all cases of fibromyomata that may be safely treated by radiation. Relief of symptoms may be anticipated in 99 per cent of properly selected cases and the percentage of complete cures averages about 87 per cent.

Mode of Action—There have been two theories regarding the action of radiation on fibroid tumors of the uterus—some believing that the primary action is upon the ovaries and others that the tumor cells themselves are immediately affected. The former group attempted to radiate only the ovaries while the latter directed the radiation to the tumor. Neither group has taken into consideration the endometrium. As a matter of fact, it is physically impossible to radiate either the ovaries or the uterus alone. We feel that favorable reactions are due to three causes—first, the inhibition or destruction of the graafian follicles and fibrosis of the interstitial tissue of the ovaries; second, direct action upon the tumor cells; and third, changes of the endometrium by the action of the radiation upon the end arteries and lymphatics—the uterine membrane. So far as I can determine this last cited point has usually been overlooked.

1. The action upon the *ovaries* causes complete amenorrhea or reduces the frequency and severity of hemorrhage. The initial effect frequently is stimulation and the menstruation following radiation may be more severe than at any previous time. If the graafian follicles are not all destroyed normal menstruation may reappear after varying periods of amenorrhea and normal pregnancy may occur. In almost 99 per cent of the cases menorrhagia will eventually be favorably influenced and controlled.

2. The tumor cells undergo a slow necrosis and absorption which may be due either to direct action upon the cells or to the destruction of nutrition by a blocking of the blood and lymph

vessels. The end result is slow regression of the tumor which begins almost at once and extends over a period of from three to eight months. Obviously, the period of regression is in direct relation to the size of the tumor.

The immediate effect of x-ray radiation is a short period of nausea and malaise, especially if the dose is large. The skin may show erythema. Large doses may cause a diarrhea lasting for a few days.

The Choice between Radium and the X-rays in the treatment of fibroid tumors may depend upon the availability of either or the economic status of the patient. In properly selected cases favorable results may be anticipated from each agent. Either x-ray or radium will eventually control hemorrhage, but the effect of radium is more quickly manifested in cases of severe bleeding because of its immediate action upon the endometrium; therefore, when the control of hemorrhage is urgently indicated, radium is the agent of choice. Although, as we have stated, the biological effects of radium and of x-ray are practically identical, x-ray will produce a more rapid regression of tumors and for this reason x-ray in comparatively large doses is to be preferred for the treatment of the larger tumors.

The economic status of patients must be considered in the choice of treatment, for radium therapy requires hospitalization, anesthetic and intrauterine manipulation, while x-ray may be administered in divided doses without hospitalization. The menopause is brought about more slowly by x-ray than by radium so that by the use of the former the patient may become adjusted to the new condition very gradually. In skilled hands the danger from x-ray therapy is negligible.

Carcinoma of the Fundus

As yet there is no sufficient basis for the substitution of radiation for surgery in the treatment of carcinoma of the fundus, for although to date there are no reliable statistics upon the results of treatment of corpus carcinoma by radiation alone, it is highly improbable that radiologists can improve upon the results obtained by surgeons. However, from the standpoint of physics it is as easy to administer a dose of radiation to the fundus as to the cervix.

Carcinoma of the Cervix

In considering the results of treatment of carcinoma of the cervix it should be borne in mind that, prior to the last three or four years, in all probability no such lesion received what we now consider to be a therapeutic dose of x-ray radiation. This is indicated by the fact that no better results were obtained by the combination of surgery and x-ray therapy than by operation alone. During the last ten years, however, the favorable results obtained by radium has limited the operation for carcinoma of the cervix to early cases. But the favorable results of radium therapy or operation depend upon the extent of the malignant involvement, for although a therapeutic dose of radium radiation can be administered to areas beyond the reach of the knife or cautery, yet there remains a large group of cases in which the involvement is beyond the reach of either. Moreover, in any given case it is impossible to determine the exact extent of the carcinomatous involvement. These limitations of surgery and of radium demand the addition of the recently developed deep x-ray therapy in the treatment of carcinoma of the cervix.

We believe that the proper treatment of malignant disease must include surgery, radium and x-ray in such combination as is indicated by the individual case. In the treatment of carcinoma of the cervix, at present we believe that the combination of radium and x-ray radiation is the therapeutic method of choice. The uterus is the easiest organ to radiate, being centrally located in the pelvis so that an inclusive irradiation can be secured by the local application of radium in the cervix and by the application of x-ray through a number of portals about the body. By this combination we can secure a homogeneous radiation of the entire pelvis and its gland bearing areas with a large dose at the site of the primary lesion.

Not sufficient time has elapsed to permit us to draw conclusions in regard to the end results of deep x-ray therapy as applied to carcinoma of the cervix. Our own experience thus far leads us to believe that the patients treated by the combination of deep x-ray and radium therapy have been benefited more than those treated by surgery alone or by surgery and radium. Thus far we have refused no case. It is obvious, however, that in very late cases but little or no benefit may be expected. In the cases thus far treated we have observed an immediate cessation of hemorrhage and of pain and a more rapid healing of local lesions, an early softening and disappearance of induration and a more rapid convalescence than by any other method. The improvement has been most striking in the inoperable cases with rather extensive involvement.

The cases which have received least benefit have been recurrences following other forms of treatment. Curettement or biopsy for diagnosis should be immediately followed by radiation.

The contraindications to radiation in cases of

carcinoma of the cervix are: (1) the presence of tubal infections; (2) the presence of far advanced disease; (3) a poor general physical condition, though these cases may be made radiable by blood transfusions. Secondary anemia or loss of blood is not essentially a contraindication as radiation shortens the coagulation time of blood and transfusion is a simple surgical procedure.

The sequelæ of radiation as described are not severe if the entire treatment is given in divided doses.

CONCLUSION

1. In properly selected cases of benign tumors of the uterus—i. e., women over forty years of age without excessive bleeding, evidence of degeneration or inflammation—deep x-ray therapy alone is the method of choice. When menorrhagia must be checked at once, radium is preferred. All other cases are surgical.
2. In the treatment of carcinoma of the fundus, there is no present indication that radiation is to be preferred to surgery.
3. In the treatment of carcinoma of the cervix the combination of radium and deep x-ray therapy is the method of choice.
4. In general, in the treatment of malignant or of benign tumors, surgery, the x-rays and radium, should be used in such combination as is indicated by the conditions present in the individual cases.

THE ROLE OF RADIUM IN THE TREATMENT OF BENIGN AND MALIGNANT TUMORS OF THE UTERUS

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Considerable confusion still exists in the minds of many physicians as to the choice of treatment for uterine tumors, both malignant and benign. Should radiation or surgery be used, or both? The general practitioner generally sees the case first. If he refers the patient to a radium therapist who is convinced that his is the method of greatest value, she will probably be treated with radium. If he refers her to a surgeon who believes that surgery is the method of choice she will probably be operated upon. It follows that if the treatment—whether surgery or radiation, is not successful, a goodly share of the responsibility must be borne by the family physician. It is therefore urgent that every effort be made to formulate certain definite indications for the choice of the method to be used in the treatment of a given pathological condition of the uterus. One of the best ways to reach a definite conclusion is the study of properly collected and properly analyzed statistics of the results of each method of treatment.

CARCINOMA OF THE CERVIX

In considering the relative values of surgery and of radiation in the treatment of carcinoma of the cervix, it is essential to know first what has been accomplished by surgery in the past, and second what is now being accomplished with radium. If radium is to supplant surgery it must show that it gives better results.

An analysis of the results of the surgical treatment of cervical cancer shows that out of each 100 cases which consult a surgeon the operability will not exceed 40 per cent. Among these forty cases an operative mortality of 10 per cent is not excessive. Among the remaining thirty-six cases the average number of reported cures—25 per cent—shows that nine cases will be cured. That is, the surgeon may expect 9 per cent of final cures from among all cases of carcinoma of the cervix that consult him. (Table I.) It follows that the radium therapist must be able to cure more than nine cases out of a hundred before he can take carcinoma of the cervix out of the field of surgery.

Our own experience thus far has been quite encouraging. At first we treated only the inoperable cases with radium. Then gradually we included the borderline cases and at the present time in the Cleveland Clinic all cases of carcinoma of the cervix are being treated exclusively with radium and x-ray. The cases which have been subjected to radium therapy during the past four years can be roughly grouped as follows:

1. Inoperable cases treated with radium alone.
2. Cases subjected to treatment with both surgery and radium.
3. Cases treated with radium and deep x-ray therapy alone.

We have adopted the following arbitrary classification of our cases:

Class 1. Cases in which the disease is limited to the cervix.

Class 2. Cases in which there is either an extension on the vaginal wall or a thickening of the broad ligament.

Class 3. Cases in which there is both an involvement of vaginal wall and a thickening of the broad ligament.

Class 4. Long standing cases in which there is an extensive involvement in the pelvis.

In the last cited group no attempt is made to cure, but the bleeding or discharge may be relieved by small doses of radium.

Among the inoperable cases treated with ra-

dium alone, nine cases have been under treatment for more than three years. Among these, four cases—45 per cent—are living and apparently well. (Table II.)

In the second group—those treated by surgery and radium combined—very bad results were secured and this combined treatment has been discarded. (Table III.)

In the third group, in the treatment of which both radium and deep x-ray therapy have been used, the best primary results have been secured, although since this combined method of treatment has been in use for only one year, we have no available statistics upon which to base a discussion of final results—three or five year "cures".

Methods of Treatment—For the first treatment nitrous-oxid anesthesia is given to all cases. The method of application of radium is individualized for it is impossible to treat all cases alike. I think, however, that needles should be inserted whenever possible because by their use a more homogeneous radiation is secured.

It has been our custom to place 75 mg. in the cervix screened with ½ mm. silver and 1 mm. of brass, 50 mg. against the cervix and 75 mg. (in 9 needles) inserted at various points in the cervix, the treatment being continued for periods varying from twelve to sixteen hours. (Figure 1.) The vagina is packed tightly with gauze and a catheter is placed in the bladder to prevent distension and a resultant too close approximation to the radium which might cause a fistula. In from three to four weeks the patient is treated again by placing 125 mg. screened with 1 mm. of brass against the cervix for from twelve to fifteen hours. Generally this can be done without anesthesia with the patient in the knee chest position. Thus, each case receives a total dosage varying from 4000 to 4800 mg. hours. After the second treatment the patient is discharged but reports for observation three months later.

We have not seen a single fistula, either rectal or vesical, in the cases treated with radiation alone. They have occurred only in the cases treated with both surgery and radium. Proctitis with a slight stricture has occurred in only one case.

An acute hydronephrosis was seen in one case four months after the treatment was begun, but in this case there was a recurrence of the growth which involved the lower end of the ureter.

It should be borne in mind in discussing the relative merits of surgery and of radiation in the treatment of carcinoma of the cervix that the basis of comparison must be the morbidity and the end-results – three and five year "cures"—as immediate mortality in these cases pertains only to surgery. No immediate mortality can be attributed to radium therapy. We are satisfied with the value of radium in inoperable cases of carcinoma of the cervix; we believe that accumulating evidence will give equally positive evidence of its value in early cases, as compared with surgery.

Carcinoma of the Fundus

On account of the excellent results of the surgical treatment of carcinoma of the fundus, up to the present time I have not advocated radiation in these cases. During the past year, however, in three cases I have seen a recurrence in the upper end of the vagina six months after a complete hysterectomy and all three of these patients died less than one year after operation. This fact suggests that further investigation is demanded—perhaps a trial of radiation in cases of carcinoma of the fundus, in which there may be some contra-indication to operation, such as old age, or cardiovascular disease, or objection to operation on the part of the patient.

Benign Tumors of the Uterus

To my mind it is more difficult to decide whether a fibroid tumor should be radiated or treated surgically than it is to determine the proper procedure in a case of cancer of the cervix, and unless scrupulous care is taken in the selection of cases for radiation a great many failures will result from the use of radium and x-ray therapy.

In the majority of cases surgical treatment has yielded good results—the mortality is low, the convalescence is usually quite rapid. It becomes necessary to consider very carefully whether or not any cases can be more beneficially treated by radiation. Are there any cases in which radiation is definitely contraindicated? Are there others in which it is as definitely preferred?

In our judgment radiation is definitely contraindicated under the following conditions which are related to the size of the tumor and its location, the age of the patient and the presence of pain or discharge.

1. *Size of the Tumor and its Location*—Radium is contraindicated in any case in which the tumor is palpable above the symphysis. A dose of radium large enough to reduce the size of this tumor would cause destructive local effects so that radium would have to be supplemented by x-ray therapy. I believe that in such a case the patient will be better off without radiation. If a fibroid is sub-peritoneal or sub-mucous, or if it is pedunculated, radiation is contraindicated because it cannot produce a cure. Accuracy of diagnosis, therefore, is of the utmost importance.

2. *Age of the Patient*—In a woman in the child-bearing age a fibroid tumor should not be treated with radium or x-ray unless there is a definite contraindication to pregnancy. In these cases myomectomy is the treatment of choice.

3. *The Presence of Pain*—In the great majority of cases pelvic pain is a contraindication to the use of radium. The pain may be due to an old salpingitis or hydrosalpinx which often cannot be felt even by the most thorough examination. In these cases heavy radiation undoubtedly makes the pain worse and it becomes necessary finally to resort to surgery. A pedunculated submucous fibroid in the fundus gives rise to pain. Such a tumor cannot be successfully radiated both because it is impossible to place a sufficient amount of radium adjacent to it and because it may become deprived of its blood supply and remain in the uterus as a foreign body with consequent discharge and continued pain so that eventually surgery will be required. If pain is due to pressure, then obviously the fibroid is too large to be treated by radiation.

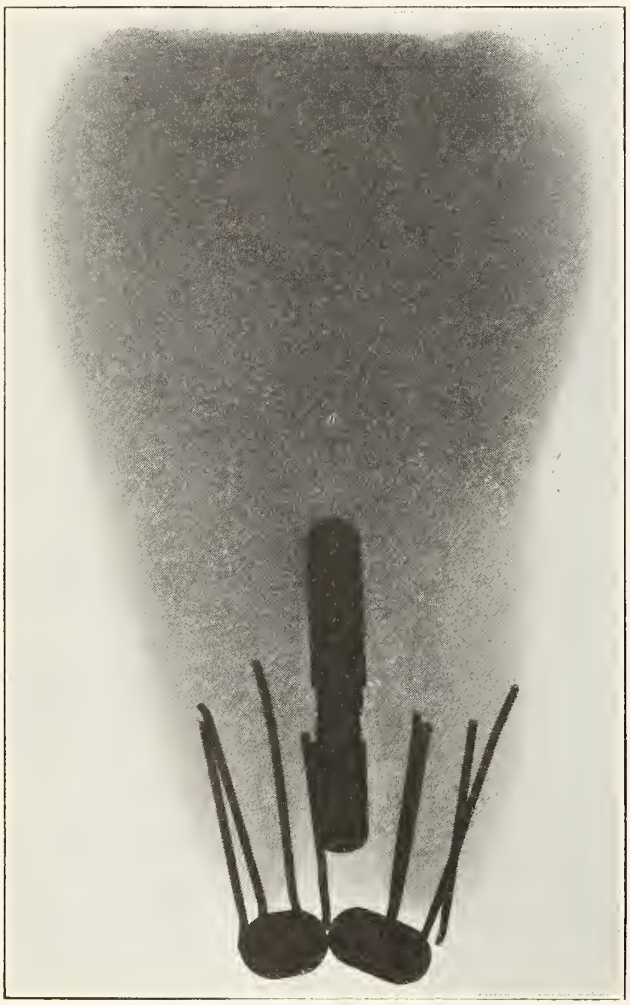

Figure 1. Technique of Radium Application in Carcinoma of the Cervix.

In the following groups of cases radium is of value:

1. *Menorrhagia* at any age. Cases of menorrhagia in the past have been curetted—often without relief while radiation almost uniformly gives good results. The dose depends on the age of the patient. Excellent results are obtained from the use of radium in the large group of cases in which at the menopause there is a slight enlargement of the uterus and excessive bleeding. I believe that in these cases radium therapy surpasses surgery on account of the absence of mortality and morbidity and the ease with which it can be applied. Also in these cases radium is preferable to x-rays because its chief action is on the endometrium and not on the ovaries.

2. *Fibroid tumors of moderate size* without bleeding or other complications are amenable to radiation.

3. *Fibroid tumors* in the treatment of which surgery is contraindicated by such complications as general invalidism, heart disease, pulmonary disease or diabetes, should be radiated. These cases can be relieved and the growth can be

TABLE III

Cases of Carcinoma of Cervix Treated with Both Surgery and Radium

No.	Age	Location	Operation	Comp.	Duration of Life
1	28	Cervix	P. C. and T. H.	V. V. Fist.	11 mo.
2	31	Cervix	P. H.	None	15 mo.
3	29	Cervix	P. C. and T. H.	Faecal Fist. Abd.	8 mo.
4	60	Cervix	T. H.	None	4 mo. (living)
5	57	Uterus Vagina	Supra. vag. H.	None	13 mo.
6	67	Uterus	Attempted V. H.	V. V. Fist.	4 mo.
					Average life—10½ mo.

*P. C. signifies Percy Cautery; T. H.—Total Hysterectomy; and V. H.—Vaginal Hysterectomy.

checked so that it does not cause a great deal of discomfort as long as the systemic disease allows the patient to live. It is possible, however, that the use of iletin may make it possible to operate safely upon diabetic patients with better results than can be obtained with radium.

Conclusions

1. In the Cleveland Clinic at the present time all cases of carcinoma of the cervix are being treated with a combination radium and deep x-ray therapy.

2. Carcinoma of the fundus should be treated by surgery.

3. Fibroids associated with pain in the pelvis or with discharge from the uterus, the cervix being normal, should not be radiated.

4. Radium is the treatment of choice for menorrhagia at any age; it is especially indicated in cases of menorrhagia at the menopause with slight enlargement of the uterus.

TABLE I

End Results of the Surgical Treatment of Carcinoma of the Cervix in Relation to the Cases which Present Themselves for Operation and Treatment

Consecutive cases presenting themselves for examination	100
Operability	40
Operative mortality	4
Surviving cases	36
Cures—5 years	9

TABLE II

Cases of Carcinoma of Cervix Treated with Radium Alone for More than Three Years

	Age	Dur. Symp.	Type	Diag.	Living	Dead
Mrs. L.	35	6 mo.	II	Sq. Ca.	43 mo.	
Mrs. McG.	45	12 mo.	III	Sq. Ca.		16 mo.
Mrs. McS.	63	6 mo.	II	Sq. Ca.	41 mo.	
Mrs. K.	38		III	Sq. Ca.		n.h.
Mrs. S.	42	12 mo.	II	Sq. Ca.	37 mo.	
Mrs. F.	45	4 mo.	III	Sq. Ca.		8 mo.
Mrs. R.	50	12 mo.	II	Sq. Ca.	36 mo.	
Mrs. R.	42	2 mo.	II	Sq. Ca.		7 mo.
Mrs. M.	45	6 mo.	III	Sq. Ca.		8 mo.

CANCER IN EARLY LIFE

According to the Statistical Bulletin, it is shown that in a study of 90,175 deaths from cancer among Metropolitan industrial policyholders in a period of twelve years, it was discovered that 1,910 were those of persons under twenty-five years. The type of malignant growth known as sarcoma was responsible for most of these deaths of young people. The organs or parts most frequently attacked by malignant growths in early life were the brains, the bones, the kidneys and suprarenals, the lungs and pleura.

INCIPIENT CATARACT*

Gordon F. Harkness, M.S., M.D., F.A.C.S., Davenport

The results of the non-operative treatment of incipient cataract are purely a matter of clinical observation confirmed subjectively by the patient. If successful, it offers a great boon to the thousands so afflicted. Personally the results have been most disappointing. With a desire to satisfy myself as to whether I was prescribing needlessly and without benefit to my patients I undertook a rather careful resume of the literature, and also gathered the opinions from the chairs of ophthalmology of a number of the class A medical schools of this country. To those men who were so kind to write me on the subject I wish to express my sincere appreciation for their most valuable letters, and for the assistance rendered by Dr. J. E. Rock, associated with me.

There are probably several factors that may be responsible for the contradictory opinions of various observers. A more careful classification of the types of cataracts treated, together with a limitation of treatment to those in the first stage of incipiency with little loss of vision might offer a better prognosis.

The slit lamp in studying lenticular changes may prove to be a diagnostic aid by indicating treatment before lens changes are manifest by any appreciable loss of vision or by the ophthalmoscope.

Without entering into a scientific discussion of the pathology of senile cataract I believe we may safely consider it a degenerative process. The cortical changes are first not so much in the lens fibers themselves but a change in the interfibrillar spaces. Actual fissures occur which are filled with fluid. Later, the changes take place in the lens fibers.

Cataracts may progress rapidly to a certain point, then apparently be retarded or enter a stationary period and finally undergo reabsorption, all without any treatment. This important fact seems to have been overlooked by some observers when drawing conclusions in their writings. Complete spontaneous clearing of the lenses without treatment after the formation of opacities is reported in 147 cases by 51 observers. (Encyl. Ophthal. No. 1503.)

The changes in the lens are not inflammatory, there being no blood-vessels, yet it is well known that lenses are affected by nutritional disturb-

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ances in surrounding tissues which may be inflammatory in nature.

Lens changes have long been known to be associated with conditions affecting metabolism, improvement taking place as the general condition of the patient improves. The disappearance of lenticular striations in diabetes after the patient follows dietary rules have frequently been observed.

Since the recognition of foci of infection and systemic absorption therefrom, retardation of progress and even improvement in lenticular changes has been noted, following the removal of the infecting foci.

Our present knowledge of the nutrition of the lens is quite meager. Probably through a modified endomosis its protoplasm possesses a special affinity for certain nutritive elements supplied from the ciliary body and ciliary processes.

We know further, that lens material is organ, not species specific and what the future will offer, aided by the biological chemist in the way of lens antigens and so forth we can only conjecture.

Fuchs states that while successes have been reported there has been no convincing proof that any of the remedies suggested are effective in any but a very small minority of cases.

It is unfortunate perhaps that writers do not have the same inclination to report their failures as they do what they consider to be their successes. Hence a bibliography of this subject finds few articles dealing with the failure of any remedies.

Badal revived the use of potassium iodide and reported gratifying results which have received substantiation at the hands of other men. H. W. Woodruff (Encyl. Ophthal. No. 1450) states that under hydriodic acid and iodonucleid treatment, he had seen no cases of incipient cataract where treatment had been followed for a long time, in which the vision had grown worse. Meyer-Steinegg[6] in 1914 reported improvement in forty-three cases out of fifty-four under iodine treatment and in twenty-three the vision returned almost to normal.

H. Smith[5] in 1912 announced improvement in vision in eight cases by the use of subconjunctival injections of cyanide of mercury.

J. H. Burleson[16] reported on fifty cases using the same treatment in which all improved temporarily, but that after three months vision failed, and the cataracts progressed except in those cases where definite foci of infection had been discovered and removed.

W. J. Blackburn[10] reported good results in 85 per cent of a series of 176 cases, using cyanide of mercury on some, and prolonged potassium acetate medication together with local iodine medication.

A. S. and L. D. Green[13] reported 58 per cent improved and 25 per cent arrested by the use of mercury cyanide injections.

When it comes to one of the newer remedies proposed, Cohen and Levin[12] reported 87 per cent and Franklin and Cordes[15] 84.3 per cent improved by the use of radium.

J. L. Van Zant[18] calls attention to the frequency of cataract after thyroidectomy, and reports his own personal experience and improvement under endocrine therapy, following symptoms of endocrine imbalance.

From an interest aroused by the effect of milk injections as a general defense measure in infections and inflammations of the eye, we were led to try them in incipient cataract. Boiled milk was used in a few cases and given up, due to an inability to standardize the milk obtainable. The chart to be presented is of a small series of sixteen cases in which Lactogen (Abbott) was used. Each patient with one exception received five injections. I will speak of the results obtained later.

Space does not permit extended comment on the many remedies suggested and successes reported with them, suffice to say that gratifying results have been reported with all of these in the tabulated list. A multiplicity of remedies recommended for any one condition generally means that none of them measure up to the mark.

(See tables pages 12 and 13)

Turning to the opinions of some of our eminent colleagues.

Robert G. Reese, Cornell University
Local Measures—

Does not think that anything is of much benefit.

Walter R. Parker, University of Michigan
Dionin Glycerine—

Unable to tell whether cataracts have been influenced by treatment. Thinks that since lens is ectodermic in origin cell changes take place due to chronic diseases, assuming different refractive indices and may appear as opacities. This accounting for various changes.

G. E. deSchweinitz, University of Pennsylvania
Dionin, NaI Sol., Refractive Errors—

Many varieties and behavior varies greatly. Thinks stimulation of anterior circulation as by dionin indirectly conserves nutrition of lens and possibly retards lens changes. Prefers NaI sol. locally. Correction of refractive errors important. Internally NaI and Syr. Hydriodic acid have favorable alterative effect particularly with choroidal disturbances accompanying.

Allen Greenwood, Tuffs College
Dionin—
Results gratifying except in nuclear type.
Vision improved and held for a long time in some cases. Importance of high standard of body metabolism.

Eugene M. Blake, Yale University
Dionin, KI Sol.—
Retardation and even improvement by increasing blood supply to anterior segment of globe.
Hot applications.
General treatment—alimentary canal, focal infections, and blood-pressure.
Oxycyanide of Hg. and NaCl. sol. subconjunctivally of use but distasteful to patient.

Arthur N. Alling, Yale University
Does not believe it possible to have the slightest effect in retarding the progress of incipient cataract.

M. Feingold, Tulane University
Has not found anything to be of any help.

John M. Wheeler, Bellevue Hospital Medical College
Not convinced as to the value of any measures.

Jas. C. Dowling, Howard University
Dionia—
Under routine treatment no immature cases during the past two years have progressed to operative stage.
Has great faith in dionin.
High frequency used and believes beneficial.
NaI Internally. Mag. sulph. twice weekly.
Maintenance of general body nutrition.
Hot compresses.

W. T. Davis, Geo. Washington University
Dionin—
Dionin at times has apparently caused some clearing.
Importance of medical survey, septic foci and high arterial tension if removed may have favorable effect.

Wm. R. Murray, U. I. of Minnesota
Dionin—
Careful physical examinations and removal of chronic infections. This together with dionin may retard but no evidence of having arrested other development of or having cleared an opacity.

Melville Black, University of Colorado
Dionia—
Feels that dionin is only remedy that has given any results as far as it is possible to judge and these have been favorable.

W. H. Wilmer, Georgetown University
Dionia, Hot Applications—
Has used all suggested remedies except cytolytic serum.
No treatment encouraging.
Least discouraging method—removal of toxemia or foci infection, iodine internally, dionin and heat locally.

W. H. Luedde, St. Louis University
General treatment better than local.
Elimination of focal infections, correction of dietary indiscretions has given excellent results in considerable majority of cases.

Don M. Campbell, Detroit Coll. of Medicine
Local treatment useless.
Treat causes of contributing factors as uveitis, etc.
Eradicate foci of infection.
Visual improvement due to improvement of health of other ocular tissues.

James B. Stanford, University of Tennessee
Not convinced that any of the measures recommended were successful.

Adolph Pfingst, Louisville Med. Coll.
Not convinced that any treatment has any bearing on progress of uncomplicated senile cataract.

Brown Pusey, Northwestern University
Has seen a few cases where the cleaning up of infections seemed to retard or stop the progress of opacity formation.

Edward F. Parker, South Carolina State Med. Coll.
Dionin—
Knows of nothing that definitely retards the progress of cataract.
Uses dionin as something harmless and perhaps useful.

Hedges Compton, University of Virginia
Dionin Hot Applications—
Has not used anything that has had a direct appreciable effect. Retardation occurs with and without treatment.
Study patient's nutrition.

W. F. Boiler, University of Iowa
No real success with any treatment.
25 cases—oxycyanide Hg. injections. No results.
50 cases NaI drops plus Syr. hydriodic acid internally. Practically no results.
6 cases radium treatment—one case apparently benefited.

H. Gifford, University of Nebraska
Dionin—
Difficult to say what course any cataract is going to take. Knows of nothing better than dionin. Thinks cyanide Hg. injections may check or even improve condition but loathe to urge it.
Not sure whether anything does any good.

L. B. Bushman, Creighton University
Dionin, NaI—
Excellent results by removing foci of infection.
Correction of refraction.
Promoting good physical condition.
Eye drops dionin and NaI.

W. E. Shahan, Washington University
No treatment successful except where general treatment is indicated as in diabetes.

REMEDIES AND MEASURES SUGGESTED

LOCAL	GENERAL
MASSAGE	Turkish baths
CORRECTION OF REFRACTION	Potass. iodide
HOT APPLICATION	Sodium iodide
EYE DROPS	Hyd. biniodide
DIONIN	Iodoglidin
NaI	Alkalinization of patient
KI	Serological treatment
FIBROLYSIN	lentocalin
IODOLYSIN	lens albumin
NASCENT CALCIUM IODIDE	30% NaI or 35% NaCl lenticular protein
SUBCONJUNCTIVAL INJECTIONS	High frequency current
CYANIDE OF MERCURY	Potass. acetate or citrate
BICHLORIDE OF MERCURY	Sodium acetate or citrate
NaI	Endocrine therapy
KI	Iodonucleid
SODIUM CHLORIDE	Hydriodic acid
DIONIN	Autogenous vaccines
SODIUM ACETATE	Benzoate of Hg intramuscularly
RADIUM	Pilocarpine
GALVANISM (with NaI or KI)	Sodium thiocynate
IODOSOL OR IODOVASOGEN	
TINC. CINERARIA MARTIMA	
RESORCIN OINTMENT	

No.	Age	Date	NOTES	VISION WITH CORRECTION	Date	VISION WITH CORRECTION	REMARKS
1.	53	12- 1-23	Visual change Y mo. Media clear No vitreous opacities Sclerosis of vessels Cortical lenticular opacity O. S.	RV 17/16 LV 17/16	2-12-24	RV 17/16 LV 17/16	Has high blood-pressure. Says he sees better. Test does not confirm.
2.	70	12-10-23	Cortical opacities Discs seen and show some atrophy Floating opacities O. S.	RV 17/100 LV 17/200	4- 9-24	RV 17/100 LV 17/70	Says vision is improved.
3.	65	12- 1-23	Faint striations seen in lenses	RV 17/25-5 LV 17/25	12-29-23	RV 17/16-7 LV 17/16-7	No change seen in lenses. Patient reports vision improved.

4.	59	10- 1-23	Fine cortical opacities in O. S.	RV 17/16 LV 17/33	11-3- 23	RV 17/16 LV 17/25	11-3 opacities seem fainter. RV 17/16. LV 17/25. Patient reports improvement.
5.	59	10- 6-23	O. D. floating opacities Cortical opacities O. S. haziness of lens Mouth—teeth require extraction	RV 17/100 LV 17/25	11- 3-23	RV 17/100 LV 17/16	Lens O. S. possibly a trifle clearer. KI drops were used.
6.	53	10-16-23	Cortical and nuclear opacities	RV 17/70 LV f. 30″	4- 7-24	RV 17/100	O. S. always amblyopic. Only two injections lactigen. Reaction severe. Said he was better after NaI drops, not confirmed.
7.	51	10-19-23	Lens opacities near anterior capsule, subcapsular	RV 17/100 LV 17/25	4- 8-24	LV 17/70	Cataracts progressing.
8.	77	9-17-23	Loss of vision out of proportion to lens opacities Floating opacities Choroidal disturbance O. D. posterior cortical O. S. diffuse haziness	RV 17/100 LV 17/50	4-23-24	RV 17/50 LV 17/50	Vision in December RV 17/40. LV 17/33.
9.	61	11- 4-23	Posterior cortical opacities Floating opacities	RV 17/50 LV 17/70	4- 6-24	RV 17/200 LV f. 6 ft.	Also used NaI drops. Progress became rapid during March.
10.	70	11- 6-23	Peripheral lenticular opacities	RV 17/16 LV 17/25	4-14-24	RV 17/16 LV 17/25	No changes noted except slight increase in haze.
11.	77	11- 7-23	Lenticular haziness Sclerosis of vessels	RV 17/16 LV 17/25	1-28-24	RV 17/16 LV 17/25	Myopia developed last two years.
12.	69	11-1- 23	O. D. posterior cortical O. S. general haziness	RV 17/33 LV 17/40	1-25-24	RV 17/40 LV 17/100	Slow progress has continued.
13.	83	11-9- 23	Cortical Family history, cataracts	RV 17/33-3 LV 17/33	4- 8-24	RV 17/20-4 LV 17/20-5	Improvement. No lens improvement seen.
14.	71	11-16-23	Cortical	RV 17/33 LV 17/33	12-11-23	RV 17/20 LV 17/25-1	Not seen but reported vision has not shown any loss.
15.	66	11-16-23	Fine cortical opacities Post nuclear opacities	RV 17/16 LV 17/20	4- 5-24	RV 17/16 LV 17/25	2-1-24 vision. RV 17/16. LV 17/16. NaI drops used.
16.	69	11-19-23	Cortical	RV 17/33 LV 17/20	3-27-24	RV 17/16 LV 17/16	

Improvement in reading letters 8
Stationary 3
Continued progression 3
Improved patients' statement not confirmed by test 2

Geo. H. Price, Vanderbilt School of Medicine
Dionin—
Believes it possible in some to retard, some improve, and some restore to normal vision. Results quite satisfactory. Remarkable in some. Dionin locally, KI and bichloride of Hg internally.

George S. Derby, Harvard University
No remedy successful. Only those secondary to other eye diseases are influences. In these cases sometimes improvement in general health may cause certain amount of clearing of lens opacities.

Arnold Knapp, Columbia University
Knows of nothing that will retard. Progress so irregular that it is difficult to ascribe to treatment carried out any apparent retardation.

J. F. Dickson, University of Oregon
Personally has never found anything that retarded progress of incipient cataract. Thinks reports from the use of radium offer the most promising results.

Wm. W. Blair, University of Pittsburgh
Dionin—
Only success has been in those under 50 where some focus of infection was removed followed by dionin. Most satisfactory improvement in some of these cases.

E. S. Ferguson, University of Oklahoma
No real remedy. Limits treatment to proper refractive correction.

W. H. Calliom, Emory University
Has never seen any drug or treatment that would definitely retard the progress of cataract.

Frank Morrison, University of Indiana
Dionin, NaCl Injec.—
Opacities not affected. In cases where loss of vision out of proportion to opacity improvement through injection. Na Cl and dionin locally due to improvement of vitreous haze.

J. M. Hull, University of Georgia
Radium has given great relief in a number of cases.
Knows of nothing else of benefit.

E. T. Brown, University of Vermont
Dionin—
Thinks that dionin and Hyd. cyanide drops with hot applications occasionally retard progress. Also gives KI and Hyd. bichlor. internally.

Gilbert J. Palen, Hahnenmann Med. Coll., Philadelphia
KI—
20% KI sol. locally and KI internally. Majority of cases have remained at a standstill and in many a disappearance of a great deal of lenticular haze.

Albert B. McKee, Standard Med. Coll.
Has found some variation in vision in series of untreated cases as in those subjected to radium treatment.
No experience with other methods.

E. J. Curren, University of Kansas
Dionin, NaCl Injections—
Injections of NaCl not repeated very often and only after extensive periodic use of dionin. Retardation and improvement in vision at least for a time in many cases. In some retardation apparently permanent, being under observation 5 and 6 years.

C. V. Roman, Meharry Medical College
Local absorbent remedies with suitable constitutional treatment frequently effective in retardation of progress.

E. H. Cary, Baylor University
Dionin—
Incipient cataracts due to toxic absorption frequently helped, depending upon location of opacities. Then dionin and subconjunctival injections are apparently of service.

E. V. L. Brown, University of Illinois
He has not found any measure which influences the progress of cataract. Suspicions that choroiditis is responsible for many and a striking number associated with ethmoiditis.

	No Benefit	Positive	Doubtful	Possible
Reese	1	..	..	..
Barker	..	..	1	..
DeSchweinitz	..	..	..	1
Greenwood	..	1	..	..
Blake	..	1	..	..
Alling	1	..	..	..
Dowling	..	1	..	..
Feingold	1	..	..	..
Wheeler	1	..	..	..
Davis	..	..	..	1
Murray	..	..	..	1
Black	..	..	..	1
Wilmer	1	..	..	..
Luedde	..	1	..	..
Campbell	1 local	..	1 general	..
Stanford	1	..	..	..
Pfingst	1	..	..	..
Pusey	..	..	..	1
Parker	1	..	..	..
Compton	1	..	..	..
Boiler	1	..	..	..
Gifford	..	..	1	1
Bushman	..	1	..	..
Shahan	1	..	..	..
Price	..	1	..	..
Derby	1	..	1 secondary	
Hull	..	1	..	..
Morrison	1	..	..	..
Calliom	1	..	..	..
Ferguson	1	..	..	..
Blair	..	1	..	..
Dickson	1	..	..	..
Knapp	1	..	..	..
Brown	..	..	..	1
Palen	..	1	..	..
McKee	1	..	..	..
Curran	..	1	..	..

	No Benefit	Positive	Doubtful	Possible
Roman	..	1	..	..
Cary	..	..	..	1
Brown	1	..	..	..
	29	12	2	9

Dionin, iodine therapy locally and internally, together with dietetic supervision, the removal of foci of infection and the improvement of general metabolism practically includes the treatment as carried out by the majority of ophthalmologists.

It is much more gratifying to the self pride in each of us to present constructive work that has culminated successfully. The conclusions to be reached in this question come from simple clinical observations substantiated by the patients. The optimistic views of medical writers when placed by the side of the opinions of a group of our ophthalmological teachers cannot help but make one feel that something is wrong. The scientific recording of facts cannot assimilate all these observations.

First, as to the small series of cases presented. Fifty per cent showed improvement, 12 per cent said they were better, but statements were not confirmed, and in 18 per cent seemed retarded by not being worse and in 18 per cent progress continued. When one considers the irregularity in the progress of cataracts, the small number in this series, the short time after treatment, the small amount of improvement, and the lack of a series of untreated cases to check against, it is impossible to draw any conclusions. In fact it is presented as a series without any value, simply to emphasize that our literature, becoming increasingly voluminous should demand that enthusiastic medical writers should carefully weigh the evidence at hand before announcing success in any line of therapy. It is a commonly expressed sentiment that one can only believe a small part of many opinions, often expressed as facts, in our current literature.

Secondly, after studying this subject one can come to no real conclusions. Speaking for the large army of ophthalmologists in private practice who can give and desire that their patients have the advantage of any treatment of proven worth, it is to be regretted that the information desired is so often not available. With these men, economic conditions, both as to their own time and their patients' limits experimental practice.

The preeminent worth of scientific conclusions in medicine still lies in their applicability to the relief of the afflicted. If our profession is more than an art, and is to progress as a science, there should be a concerted effort upon the part of those working in clinical and teaching centers to work together and solve some of these mooted questions of therapy.

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Discussion

Dr. F. L. Wahrer, Marshalltown—I was very much interested in hearing Dr. Harkness's paper. For the past two and one-half years I have been very much interested along this line. While I have not had a great many cases I feel that I have been successful in most of them. I do not mean to say that I have had a hundred per cent cure. I do feel, however, that with the treatment of these cases, the time necessary will vary with the individual and that each case is a study in itself. I feel that the most important part of the treatment is in seeing the case often and keeping up the reaction in the eye as continuously as possible. It may be necessary to change your treatment from one drug when it has lost its reaction, to another drug in order to keep up the reaction. General treatment is very important, especially in the older patients. I have found that a large number of the incipient cataracts come in early age; that is from fifty to fifty-five years. In about eighty-five per cent of these cases their record will show that they have had for a great number of years a very bad error of refraction and that it has never been properly corrected. With proper correction, glasses will give a great deal of benefit. It may be necessary to have glasses changed every two or three months. I know that this is rather expensive but most patients are willing, if they are benefited.

F. W. Dean, Council Bluffs—Dr. Harkness has presented a very excellent paper. I wish that I could have had an opportunity to read his paper that I might better discuss it. As it is I must speak of my own results in the treatment of incipient cataracts. I have been using the Smith treatment for nearly three years. This treatment as I give it consists of the injection subconjunctively of twenty minims of a 1 to 5000 solution of cyanide of mercury. The treatment has been limited to a single injection of the cyanide of mercury and no subsequent treatment has been given, either local or general.

Beginning cataracts I have treated are of two types, or a third which is a combination of the other two. The nuclear type manifested by a sclerosis and haziness of the lens nucleus. The cortical type showing either subcapsular striae extending from the periphery toward the center of the pupil area or fine dot-like opacities and a general haziness of the lens cortex.

In cases 1 to 100 treated in this way I have been able to secure re-examinations of 129 of the 164 eyes treated. A summary of the results shows that of the 129 eyes re-examined, there was a distinct improvement in 88, or 68 per cent; the acuteness of vision remained unchanged in 34 cases and continued to fail in 7.

These 129 eyes are further divided as follows; of the nuclear type of cataract there were 47, and of these the vision improved in 21, remained unchanged in 22, and continued to fail in 4 eyes. And I wish to add at this point that I am convinced that the improvement noticed in the above 21 eyes with the nuclear type cataract was due to an improvement in the condition of the cortex of the lens; that is, that those eyes had really a combined type of cataract. There were 73 eyes having cataracts of the cortical type, in which the vision improved in 60, remained unchanged in 11, and continued to fail in 2 eyes. There were 9 eyes which showed distinctly a combined type of incipient cataract. Of these 9, the vision improved in 7, remained unchanged in one and continued to fail in one.

Summary

Cortical cataracts of not too long standing are distinctly improved by the injection of cyanide of mercury.

Cataracts purely nuclear in type are not benefited by the injection, though I am not prepared to say definitely that the progress is not retarded.

The injection of one eye in an advanced case is helpful to the patient while waiting for operation on the second eye.

In the following case reports the line under the record of vision denotes that the injection was made on that date.

Case 3. Mr. J. A. B. (63) July 26, 1921.

Bilateral cortical cataracts; cortex contains fine dot-like opacities with a general haziness—the type we expect to develop rapidly.

		Vision (corrected) R. E.	L. E.
July 26,	21.	20/30	20/50
Aug. 5,	21.	20/30	20/30-4
Oct. 5,	21.	20/40-2	20/20-1
Feb. 11,	21.	20/20-3	20/20
Dec. 16,	22.	20/20-3	20/20
Jan. 17,	24.	20/20-3	20/20-2

Case 5. Miss M. E. S. (66) Aug. 2, 1921.

Bilateral nuclear cataracts with subcapsular striae in each lens. Cataractts are of some two years duration.

		Vision (corrected) R. E.	L. E.
Aug. 2,	21.	20/50-3	20/50-3
Sept. 19,	21.	20/50-1	20/50-2
Oct. 10,	21.	20/40-2	20/40-3
Nov. 15,	21.	20/40-3	20/40-3
Oct. 7,	22.	20/40-3	20/40-2

A decided improvement but due to a clearing of cortex.

Case 6. Mrs. F. W. W. (50) August 2, 1921.

Vision failing for a few months only. Cortical cataracts in each eye with subcapsular striae extending entirely across the pupil area.

		Vision (corrected) R. E.	L. E.
Aug. 2,	21.	20/20-6	20/50-2
Aug. 10,	21.	20/30	20/50
Sept. 1,	21.	20/20-2	20/40-4
Jan. 25,	21.	20/20-2	20/30-1
Dec. 16,	21.	20/20-3	20/30
Jan. 9,	24.	20/20-2	20/20-4

Case 7. Mrs. C. W. M. (66) August 3, 1921.
Bilateral nuclear cataracts.

		Vision (corrected) R. E.	L. E.
Aug. 3,	21.	20/30	20/50
Aug. 13,	21.	20/30	20/30
Sept. 19,	21.	20/20-3	20/20-3
Dec. 14,	21.	20/20-2	20/20-3
April 21,	22.	20/20-4	20/20-2
April 23,	23.	20/20-2	20/30
March 11,	24.	20/20-3	20/30

A haziness of left lens was undoubtedly cortical though no markings were visible.

Case 22. Judge A. S. W. (74) Oct. 10, 1921.
Bilateral nuclear cataracts; left nearly mature. Injected right eye to hold the vision.

		Vision (corrected) R. E.	L. E.
Oct. 10,	21.	20/40-4	Objects
Dec. 28,	22.	20/40-3	
Nov. 26,	23.	20/40-2	
Nov. 27,	23.		Operated L. E.

Vision of right treated eye remained unchanged for two years while left cataract matured.

Case 34. Mr. B. A. G. (64) Dec. 17, 1921.
A locomotive engineer. Bilateral cortical cataracts. Must get better vision or give up his engine.

		Vision (corrected) R. E.	L. E.
Dec. 17,	21.	20/20	20/70
Jan. 6,	22.	20/20	20/40-1
Feb. 7,	22.	20/20	20/30
May 18,	22.	20/20	20/30-2
Nov. 13,	22.	20/20	20/30-2
Jan. 21,	24.	20/20	20/40

He still has his engine.

Case 44. Mrs. A. E. B. (59) March 2, 1922.
Bilateral cortical cataracts. There is a haziness of the cortex; right lens has one subcapsular stria. Has sensation of veil before eyes.

		Vision (corrected) R. E.	L. E.
Mar. 2,	22.	20/20-1	20/20-2
April 12,	22.	20/20-1	20/20
		(Impression of veil is gone)	
Dec. 16,	22.	20/20	20/20
Jan. 15,	24.	20/20-3	20/20

Case 47. Mr. A. J. W. (71) March 8, 1922.
Bilateral cortical cataracts. Fine subcapsular striae and a general haziness.

		Vision (corrected) R. E.	L. E.
Mar. 8,	22.	20/40	20/40
Mar. 28,	22.	20/30	20/30
April 19,	22.	20/30-2	20/20-3
May 17,	22.	20/40	20/20-3
Dec. 16,	22.	20/20-4	20/20-3

Case 60. Mr. W. W. F. (46) Oct. 5, 1922.
Photographer. Incipient bilateral nuclear cataracts plus cortical striae.

		Vision (corrected) R. E.	L E.
Oct. 5,	22.	20/30-1	20/30-1
Nov. 2,	22.	20/30	20/30
Jan. 2,	23.	20/30	20/30
Dec. 28,	23.	20/70	20/50

Case 80. Mrs. E. E. F. (60) Feb. 15, 1923.
Bilateral cortical cataracts. Four striae in right lens and twelve in left.

		Vision (corrected) R. E.	L. E.
Feb. 15,	23.	20/20-2	20/20-4
Mar. 21,	23.	20/20-3	20/20-3
Aug. 13,	23.	20/20-2	20/20-4
Feb. 14,	24.	20/20-1	20/20-3

No striae in right lens; three on nasal side faintly seen in left. Disappearance of striae in this case, among others, convinces me that striae are visible before there is actual degeneration of the lens fibres.

Case 97. Mrs. H. A. D. (74) March 20, 1924.
Incipient cortical cataracts.

		Vision (corrected) R. E.	L. E.
Mar. 20,	24.	20/50	20/50
April 3,	24.	20/40-4	20/40-3
April 12,	24.	20/30-1	20/30-3
April 24,	24.	20/20-4	20/20-3

This patient is a sister of Case 3 with the same type of cataracts. I show this slide to show the rapidity of improvement following the injection in this type of cataract.

Dr. Harkness—I wish to thank Dr. Dean for his most interesting discussion. I have a great respect for Dr. Dean's conclusions, knowing him to be a most careful observer. Because we have not been able to get as good results is not particularly important. But it is important when one finds such a wide variance of opinions among observers over the country, regarding a question of simple clinical observation. I feel that this is a subject where each case is a case within itself and must be taken care of as such. With a great many cases we spend a great deal of our time and they give us much of their time but in the end we do not accomplish anything. I feel that as an ophthalmologist we must look to the internist to maintain the best possible health and remove any foci of infection especially in the cases of old persons. I think there should be some concerted effort to decide this and other questions.

Vinton physicians stamp tobacco as enemy of humanity—but women declare it soothes their nerves.

WHAT CONSTITUTES CONSTIPATION—SOME OBSERVATIONS ON COLON*

P. B. WELCH, M.D., Cedar Rapids

The present paper deals with certain clinical observations on constipation—a review of the physiology of the intestinal tract, particularly the motor functions, and it is its purpose to draw from these studies deductions which may prove helpful.

It has been observed clinically, for some time past, that there was a definite relationship between the ingestion of food and defecation. This has been observed in so-called normal individuals as well as in those suffering from various forms of intestinal disease. In most so-called normal individuals there is a defecation after the morning meal, however, in many other normal individuals there is a defecation after each meal. This is particularly true in children and infants who have not acquired bad habits due to neglect of the call to defecation. This relationship between the ingestion of food and defecation has also been observed in the lower animals. In puppies, who have not acquired any habits, there is almost invariably defecation after meals. In herbivorous animals, who are not ruminants, there is also this same relationship between the ingestion of food and defecation. Carnivorous animals, usually gorge themselves, lie down and sleep after this engorgement and shortly thereafter defecate.

Referring again to our everyday clinical experience, we have all observed in a patient with a diarrhea due to irritation and hyper-excitability of the bowel, that there is an aggravation of symptoms after eating, one or several bowel movements following after the ingestion of food, so that the patients themselves have learned that they will be more comfortable if they abstain from eating during the existence of their diarrhea. This is but an exaggeration of the normal reflex.

The one evacuation daily has been accepted by most of us as the normal, but does this constitute the normal? Does this not frequently constitute constipation? It may be asked what does constitute constipation. Constipation may be broadly defined as an abnormal delay in the passage time of its contents through the intestinal tract with or without symptoms. What then constitutes an abnormal delay? To answer this question it is necessary to study the physiology of the intestinal tract particularly of the colon.

Hertz[1] states that "cases of constipation can be divided into two classes—first, intestinal constipation in which passage through the intestine is delayed while defecation is normal, second dyschesia, in which there is no delay in the arrival of feces in the pelvic colon, but their final expulsion is not adequately carried out. This latter condition is chiefly due to habitual disregard of the call to defecation."

Certainly this is a rational division and it is well to review the mechanisms by which the intestinal contents are carried to the pelvic colon and the mechanism of defecation.

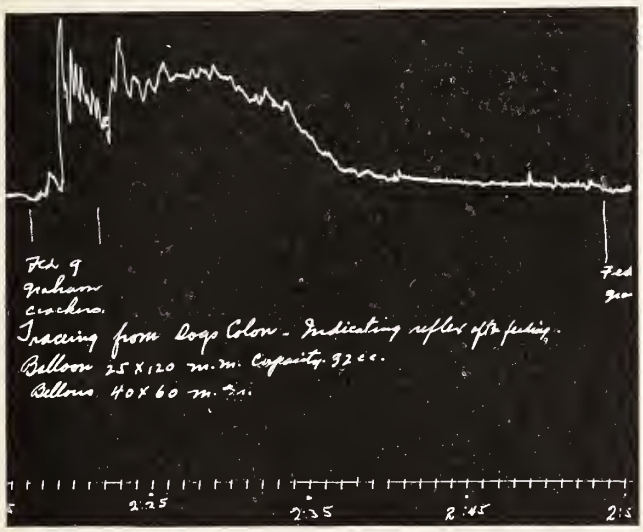
In this paper we are chiefly concerned with the movements of the colon. Again quoting Hertz[2] "The rate of passage of feces through the large intestines can be estimated with the x-rays. The cecum is normally reached in a little over four hours after the bismuth meal, the hepatic flexure two hours later, the splenic flexure three hours after the hepatic flexure and the beginning of the pelvic colon twelve hours after the bismuth meal."

Cannon[3] studied the movement of the colon in cats with bismuth meals and enemata by means of x-ray. It has been found that the movements of the colon in man are similar to those seen in cats. "As the food enters the cecum, through the ileo cecal valve and accumulates there, it gradually sets up, by its pressure a contraction of the muscular walls of the gut somewhere about the junction between the ascending and transverse colon. This wave of contraction then begins to travel slowly toward the cecum, without, however, being preceded by any relaxation of the wall of the gut, as is the case with a true peristaltic wave. This first wave is soon followed by others, with the result that the food is forced up into the cecum, against the blind end of which it is crowded, being meanwhile prevented from passing into the ileum by the operation of the ileo colic sphincter and by the oblique manner in which the ileum opens into the cecum."—McLeod.[4] As the result of the distension of the cecum an occasional true peristaltic wave is initiated, preceded by a wave of dilatation or inhibition. These true peristaltic waves carry the contents of the cecum onward. These waves are not sufficient to empty the cecum and ascending colon at once, and a reappearance of the antiperistaltic waves thrusts the contents back into the cecum resulting in a thorough mixing, delaying the onward passage of feces. During this process the last end products of digestion and water are absorbed, the feces being semi-fluid when received from the ileum. As the contents become harder, attaining more nearly fecal consistency, they are carried through the transverse colon to the splenic flexure by transverse peris-

*Presented before the Seventy-Third Annual Session, Iowa State Medical Society, Des Moines, Iowa, May 7, 8, 9, 1924.

taltic waves. Holzknect[5] first described these movements—having observed them in two instances. The contents of one section of the colon were moved onward into an empty distal section by a sudden push lasting only a few seconds. The haustral segmentations disappeared just before the advance began, but reappeared at once when the material became settled in its new position. Cannon[6] suggests that the functions of the haustra was probably concerned with increasing surfaces for absorption and not with propulsion. Holzknect's observations were verified later by Barclay.[7] It is interesting to note here, that in Barclay's cases this rapid mass movement in the transverse colon occurred shortly after feeding an additional bismuth meal.

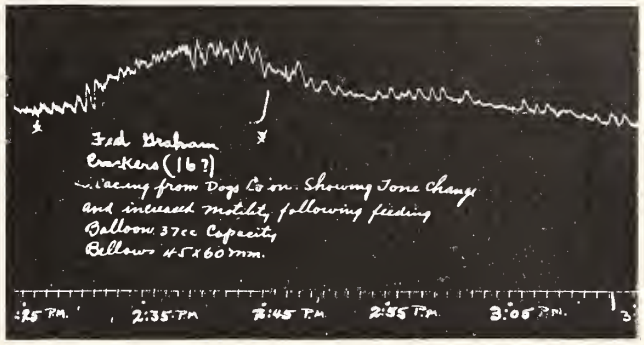
The feces thus being brought to the splenic flexure drop down slowly to the sigmoid flexure,



here they accumulate until they are passed into the rectum when the reflex for defecation is excited and it normally occurs.

Returning now to the question, what constitutes constipation. These facts present themselves. Surmount, DuBus and Tiberghien[8] carried out experiments on sixty-six animals and found that "frequently stimulation by thermal, mechanical or physical agents of the prepyloric and duodenal regions caused contractions in the colon." Hertz,[9] found by making tracings hourly after a bismuth breakfast that apart from meals, progress through the colon was slow, but that after each meal there was perceptible advancement of the contents. More progress occurred, for example, during the dinner hour than during the previous four hours." Cannon[10] states that, "the common performance of the act (defecation) regularly after breakfast is probably due, in part at least, to stimulation of peristalsis in the colon by taking of food."

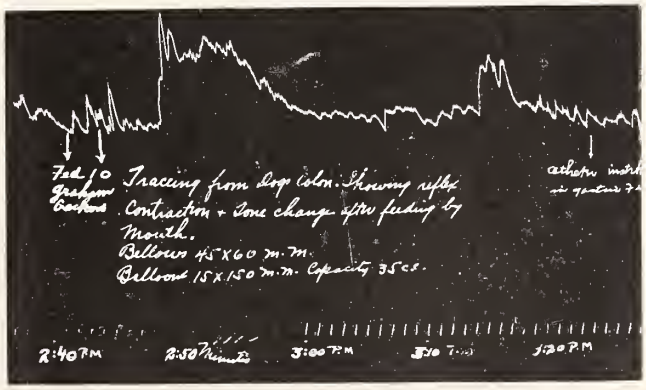
Lastly, we will offer in further testimony of the existence of this reflex a few lantern slides showing muscular contractions in dog's colons during feeding by mouth. These are from some incompleted experiments carried on during the



past year under the supervision of Dr. O. H. Plant, professor of pharmacology at the State University at Iowa City, Iowa.

These slides show the so-called feeding reflex in a dog's colon, obtained by placing a balloon in the colon through an appendecostomy opening, the record being made on a slow moving kymograph.

Here then we have shown a relationship between the ingestion of food and colonic peristalsis. Since we habitually eat three meals a day, does it not seem reasonable, assuming that this reflex normally exists, to have a defecation after each meal. Certainly the increase in tone and peristaltic activity in the colon following the ingestion of food should make this the most favorable time for defecation, and since the act of defecation is in part voluntary, the sufferer from chronic constipation can with the aid of the usual



dietetic and physiotherapeutic measures soon accustom himself to defecate at least twice and usually three times daily after meals, without catharsis. Our patients are instructed to attempt a bowel movement one-half hour after each meal and it is surprising how few failures are recorded, providing no mechanical obstruction exists.

Further—we have observed many instances of chronic constipation which have existed for

years, and who have taken all manner of pills, having a well established cathartic habit with varying degress of irritation in the colon, who have had the most happy results by increasing the rate of elimination by the simple measures above detailed. These patients of course have been examined routinely for extraabdominal pathology and insofar as possible this has been corrected.

After observation of many cases of intestinal disease it is our firm conviction that a very goodly portion of them need never have occurred had they been educated to defecate after eating instead of relying on pills and "what have you" to effect a bowel movement.

We have further observed numerous instances where defecation has occurred regularly once daily and where intestinal symptoms have been present in spite of this so-called normal bowel movement and fortunately in many of these instances the intestinal symptoms have disappeared with simple regulation of habits of elimination.

There is one other factor that has not as yet been considered and that is, that constipation may be present in fact—even though there may be one or more defecations daily. This is due to the fact that the passage of the contents may be abnormally slow, so that the material defecated this morning for instance may have been forty-eight hours in reaching its destination. This occurs rather more commonly than is supposed, and certainly is less likely to occur where more frequent defecation normally occurs.

To recapitulate then, we have offered evidence from our clinical observations, evidence also which has been gleaned from a review of the physiology of the intestinal tract and further experimental evidence as demonstrated by the tracings from the dog's colon, shown with the lantern slides, that there does exist a definite relationship between the ingestion of food and defecation. In the presence of this evidence it seems justifiable to conclude that defecation should normally occur after meals, and since this reflex is present after each ingestion of food that defecation should ideally occur after this reflex has been instituted after each meal, therefore one bowel movement a day may constitute constipation. By recognizing and taking advantage of this reflex we have been able to control cases of obstinate constipation with very little difficulty, so that constipation ceases to be the difficult problem that it formerly was.

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Discussion

Dr. Wesley E. Gatewood, Iowa City—I am sure that we should all congratulate Dr. Welch on his enthusiasm and industry in doing this experimental physiological work. Dr. Welch had no facilities at home and for each of these four experiments has had to make trips from Cedar Rapids to Iowa City, and we feel that his effort represents a true spirit of research. This work is rather new. In 1920 experiments were carried on by a German observer named Zondek, but without graphic record of his studies in that his method consisted of observation of the movements of the intestine of a rabbit, particularly the colon, looking through a sealed window. He noted the phenomena which Dr. Welch has described, and in addition to those factors he mentioned the following: That hunger inhibits peristalsis and that feeding stimulates peristalsis, as Dr. Welch has found in dogs. The definition of constipation as given by Dr. Welch most of us will accept. But the term delay in evacuation of fecal content will possibly require some further discussion. In 1921 Burnett, as a result of the study of stools of normal and diseased individuals, described an intestinal unit and conceived the idea that foods which were irritative in character were rapidly passed through the bowel, and foods which were compatible with the lining and the nervous mechanism of the bowel were retained sufficiently long to be made into these intestinal units, packed together and constituting the normal stool. From our older physiology we believe that the chief function of the colon is absorptive, and, in addition to this, somewhat digestive in its intestinal bacterial change. Further than this, there is little function that we have made out for the colon. The physiology of the colon is still poorly known. If, then, we conceive of the function of the colon as being mainly absorptive, and chiefly absorptive of water, we would thereby conceive of the best definition of constipation as that condition in which the stool indicates excessive dehydration, and not, on the other hand, either delayed or too rapid evacuation. A watery stool or a loose stool then represents diarrhea and a hard stool represents constipation. In the experience of most gastroenterologists, a common complaint of constipation has led to unjustifiable operations, and we feel that this is largely due to the mismanagement of constipation by the common method of using cathartics. If we are to succeed in the management of constipation, we believe it will be necessary that our patients understand physiology nearly as well as we do in this connection, and that they be instructed in regard to the matter of habit, in regard to the matter of intake, and be made to

see that the output depends entirely upon the fuel intake; that a poor grade of coal produces much ashes; that the quantity of fecal output does not indicate constipation or diarrhea, but that the character of the stool with the proper amount of water in it is our best indication.

Dr. B. A. Melgaard, Sioux City—Since we have had presented this afternoon one paper on pediatrics, I would like to say a word about constipation in relation to the infant. The subject of constipation in infancy and childhood is one that has been very much over-emphasized. Mothers have been taught that their babies, to be well, must have a certain number of bowel movements each day, with the result that the great majority of the children that come to us give the history that they are being given daily doses of some cathartic. So I think we should appreciate the presentation that has been made here with its plea to get away from this practice. I wish to re-emphasize what has been said to the effect that we have been thinking of the colon as an organ of elimination. It is not such; it is primarily an organ of absorption, and we can see that the customary giving of cathartics to children hurries the food through the intestines, keeps up a continual irritation, thus seriously interfering with the digestion and absorption of food. The logical thing to do is to increase the carbohydrates and give an adequate supply of water, which liquifies the stool and makes defecation easy. If we will start talking to our mothers in that way we will get away from the condition of chronic constipation in childhood.

Dr. Welch—I wish to thank the members for their consideration and kindness in handling this presentation. Of course the chief point in the treatment of constipation is the avoidance of catharsis. Cathartics are rarely indicated in the average individual. They produce their action largely by irritation of the colon, and I fail to see how we can cure stasis in the colon by irritating it. In regard to the feeding of children for constipation, while I do not see children I see the after-results of the feeding of children, and I do believe that the treatment of constipation should begin in children by suitable diet and the establishment of proper habits of elimination.

THE CRABTREE GIFT TO PREVENT VIVISECTION

Miss Lotta Crabtree of Boston, willed the sum of $300,000 to protect "dumb animals from the cruelties of vivisection." It will be interesting to know what becomes of this money. The interest on this sum which can be used for combatting the "cruelties of vivisection" will be something like $18,000 a year.

Presumably the money will be used for lobbying some bill. The Boston Medical and Surgical Journal observes that as no suffering is inflicted upon dumb animals, a liberal constructive interpretation may be placed on the gift in the real interest of dumb animals.—Boston Medical and Surgical Journal.

THE LIFE INSURANCE EXAMINATION*

George E. Decker, B.S., M.D., F.A.C.S.,
Davenport

It is the serious problem of a life insurance company to establish the physical condition of every individual applying for a policy. Detailed information is sought, not with the aim of selecting only those wholly without blemish, but rather of avoiding those impaired more than the average. The mortality table, the foundation of all life insurance calculation, deals with a large group of average persons and indicates how many of these average persons will die at any particular age, and what will be the average after life time of any particular age group. Calculations based upon the mortality table may be followed safely only if the insured lives are average when they are admitted.

To this end, the life insurance company has developed a medical department centralized in the home office and spread to every corner of the company's field through the staff of local examiners. The work of the entire department is correlated by means of the examination blank. The blank is necessary to prevent the omission of essential points and to avoid the discursiveness that might result from narrative reports of examiners. With nearly three hundred companies doing business in the United States, it is not surprising that there are at least as many different forms of medical blanks. Physical differences of size, shape, color, etc., may result from the different methods of filing in the home office, which once established in a large office is hard to change. Similar reasons may also determine the arrangement of subject matter on the blank. A company's unfortunate experience with certain impairments may lead to emphasis along those lines; advances in medical science may suggest additional questions or may permit the omission of matter no longer pertinent; and it is not unlikely that among several hundred medical directors having most to do with the examination blanks there will be the normal proportion of progressives, reactionaries, and stand-patters, and the blanks will reflect the mental attitude of their makers.

However the methods may differ, all companies are seeking pretty much the same information, and, regardless of the type of blank, this information falls naturally into four main groups: General Information; Family History; Personal History; Examiner's Findings.

The first three are furnished by the applicant,

*Presented before the Seventy-Third Annual Session, Iowa State Medical Society, Des Moines, Iowa, May 7, 8, 9, 1924.

recorded by the examiner, signed by the applicant, and witnessed by the examiner.

The fourth, or examiner's report, concerns his own findings and conclusions and is signed by him, thus certifying to its correctness.

General Information

The applicant's name must be written in full to avoid as far as possible duplication in the home office of the more common names. Further identification is possible through the date and place of birth, and these points, together with a statement covering occupation, are important preliminaries. The applicant's age establishes his premium rate and is the basis of the whole contract, and any error on this point entails a great deal of trouble for the company, the policyholder, or even the beneficiary, as the true age may appear only when the death claim papers are filled out.

Sufficient detail must be supplied regarding occupation to permit of a just and proper rating, if the occupation be hazardous. The applicant's insurance history must be related in detail if any unfavorable action has ever been experienced. He will do well to give the facts fully and frankly, and may be sure that even though his past record is available in the present case, his case will be judged on its merits, without the prejudice which is popularly supposed to attach to an old rejection. Present day competition, if nothing else, necessitates the acceptance of every proper risk, and the possibility that some local examiner or some home office department may have erred in the past is reason enough for giving the applicant another chance. There are two sides to such matters, and if the applicant is honest in his statements he will get all that is coming to him.

Family History

The influence of heredity in certain diseases may give rise to endless discussion, and insurance companies do not feel called upon to lay down final dicta regarding this influence. However, they do have access to facts derived from the experience of insuring hundreds of thousands of lives, and these facts show that certain family histories are associated with definite reduction in the average life time of the members of such families. Tuberculosis, diabetes and insanity are important examples of this, tuberculosis being especially important if the applicant be under average weight. Diabetes in the family history of an overweight is noteworthy, since it is generally felt that every fat man is a potential diabetic.

Insanity in the family history usually bars an applicant from carrying protection against total and permanent disability, since tuberculosis and insanity are perhaps the most important causes for claims under this protection. In few other diseases does total and permanent disability last long enough to be of any consequence.

The ages attained by members of the immediate family go far to show whether the applicant has had the chance to inherit the resistance and stamina which have carried his parents past age sixty-five.

The applicant's own history is arrived at in various ways as is shown by the variety of questions appearing in the blank. It is doubtful whether multiplying the number of questions adds greatly to the information obtained, and whether the blank with an alphabetical list of most of the ills we are heir to really gets anything that is missed by the simple blank. Probably if the applicant is ready and willing to tell the truth, he will do so on a simple blank, whereas if he is seeking to obtain a policy through misrepresentation, he will scarcely hesitate because of an additional question or two.

Practically all agree in requiring categorical answers regarding rheumatism, otitis media, pleurisy, appendicitis, drug addiction or alcoholism, past or present, and full details of the most recent illness. The applicant is usually asked whether any abnormality has ever been found in his urine, for he may have been rejected previously on account of albumen or sugar, and, having gotten the trouble under temporary control, is embracing the opportunity of getting insurance while the urine is normal.

Usually he is asked about recent change of weight, as a heavy-weight may want insurance badly enough to diet and work himself down to a fair approximation of average weight, only to relax again when the object is accomplished.

Most blanks ask the applicant to state whether he is now in good health, and this question like all the others is to be answered to the best of his knowledge and belief. All his answers are representations and not warranties, and must be true to the best of his knowledge and belief.

If the applicant is a woman, the additional questions regarding date of marriage, number of children, menstrual history and history of pelvic troubles are especially important, and it is frequently necessary to remind the local examiner that each of these questions is to be answered by the applicant and recorded on the blank; check marks and dashes are not answers, and occasion additional correspondence.

The information furnished on the blank so far is represented by the applicant to be complete and true, and forms a part of his application for insurance. It is a part of his policy contract, and

a photostat copy is attached to the policy when issued. Therefore, it is necessary to remember that once signed by the applicant and the signature witnessed by the examiner, it must not be changed in any way unless such change is initialed by the applicant. It is his statement and not the examiner's! The examiner merely records it and witnesses the signature.

The fourth division of the blank comprises the medical examiner's report and is a detailed report of such physical examination as is required, signed by the examiner and dated. The true date must be set down as in many instances the contract dates from the medical examination and one day's variation may change the insurable age of the applicant and thus change the premium rate at which he is to be insured.

Certain general questions pertain to the examiner's acquaintance with the applicant; whether they are related, since it is not desirable that an applicant should be examined by a near relative; where the examination was made, and whether a third party was present. An examination made in the back of a busy machine shop is not apt to be all that it should be, and indeed any examination made away from the examiner's office is open to the suspicion that the recorded weight is the result of the applicant's statement or the shrewd appraisal of the examiner's eye. All companies object to a third party being present during the examination for fear of a natural hesitancy on the part of the applicant to talk as freely before others as he would to the medical examiner alone. There is also the remote possibility of the applicant's being coached in his answers by an eager and not too scrupulous agent.

Inspection reveals color of eyes and hair, neither of which bear upon longevity, but may be deciding factors in identification of a dead body.

Some years ago, the report of the medico-actuarial investigation covering over 800,000 insured lives, showed an experience on over-weights that was rather more gloomy than anyone had anticipated, and as a result a great deal of care is now devoted to the proper handling of the overweight class. Calculations are made from three factors, age, weight, and height, and to be of any value the information must be accurate. Guessing at weight and height will not do.

The measurements of chest and abdomen have a very definite relation to stature, especially in overweights. The expansion of the chest is taken not to determine chest capacity, but because it is well established that any man is a poor insurance risk whose belly is bigger than his expanded chest.

Pupil and knee reflexes are easily and quickly tested, and teeth and throat inspected with the help of a wooden spatula. Enlarged cervical glands or enlarged thyroid can be found by palpation, and corneal opacities need hardly more than a glance. These and other superficial evidences of past and present ill health may be noted rapidly and such additional information obtained as is necessary. The only requisite is a definite order of procedure.

The examination of the heart and lungs cannot be made except with the chest bared. The best clinicians and consultants in the country find it necessary to remove the clothing and it is not likely that the average examiner is any better able to recognize heart murmurs or rales through varying thicknesses of underwear. A large per cent of the early death claims are occasioned by heart and lung diseases, and the companies are renewing their efforts to avoid the constant acceptance of impaired risks which escape recognition by the local examiners.

Inspection of the abdominal wall and palpation of the liver border and McBurney's point take but a moment, but if gall-bladder and appendix impairments are thus definitely excluded, the time is well spent. Hernia, whether umbilical, postoperative, inguinal or femoral, must be examined, the truss being removed if necessary, and an accurate report made as to the size, reducibility, etc., etc. The applicant's statement regarding hernia is not enough.

The pulse rate and blood-pressure may well be taken at the same time and should present no difficulties. The pulse rate may increase under observation. Due note of this should be made and a later effort made to find the true rate. Disturbances of rhythm must be described so as to enable the home office to distinguish between extra systole and arrhythmia due to myocardial change or auricular fibrillation. When it is remembered that a pulse rate over ninety is apt to bar the applicant from standard insurance, it will be seen that an accurate record of the pulse rate is necessary. In this connection, it may be mentioned that some examiners' cards show a most astonishing uniformity in the matter of pulse rate. In dozens of cases, old and young, men and women, winter and summer, the pulse rate recorded is seventy-two.

No doubt the blood-pressure reading is always taken now on the bare arm with the stethoscope, thus making it possible to get an accurate diastolic reading. Some companies direct their examiners to take the diastolic reading at the point where the sound disappears, while others want it taken at the last sound change just before it disappears. By following the directions on the

blank in question no difficulty need be experienced.

Reference to certain home office cards reveals the remarkable predominance of systolic 120, diastolic 80 in old and young, and it is hardly a coincidence that the uniform pulse rates and blood-pressure readings are usually on the same cards.

The main difficulty about the urine examination is the occasional necessity of additional examination caused mostly by the finding of traces of albumen or sugar. Either of these conditions may be functional, though transient albuminuria is by far the more common. No company is willing to grant standard insurance to an applicant showing albumen in the urine, though most companies recognize that the condition may be transient, and repeated examinations are needed to establish whether the applicant usually shows albumen or is usually albumen free. The additional examinations are required in order to be fair to the applicant and do not necessarily reflect upon the ability of the examiner.

A trace of sugar is much more serious and may in fairness to the applicant necessitate a functional glucose tolerance test. This requirement usually carries with it added compensations.

Practically all blanks have a space for remarks and additional information, and it is gratifying to note how many examiners add qualifying and explanatory matter in the material in the body of the report; not only is this true, but in addition, confidential letters from the examiner to the home office frequently give invaluable information that for obvious reasons cannot appear in the regular report. Needless to say the confidential nature of such additional information is always respected.

In reviewing the experience of eighteen years of life insurance work, it is a pleasure to state that the quality of work by the field examiners has vastly improved, and the favorable mortality experience of all the companies suggests that this improvement is general throughout the country.

Discussion

Dr. George E. Crawford, Cedar Rapids—It is impossible in five minutes to do anything like justice to the discussion of so broad and comprehensive a paper as the one that has just been read. Possibly the thought has been suggested to some, why or what is the appropriateness of such a paper as this before a state medical society? It seems to me it is the most appropriate thing in the world, from these facts, for instance: Life insurance has become the greatest business in the world. It probably has a vital interest to many more individuals than any other line of industry or business. To illustrate: The United States has many more miles of railroad than any other country in the world, almost as many as have all other countries combined; we realize the vast amount of money invested in this great industry, but it is a paltry sum compared with the volume of business of the life insurance companies of the United States. Of the approximately 300 companies doing business in the United States, there is a large number of them whose volume of business runs into many billions. From these facts we can form some general idea of the vastness of this business. Hence the appropriateness of this subject being placed on all medical programs. The point of contact of the medical profession with this great business is in the matter of examinations; and it is a most vital contact for us. Upon the reports of these examinations very largely depends the information which is essential in making this great business a success—I venture the assertion that more than 90 per cent of the men in this audience are examiners for one or more insurance companies, some of you for ten or even twenty. Hence the importance of a frank understanding between the examiners and the companies, as well as between ourselves as to just what is required of us, as examiners for this great business, which is of so vital importance not merely to the companies themselves, but to the individuals concerned. It is the most serious problem of insurance companies to ascertain the facts concerning the physical condition of applicants for insurance; and upon the reports of the examiners they mainly depend for that information. There are other valuable sources of information, but this is the principal source. Now, a good examination for life insurance is a portrait, more lifelike, more accurate than any photograph can be, because it gives a picture of the individual not only outside, but inside. Now, just to the degree of artistry of that picture depends its value to an insurance company; and it depends largely on the touching up, as an artist would say—the little things. All of us who have had experience in life insurance examinations know that it is a vastly different thing to examine a man for life insurance, than it is to examine the same person clinically. When he comes to you as his family physician to find out if anything is the matter with him, he invariably has a story to tell, quite different from that which he tells when he comes for insurance. When he consults his family physician he is quite prone to magnify his symptoms and exaggerate his ailments. But it is one of the singular psychological anomalies, that when a person is being examined for insurance, he minimizes the importance of all past sickness to the vanishing point; and usually without the least idea that he is falsifying his statements. It is a test of the skill and ability of the examiner to be able to dissect and analyze these diluted statements; and give them their proper relation and significance.

Dr. Ross Huston, Des Moines—I believe the medical profession is more interested in the remuneration they receive from insurance examinations than they

are in other advantages there may be in doing this work. The insurance companies of the United States paid out last year something like ten million dollars for examinations. I will leave it to you if it is not an asset worthy of conserving to the practitioners of medicine. This can only be done by paying close attention to life insurance examinations and doing this work well. I did considerable examining for life insurance companies before becoming an executive of an insurance company and I considered that it was well worth my time if it did nothing more than keep me up on making physical diagnosis. I believe that feature should be of interest to you. It is the policy of the medical directors of the different companies to appoint a physician to make examinations for their company in a particular district and it is their duty to back that examiner up. Sometimes they ask for additional information. In so doing they are not criticising your work but are trying to determine whether or not the individual applying for insurance is a good risk. The essayists speak of the insurance blank. The average life insurance blank is written out with the view of bringing a picture of the applicant before the underwriter. Most of these blanks are written out to approximate a hospital history sheet. They attempt to follow this same outline but because of certain legal complications and the fact that part of this blank is photographed and becomes a part of the contract, it is not always possible to have all the things in it we would like to have. I think the chief advantages accruing from life insurance examinations are: first, the remuneration, and second, keeping up in the technic of making physical diagnosis. Then again, it is the best way I know for a medical man to widen his acquaintance and to have the opportunity to examine normal people. We must remember that the average life insurance impairment is an impairment of slight degree. Insurance companies have been given credit for early diagnosis in many diseases, particularly is this so in the cardiac group and also in diabetes. I believe that the insurance companies should have credit for the fact that some of those lives are lengthened because of early diagnosis made through examinations for life insurance.

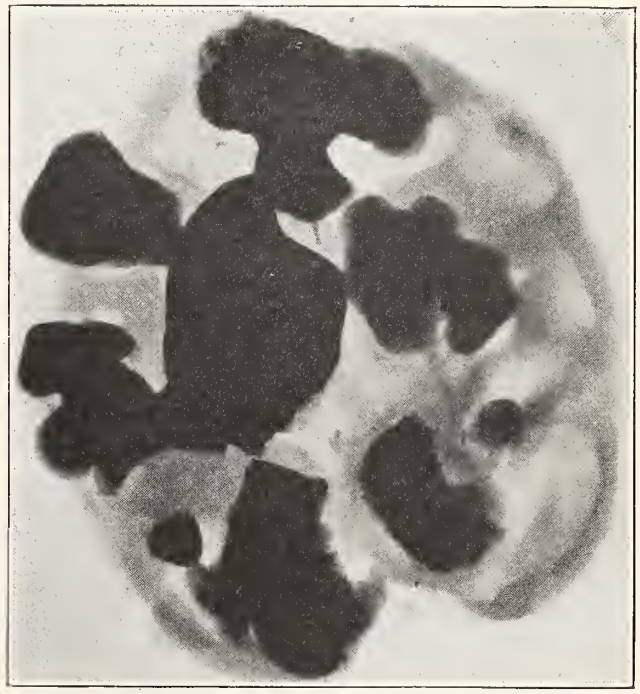
Dr. Oliver J. Fay, Des Moines—I would like to correct one statement made by Dr. Huston. We had occasion to look up the amount of money paid by life insurance companies for examinations, and it is more than $15,000,000 instead of $10,000,000.

Are doctors' fees to become standardized? In the district of Columbia the medical society works out a scale of maximum and minimum fees for nearly every ailment under the sun. Cutting out an appendix may cost $100 to $5000, a wide range. Basing medical charges on ability to pay, rather than on services rendered, sometimes comes in for criticism and debate.—Iowa City Press.

AN UNUSUAL CASE OF PYONEPHROTIC STONES

Charles F. Huband, M.D., Ottumwa

J. G., forty-six years of age, machinist, had the usual diseases of childhood and small-pox eleven years ago: father died of chronic interstitial nephritis at the age of eighty-three; mother is still living and well; there were seven sisters and one brother, one child died in infancy, one brother died of tuberculosis, aged thirty-nine; one sister died of some type of liver trouble at the age of



STONES IN SITU
Kidney divided in lateral halves

thirty-one; another at the age of eighteen of accidental poisoning. So we may conclude from the family history that there is nothing of a positive heriditary tendency in this case.

As a primary focus of infection, we may say, that infections of the genitourinary tract are either ascending or descending, or may come from some remote part through the blood stream. We wish to lay special emphasis in this particular case on an advanced pyorrhœa. Almost all the teeth were loosened and the gums very much receded. In presenting this very unusual case, almost bordering on a fossilized kidney, there are no new situations or facts to be presented, except the irregular shapes, sizes and multiplicity of the formations together with complete destruction of the parencyma of the kidney, leaving it a little more than a capsular remnant enclosing a collection of petrous matter, are facts worth emphasiz-

ing. This case gave a history of kidney trouble lasting fifteen years. Two years ago a small kidney stone found lodgment in the urethra and was removed by a fellow practitioner and showers of phospatic deposit were observed from time to time. For two months prior to his recent operation he had suffered considerable pain in the left lumbar region with constant and alarming hematuria; the condition which caused him to seek surgical care was a profuse hematuria.

Blood count when first seen was 2,600,000 reds; 11,000 whites; 40 per cent hemoglobin. He was ordered immediately to the hospital where an

SKIAGRAPH, RIGHT KIDNEY
Showing an advanced lithiasis, extending from pole to pole

x-ray revealed a cluster of stones reaching almost from pole to pole of the kidney. He was operated the following day. Considerable difficulty was encountered in the removal of this collection of stones and kidney on account of the large size and shortness of the pedicle. To facilitate matters, a portion of the lower rib was sacrificed. Recovery from the anesthetic and operation were uneventful, notwithstanding his depleted condition. After first urine voided, there was no further trace of blood. During the four days following operation fourteen ounces of urine were passed, finally suppression occurred.

Every effort was made, including intravenous solutions to arouse the opposite kidney to action, but dispite all he passed into a uremic coma. The kidney contained eleven stones, one measuring 13 c.m. but was broken into three pieces in delivering the kidney. The entire mass of stones weighed 144 grams. Stones are often classified according to shapes, chemical composition and to fancied resemblances; again they are sometimes referred to as primary and secondary. For purposes of description science must employ certain basic principles and descriptive terms in her effort to describe pathologic formations, but in this case a descriptive adjective is hard to find.

Referring to primary and secondary stones, the question may be raised "was there ever a nephritic calculus, *per se*", that is, without a preexisting kidney pathology. The case is not unlike the much-mooted question as to which came first, viz., the egg or the hen. This swings us back to the great immutable laws of physiology and pathology. Judging from the vast amount of destruction of renal tissue in this case, we might by inductive reasoning conclude that in this particular instance the stones were secondary to a pyronephrotic process extending over a period of years; that our destruction was not necessarily due to encroachment, irritation and multiplicity of stones, but to the never ending process of metabolic infection.

THE PASSING OF THE GENERAL PRACTITIONER

O. C. MORRISON, M.D., Carroll

The action of the Iowa State Medical Society against its members who collaborate with cults, cureall, and quacks is not news to the members of our profession and has the united support of every member in good standing.

The American Medical Journal has given untiring effort to rid its membership of undesirable and unprofessional persons and our State Society voted to give it full aid and support. The average physician wonders if simply imposing drastic penalties upon the transgressors will adequately correct this condition. Will it not be necessary for our profession to eliminate the conditions that have actually brought about this necessity.

The action of the American Medical Journal and that of the Iowa State Medical Society will be given full approval by the general public who feel that we must be responsible to ourselves for the conditions that exist. They view our profession with confidence and expect that our relationship to them will be one of unselfish service

to every class of her teeming millions. The general public have been free from criticizing our profession. They have made no attacks and have attached no blame upon us as a profession and in addition we have enjoyed their full confidence and support. In return we should render them adequate service with a full consciousness of our obligation. We as a society must be very mindful of our own weaknesses, and strengthen them sufficiently so that they will function normally. We must correct any tendency to blight in any branch of our great profession and render them aid and see that every phase from the common practitioner to the exclusive specialist is made fruitful of real service to society. On making a careful summary one is convinced that the ranks of our general practice is being rapidly depleted without sufficient recruits to replace them and with but little hope under existing conditions that the vacancies will be refilled. The recruits are not to be found among our medical students. The new students are not intended for general practice and few intend to enter general practice because of the lack of opportunities this field affords.

The state of Iowa is perhaps most typical of all the states in that it is wholly rural and the lives of its people find contentment in the simplicity of community life. We have no large cities, hence the general profession is typically analogous to the relationship of the general practitioner to his patient. There is not another group in the society of our state who enjoy the confidence or wield a greater influence than does our State Society. In order to get the full grasp upon the situation it will perhaps be best for us to make a survey of our relationship and what it means to the general public. If we are not held in the esteem that we ought to be then it is our duty to make it plain to the people that we mean more to them than they may think.

When reference is made to the passing of the general practitioner, we will see at a glance that we ourselves are at fault and not the general public.

If we make a survey of the people of our state, their needs and what really constitutes their greatness, we can get the best visual picture by comparing one generation with another. The greatness of any single generation is not due to the curve of intelligence of a few geniuses who happen to be in that generation, but it is due to the intelligence curve made by the great mass of the generation. Each generation begins alike, they all start in infancy and are alloted three score years and ten. Their greatness must be demonstrated in that period of time. The heritage of preceding generations has a marked influence, but heritage means nothing in the hands of the slothful. We have been singularly blessed in America because from the beginning of our nation's history every generation has tried to give its people an equal chance, of being born free, having the advantages of attending the public schools, the right to vote, and all the privileges incident to the citizenship of our great country. Then being under the leadership of such great men as Washington who established our great free public school system, and of Lincoln who enforced the rule that all men should be free, and McKinley who insisted upon brotherly love, and Roosevelt who defied the oppressors, and Woodrow Wilson who felt that our ideals would be fitting for the peoples of the earth. The generations who have been schooled under these masters, who have shared the benefits of the labor of all geniuses and where men rise to greatness through the avenues of equal opportunities and by their own efforts can say that we are truly the greatest generation.

If we were to single out any single group of men from this generation and base our selection wholly upon the merits of service, scholarship, earnest devotion, sympathy for all classes, and duties rendered to all classes with whom they come in contact, we would be forced to select the medical profession. And out of this profession if we were to again draft the group that is nearest the common people in points of service we would be forced to select the general practitioner. The leaders among our great profession are such because they render the greatest service to the poor, to the unfortunate, to the widow and orphan, and to the lame and the halt. We find them toiling daily, giving their lives freely to the service of all in the great free clinics of our land. Let us take a step nearer the sympathies of the great common class and visualize for one moment the general practitioner who is representative of the rank of our profession and who lives most truly of all the motto of "Service before Self". It is he who like the priest at confession, enjoys the inner confidence of the whole people. He knows in detail the troubles and the worries and the anguish of every member of the household from the gruff growl of the head of the house even down to the whimper in the crib. He never refuses because of poverty. He gives all that he has and accepts what is given to him. I wonder if you have ever dreamed that fate has decreed against him, and unless we are aroused to the consciousness of his worth and merit and flee to his rescue, as we did to the Belgians and to the helpless in Flander's Field then he shall be for-

gotten and we will cease to teach our children that old familiar poem, "Our Old Family Doctor."

You'll know how by his muddy shoes,
His clothes of last year's style;
The weary look about him,
The sweetness of his smile.

You'll know him when the school's let out,
And see the children flock
To catch a cheery word from him,
And shout their "Hello, Doc."

You'll know him too, at midnight,
When he rides thru sleet and rain,
And wades deep in a swollen stream,
To reach your bed of pain.

You'll know him in the dawning,
Still sitting by your bed
In damp clothes—Oh, so patient,
His hand upon your head.

He was never in a hurry,
When a kindly word could cheer;
And the little jokes he saved for you
Are memories most dear.

He didn't fall in Flander's Field
Where crimson poppies grew;
He wore himself out, waiting
On folks like me and you.

He had no cross in Flander's Field,
Mid poppies crimson hue;
The cross is in the aching hearts
Of folks like me and you.

There have been many familiar figures of the past against whom fate has ruled. They served their purpose well in their day and have passed on. Among them is the ancient school master, very little has been written of his influence upon the nation. In the earlier years when obedience and patriotism were the two enviable possessions it was he who educated the young. He was not aloof from the irksome tasks of the day. He took his place beside the men on the battlefields, many of whom were felled at his side by the stern surgery of the sword. No one knew better than he what citizenship meant. To the rank and file there was no one more able to impart this information. Fate decreed against him and today he is no more. I have wondered if his absence has not had much to do with the view that is taken in our great country by the masses, and its disregard for laws by the average youth. We can hardly blame the youth when he depends entirely for his inspiration upon some bobbed-haired girl in her teens, her face painted beyond recognition, her dresses to her knees, and with a meagre training and little if any wisdom, yet to her we have entrusted the grave task of teaching our children citizenship. Do you wonder that the boys of today are taking the laws lightly and regard the laws of our great country very largely as a joke? It would be very interesting to know just how far this contribution goes toward the general unrest and disregard for the laws of our land. The community life of the people is very much the same whether they are a part of the urban or of the rural community. Their ideals, their habits, their customs and thoughts follow an almost identical path.

It has been recognized from the beginning that there is an immutable Trinity that is essential to the life of any community. If any one of the three shall be wiped out, the life of that community, its intelligence and progress, is doomed. We have all wondered why we have the three great professions. We have wondered why they were so named and why this classification has so lived through all these years. It is because they form the very foundation of the life of any community. The professional Trinity to which I refer is (1) the minister; (2) the teacher; (3) the physician.

We must have the principles of the Christian religion as a basis of our social intercourse and a basis upon which we transact all business. The national and state constitutions are but the amplification of the Ten Commandments. The teacher of these principles is our minister.

The second of our Trinity is our teacher in the public school. We would very quickly cease to exist if we were to wipe out this influence on our civilization.

The third one of our Trinity is the family physician.

This Trinity constitutes the very unit of government. It is very necessary that each of the three shall be the very ablest that our nation affords, because it is upon these that the security of the community depends. What would happen to society if by one fell stroke we were to wipe out all the principles of the Christian religion? We can easily find the answer in that land across the sea, Russia. Who would want to live in a community where there were no schools and no teachers to acquaint the individual with his surroundings and with the great laws of sociology? When the schools were removed in Russia it became unbearable even to the masses and they demanded that the old school master should be returned. Can you stretch your imagination sufficiently far to get a glimpse of what the condition will be in a community from which the

old family physician, his influence, his knowledge as a sanitarian, his advice as a health officer, his relief as an obstetrician, and the one who stands, as the Moses of old, between the people and the plague; what will be the result if he is removed? We can imagine the disaster that would follow in the wake of his departure. In less than one year there would not be a ship leave our ports, neither would there be a car or train cross the border of our country. Disease would leave this fertile oasis of Iowa more desolate than were the streets in London during the great plague of the fourteenth century.

There are many factors that tend to make his going imperative. First, business unfitness. The schools from which comes our supply of general practitioners have ruled that a high school graduate must spend seven years in collegiate training before he is admitted to the general practice. This lad must spend from $12,000 to $24,000 in actual cash with the seven years of time to become a general practitioner. The returns upon the investment in finances to the general practitioner are not great enough under our present custom to remunerate the investment.

Second—Professional Unfitness: This lad has been unfitted by the very character of his training, by being associated with the foremost scientists of his age in unwinding the threads of scientific research in our great laboratories and in the operating room, to become a general practitioner. He tries to stay in this alluring field and to become a specialist to complete or follow this great work. Those who are forced to return to fill the place of the general practitioner are the failures of attempts to follow this high ideal.

Third – Social Unfitness: It is not difficult to follow this student in his daily work, where he is led over into the lines of specialism and away from the practical side of the profession, to see that he is socially unfit to take his place in the common tasks of routine daily practice and to take kindly to his social environment. If he is forced to return he is ill-disposed and is a misfit.

Why do educators of today prescribe this course knowing the fate to which we are assigned because of it? If we look around we find that our profession has absorbed much of the organized idea from our great trades unions. Where is the classification of bricklayers, plasterers, and many of the other trades? They refuse to be classified into degrees of efficiency. They all demand the maximum scale. The telegraphers, miners and shopmen all follow the same general plan. They argue that by elimination of numbers they will bring greater profit to those in the profession or trade. They see that all immigration stops and they are elevated to the plane of idealism.

Our government or society allows them much freedom in working out the mandates of their own fate. They must remember that their function in society is to serve others and not self. If they go to the extreme, the kaiser picture must be called to their attention. He made society serve him, as did Napoleon, and I can assure you that remorse has substituted his pomp and glory and self-deified claims in society. We must look to Germany where the physicians went to the extreme of development and the great common class, or the government, took them over and assigned a man to a territory where he must serve in the spirit of service before self. (State Medicine.)

Where there exists a need and a demand for a service or an article of commerce, commerce quickly fills the demand with a substitute. The chiro, osteopath, eclectic and divine healers, patent medicine drug stores, and medicine wagons, mid-wives and magicians are the substitutes that commerce offers when our great profession fails to render the real service to which society feels they are entitled.

Would it not be safer and wiser for us to make a careful summary of the needs of society and try to render them a service in accordance with their true needs and classify our great profession giving each group a distinct task to perform and see that they are adequately remunerated so that they are contented and happy in each group, rather than to say "There is but one group. We are the profession", and have society say to us "All right, we will assign you where we will?"

The general practitioner could be a three year man, trained in hygiene and sanitation, quarantine, obstetrics, fever, etc., given a license covering that work, mark his limitations and above all else see that he has sufficient funds to keep his family respectable and give him sufficient supplies and equipment to serve his task with a master efficiency. Open the road for him of free access to the many specialties and define his relationship to each of them. Keep him a part of our own great profession and preserve him to the Trinity of community life.

We need the seven year man also, as well as the ten year physician and surgeon. They too should be limited to their fields and have all work in harmony. As it is today we are all exclusive surgeons by license regardless of our capabilities.

We all agree that our plan of standardizing medical schools was a great achievement for the advancement in medicine. There are none who feel that we are nearing the maximum of our

development in scientific work and all are agreed that we need to cooperate in order to get the most for all.

Because we have wonderful medical universities is no reason why a three year man could not be educated in it. We could arrange his course so that if he cared to return later and qualify for one of the seven year specialties or for a ten year course he could do so and would have every convenience for doing so. The question arises over the wisdom of requiring every man in the profession to meet the extreme requirements and the handicap to society of not having well trained men to care for the smaller places with less income. It does not require a sage to visualize the future if we persist in our present plan of continually cutting down the number and increasing the requirements until we shall be forced to accept a state practice. We must furnish the common people with adequate care at a living wage, otherwise we fail as a profession.

Our great hospital association is making a similar attempt and as a result the little so-called hospitals in small and large towns have multiplied many fold in the last few months and are still multiplying. Some of the hospitals see the mistake of a closed staff and some have been forced to retreat or lose their business. The greatest problem we have in hospital management today is for the care of the common classes. They find it very difficult to care for people of a wage earner's means. The free clinics answer this best. The clinics at Iowa City have doubled again and again because of better facilities, etc., and because the common classes are barred from the hospitals of their own communities because of finances. This class are worthy of our earnest attention and demand a solution for their problem. We can solve it if we will but try.

The nurses training problem will also have to be solved by the profession in the near future. The trend is to the six year nurse with no stop offs. We all know that many of our patients could be well served by a two year nurse or by a four year nurse and we all acknowledge that there is a place for the six year nurse.

If you as a physician were ill and required the constant care of a six year nurse on the eight hour day schedule at $60 per week or a total of $180 every week for nurses care how long could you keep away from the financial undertaker? Then what chance has a laborer's wife in a severe confinement case? Are we taking the proper stand as a profession? Are we serving humanity?

Would it not be the part of wisdom to have a committee or a conference and get the facts from all the various strata of our great profession and try to get harmony and service to all? We could get a limitation on requirements and prices and see that every group would fully co-operate with every other group. The way must be opened for the general practitioner and his problem must be solved as he is the very foundation of our great profession. He must have trained help of a class near his own. He cannot use a nurse who gets a greater salary than does he. He must be supported by the profession before the eyes of the people and when he comes to the hospital with a patient he should be a part of our profession and not made to feel that he has committed some heinous crime and is socially and professionally unwelcome. If he needs help we must provide it for him in a dignified way and then we will have harmony and quacks will not be heard and we will not have to discipline our general practitioner away from the temptation of commercialism in order to send his boy to college.

Would it not be better to adopt a plan that will be constructive and carry with it economy to all, wisdom to the profession and sympathy to the poor.

A DELEGATE BREAKFAST

The House of Delegates of the Indiana State Medical Society has adopted an interesting feature for the last meeting—a breakfast meeting at 7:30 a. m.

It appears quite probable that some delegates have been late in getting to the meeting and it is thought that if the delegate has the choice of a friendly breakfast or going without his breakfast, he will set his alarm clock for an early hour.

Dear Doctor:

I am compiling a book on the subject "The Doctor in Other Fields", and I wish to make it as representative of those of our American doctors who have attained fame in fields other than that of medicine, as I possibly can. Hence this letter.

I would appreciate it very much, if you would canvass your State Medical Society, for men who would be entitled to notice in such a book, and secure the pictures of such men, together with a history of their lives, and accomplishments, and forward the same to me at your earliest convenience.

Thanking you in advance for the courtesy of an early response to this appeal, and urging this action upon you as a duty to the profession, I am,

Cordially and fraternally yours,

W. Moore Thompson, M.D.

The Journal of the Iowa State Medical Society

D. S. Fairchild, Editor.....Clinton, Iowa

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THE ANNUAL CONFERENCE OF SECRETARIES OF THE STATE MEDICAL ASSOCIATIONS

The question which is constantly being raised is: In what way may the forces of the medical profession be organized and coordinated so as to bring the best results, first to the profession and next to the public which the profession serves?

We are often advised that the first duty is a duty to the public and that our own interests are of secondary importance. Does any one seriously accept this as a true estimate of the facts? Every citizen accepts a duty which he admits he owes to the public. Each calling in life owes a duty which falls in the line of his service, which may be measured by the nature and character of his service. If it has to do with human life it may be estimated higher than purely commercial exchange, but the duty in all cases comes home to the individual calling. If the physician conceives it his first duty to provide for the welfare of the public what may be his own condition? A well paid and prosperous profession is in every way better prepared to render valuable service to the public than a poorly paid and impoverished profession. Nothing is more depressing than poverty and unpaid bills, and the physician who exposes himself to the hardship of an exacting practice which makes him a prematurely old man, all in the interests of "high ideals", may bring to himself commendation, but does not bring comfort, hopefulness and optimism, which are such important factors in bringing aid to the distressed. So that in our endeavors to render valuable service and duty to the public, we should provide for our own material comforts. No right-minded individual will deny this, but how often do we stand in our own way because our vision is so short?

The great business organization of our profession is the State Medical Society, which selects certain men who are able and willing to render service in the difficult and complex matter of utilizing the forces of organization and cooperation to bring advantage to the medical profession as a body and as individuals.

The American Medical Association organized as a central body, equipped with every facility for conducting a great business, furnished with money contributed by the individual members of the profession, directed by men of ability and experience, by their advice and direction, bring together the working forces of the profession to work out the problems for the physicians who are struggling with their individual problems at home, and so once a year the representatives of the home bodies come together for review and revision.

The problems become more complex from year to year. The research workers are making new discoveries; the practitioners of the several branches of medicine are adding new methods of practice, all of which bring new problems for solution, to render the practice of medicine more profitable and more agreeable.

Dr. A. E. Bulson, secretary of the Indiana State Medical Society, raises the question: "What is wrong with state and county medical societies"? All the state secretaries of the United States answer this question in their own way, which conclusively shows that while all operate under a common constitution, their methods differ materially in detail. Some states have great cities of dominating influence. Some states of large population and no big cities. Some are great states and with small population and small cities. Each has its problems growing out of these several facts. The problems in New York and Pennsylvania are different from those in Arizona and New Mexico. If there was one more outstanding fault than another, it was a lack of cooperation between county and state society. All were agreed that many county societies lacked cohesiveness, considered too little the make-up of programs, there was too little interest in the meetings, which is, however, being remedied by the helpfulness of an executive secretary, who helps in making up a program for the meetings. There was a general feeling that to bring a large proportion of physicians into the work, a more liberal supply of money should be provided for. That

it was unfair and unwise to ask workers to give of their valuable time without adequate compensation. There are county societies so situated that the small group of worthy doctors feel themselves alone and that it was not worth while to meet with any regularity. It was seen that friendly physicians, if their expenses were paid, could visit these smaller communities from time to time for help and encouragement.

In Iowa we are preparing a survey of the profession of the state to discover where the weak places are, and what remedies may be employed to bring our friends into more active relations with the State Society. We need here the active cooperation of the district councilors, who are in a position to know what should be done. We are much better situated than most states as to transportation facilities and as to prosperous communities and we have the remedy.

PRESS COOPERATION

The Long Island Medical Journal devotes the October number to the discussion of "Press Cooperation". The Journal presents the influence of the lay press upon the public mind and that if medical writers the country over would furnish suitable copy to local newspapers, it would have a great influence in cultivating a better spirit towards scientific medicine. We are often witnesses to the interest manifested by newspaper readers on the publication of some alleged new medical discovery which soon proves to be a fake. It is quite probable information spread by local men would be equally interesting.

There has been an ethical tradition that the appearance of medical men in the local papers was an offense not to be condoned. But there should be a difference between a medical contribution for advertising purposes and for general information. This could be arranged by the local medical society through a committee on publicity.

The King County Medical Society (Brooklyn, New York), proposes to begin by furnishing to the press stenographic notes of their proceedings. "The physicians and editors of Brooklyn have agreed on what press cooperation is, and on the means to secure it".

We trust that our local medical societies give this matter serious consideration.

The publicity feature above referred to is illustrated by an address delivered by Dr. W. J. Mayo before the public meeting of the Indiana State Medical Association at Indianapolis, September, 1924, under the title of "The Influence of Ignorance and Neglect on Cancer". This was a presentation before a public meeting in language and style to interest an intelligent lay audience and also interesting to a medical gathering.

FATAL ACCIDENTS

The Statistical Bulletin of the Metropolitan Life Insurance Company presents some impressive statistics in relation to public accidents.

"It is estimated that there occurred 84,000 deaths from fatal accidents in the United States during 1923, and that this number was 7,500 in excess of the figures for the year before. The slight decrease in the fatal accident rate in recent years has been more than made up by the increase in population." The American death toll from accidents is 1,462 per week or 209 per day. Compared with fatal accidents in England and Wales, the rate is high. In these two countries the fatal accident rate in 1922 was 321 per million; in the United States for the same year, the death rate from accidents were 698 per million population. In other words, we lose from 35,000 to 40,000 in excess of the number of deaths which would occur if the British rates prevailed here.

It is shown that the total fatal accidents occurring in the United States in 1911 was 79,255; in 1923, 83,772.

Railroad fatal accidents in 1911 were 12,179; in 1923, 8,078. Decrease in railroad fatal accidents 1911 to 1923, 4,101.

Automobile fatal accidents in 1911, 2,061; in 1920, 11,067; in 1923, 15,714. An increase in automobile fatal accidents from 1920, when automobiles came into general use, to 1923, 5,647.

The reduction of railroad fatal accidents from 12,179 in 1911; 7,769 in 1920; 6,362 in 1921; 6,664 in 1922; 8,078 in 1923 shows the result of active campaigns for "safety first" and the discipline of those in charge of men.

The increase in fatal automobile accidents for 1911, 2,061; for 1920, 11,067; for 1921, 12,293; for 1922, 13,656, and for 1923, 15,714. This increase in fatal accidents is in part due to an increase in automobiles, but in larger measure due to incompetent and careless drivers, and in particular due to the fact that there appears to be no exercise of discipline as in the operation of railroads.

No man would be permitted to run an engine with less than four years training as a fireman, and then only after numerous rigid examinations. Any man, woman, girl or boy may run an automobile without an examination or license showing fitness, in many states. There appears to be a fatal idea among Americans that he should be permitted to do as he pleases with his own, only

to make restitution in the form of damages if he kills and has money to pay, or the right to cross a street without looking. He has also the inalienable right to disregard the street intersections and cross where he pleases.

ADDRESS OF DR. RICHARD C. MONAHAN

Northwest Medicine in a recent number publishes the address of Dr. Richard C. Monahan of Butte, president of the Montana State Medical Society.

In this address Dr. Monahan questions why the public and the state are so ready to exact service of the doctor at a minimum compensation, when his services are so essential to the business or undertaking. The question is to be answered by the medical profession itself. It is not at all strange that private enterprise, or the state itself, will accept service of the highest grade possible at the minimum market price. It is generally conceded that fees charged in private practice should have a definite relation to the ability of the patient to pay, so that all classes should have a reasonable medical service. This is a tradition that has been handed down since the practice of medicine was in the hands of priestcraft. But when it is a question of fees to corporations, to the state or sub-division thereof, when the burden falls on the general public, why should the medical profession bear the double burden of performing service at a greatly reduced compensation and also pay his share in the general distribution of cost in the form of taxes to the state or the corporation? It is the common practice of the corporation to require a contract for medical fees considerably less than the local fee rates. It is not uncommon for the state, as represented by the county, to let the public service to the lowest bidder. It is not uncommon for hospitals to assess its staff for many contributions in addition to the general support contributions which are in common with other members of the community. It may be admitted that the salaries paid by our public institutions to medical officers, together with the perquisites, are reasonable and compare favorably with similar services rendered by other public services, as officers of the courts, etc. In the army and navy the pay is based on rank and there is no discrimination against medical officers. It is to be recalled that these salaried medical officers are highly trained men and are appointed for certain definite purposes, which have only in recent years been recognized. But this includes only a small number of the great mass of physicians who render public, or quasi-public service.

These are the men to whom Dr. Monahan refers. It is true there is a great disparity between the salaries and position of the chief medical officer and chief attorney, but this is incidental and is accepted. If when the county officials advertise for bids, how many doctors put in bids? How easy it would be for the united county doctors to refuse to bid, and to arrange for some other plan for the care of the poor. If bids are made, it is the doctors' fault. If contracts are entered into for valuable practice at greatly reduced fees, it is not the corporation's fault, but the doctors' who eagerly seek the positions. If one refuses the fees offered, he is politely informed that another good doctor stands ready. How can the difficulty be overcome without organization and cooperation on the part of the medical profession?

We have no sympathy with the complaints of the medical profession that it is not better treated by the public. It is not strange that the public should get as much from the profession as possible, and will continue to do so until the medical profession organize and agree on some reasonable plan of cooperation.

It may be noted in this connection that Dr. Monahan was a Clinton county boy and was in the writer's office for a period of four years.

SURGICAL TREATMENT OF ANGINA PECTORIS

The Journal of the American Medical Association in commenting on the views of Wenckebach editorially, touching the surgical treatment of angina pectoris, publishes the criticism of Sir James Mackenzie as follows:

"The impression has got abroad that the feats of the surgeon are indications of the progress of medicine. When operations are carried out with a full knowledge of the morbid conditions which it is intended to relieve, and with the knowledge of the functions of the structures which the surgeon cuts in his operation, there might be some reason for regarding such surgery as an example of the progress of medicine; but when the surgeon is profoundly ignorant of the morbid condition for which he operates, and of the functions of the structures which he mutilates, it is impossible to conceive anything more detrimental to progress. At one time the surgeon was supposed to have a knowledge which would enable him to make not only a diagnosis but a prognosis, so that he could tell whether his interference would be to the patient's benefit. But the trend of modern medicine with its specialism is, that the surgeon dispenses with this kind of knowl-

edge and relies upon others for instructions when to operate."

Sir James furthermore says, "that the danger from angina pectoris is not from the pain, but from the condition producing the pain; that angina pectoris is due to a degenerated and worn-out heart, and while it may be that the surgeon can cut the nerves and relieve the pain, he has not influenced the disease, only destroyed the danger signal which reveals the seriousness of the condition and thus exposes the patient to increased danger by a disregard of effects which the heart cannot adjust itself to." As Sir James says, "To remove this valuable indicator—pain—in the present state of our knowledge, is to my mind extremely hazardous and bad surgery." This feeling led Sir James Mackenzie to express the above criticism.

THE GORGAS MEMORIAL

During the past year, throughout the United States, the work of organizing the Gorgas Memorial State Governing Committees has been progressing. In some states the response has been most enthusiastic, while in others considerable effort has been necessary to bring home to the doctors, the importance of this movement to them, individually and collectively. Inasmuch as the Gorgas Memorial is primarily a medical movement and as such must have the united support of the profession if it is to make the proper impression on the general public, we take this occasion to outline briefly the Gorgas plan and to request the cooperation of our colleagues in bringing to a successful issue, this national health program.

We are planning to establish a Memorial for our former chief, Major General William Crawford Gorgas, not of marble or bronze, but a permanent living organization in the form of a great health foundation typical of his work in research and curative medicine, that will unite laymen and doctors in an intelligent effort to obtain better personal health—a health guild that will be supported and directed by the representatives of curative medicine.

The Gorgas Memorial consists of two phases:

1. An institute in Panama for research in tropical diseases.
2. A health educational program in the United States and other countries that wish to cooperate and participate in the movement.

We are living in an age when people are knocking at all doors of knowledge and demanding that they be admitted. In the field of medicine who are so well fitted to meet this demand as those actually engaged in the practice of medicine? The doctors have a far more interesting and important message to deliver than any other group.

In the United States today there is scarcely a community that has not its quota of irregular "medical practitioners", so-called. In many states there are strong organizations of the representatives of the various cults, whose theories are imposed upon an uninformed public. Public ignorance is encouraged by professional reticence and the result is the astounding growth of unscientific methods. If the profession is to maintain the high standing to which centuries of labor in behalf of suffering mankind entitles it, it is essential that a definite organized effort be made to familiarize the public with such facts as will impress upon it the importance of medicine's contributions to human welfare. A constant fund of proper health information through the newspapers, magazines, lectures, moving pictures and the radio, furnished by medical men and women of known reputation and standing, will direct the public to the proper source for medical advice and gradually eliminate the irregular practices constantly increasing.

One of the objects of the Gorgas Memorial is to furnish a channel through which this kind of information may be disseminated. It cannot be done by individual physicians. It must be conducted by a dignified, ethical organization, controlled by the medical profession. The name of Gorgas is synonymous with "better health". No more appropriate name could be adopted for a movement that has for its object, the development of cooperation between the public and scientific medicine for the purpose of improving health conditions by implanting the idea in the mind of every individual that scientific medicine is the real authority in all health matters and as such should be recognized as the source of health instruction.

Before we ask the public for financial and moral support, it is essential that the doctors of the country unite in support of this program. As a means to this end, governing committees are now in process of organization, on the basis of 100 members to every 1,000,000 population in each state. Seventy-five per cent of the personnel of each committee will consist of medical men and 25 per cent of influential laymen and women. The permanent activities of the organization will be supervised by these committees in their respective states, in cooperation with the National Executive Committees.

An organization cannot operate without funds. We are endeavoring to raise an endowment of

$5,000,000, the interest only of which will be utilized to carry on the work. The principal will be invested in trust securities and remain intact. None of the money thus obtained will be spent for buildings or equipment. The Republic of Panama has donated the site and guaranteed the initial buildings and equipment for the tropical research laboratories, in recognition of Gorgas' great work in Panama. Those invited to serve as founder members of the state governing committees are requested, as they accept membership on the committee to subscribe $100 to the endowment fund, payable within two years. Every individual on the state committee is a contributing member. When the medical nucleus of the organization is complete, a general appeal for funds will be made to the public.

The American Medical Association at its recent meeting in Chicago, passed the following resolution:

"Resolved, That the House of Delegates of the American Medical Association, convinced of the great promise which the Gorgas Memorial contains of benefit to humanity through improved knowledge of preventive medicine and tropical disease, and of its peculiar adequacy, as a tribute to our great leader and sanitarian, recommend to the organized profession of the country, through its constituent state and county societies, the enthusiastic support of the project."

J. A. Witherspoon, Tennessee,
Joseph Rilus Eastman, Indiana,
Thomas Cullen, Maryland,
W. H. Mayer, Pennsylvania,
F. B. Lund, Massachusetts.

The Memorial has also been endorsed by numerous other medical and civic organizations.

Every doctor is requested to take a personal interest in the Gorgas program and to see that his community is adequately represented on the state governing committee. Each county society should appoint officially at least one of its members to serve on the state committee. This is one foundation that is controlled by the practitioners of curative medicine and as such should be supported by every practicing physician. Let us pull together, "the doctor for the doctor".

Medical Members, Board of Directors, Gorgas Memorial Institute, Executive Offices, Chicago, Illinois: Frank Billings, Gilbert Fitz-Patrick, Seale Harris, W. H. G. Logan, Samuel J. Mixter, G. H. de Schweinitz, Rear Admiral E. R. Stitt, George Crile, William D. Haggard, Franklin Martin, William J. Mayo, Stuart McGuire, Ernst A. Sommer, Ray Lyman Wilbur, Surgeon General Hugh S. Cumming, Major General Merritte W. Ireland, C. Jeff Miller, Brigadier General Robert E. Noble, George David Stewart, Hugh Young.

Officers and Lay Members, Board of Directors: President Calvin Coolidge, Honorary President, Franklin Martin, Vice President; George M. Reynolds, Treasurer; W. J. Sennett, Assistant Treasurer; Silas Strawn, Attorney; Honorable R. J. Alfaro, Brigadier General Charles G. Dawes, Bernard Baruch, Tyson Dines, W. P. G. Harding, Judge John Bassett Moore, Adolph S. Ochs, President Beliasario Porras, Panama, Leo S. Rowe, Fred W. Upham.

STATEMENT OF STATE MEDICAL LIBRARY

Present Staff

Medical Librarian—General supervising, buying, interviewing, the doing of the more exacting cataloging, indexing and research.

Assistant Medical Librarian—The correspondence and business. Also the classifying and recording of the reprint collection.

Proposed Addition to Staff

Reference and Research Medical Librarian—Reference, research and bibliographical work under the direction of the medical librarian.

Package Librarian—In charge of out-of-town circulation, which includes the handling of 150 packages per week, with a probable increase, the keeping of all shipping and individual postage records. Also entire care of book and periodical shelves.

JACK-KNIFE POSITION AFTER HERNIA OPERATIONS

The posture of the patient after an operation for hernia is usually neglected. If surgeons realized that they could reduce their recurrences materially, besides adding to the comfort of their patients, the jack-knife position would become a matter of routine for inguinal, femoral, umbilical and ventral hernias which presented difficulties in closing the fascial layers.

In inguinal hernia operations the best exposure is obtained by keeping the thigh extended until the deep sutures are ready to be tied, when it should be elevated, adducted and rotated inward. This reduces the distance between Poupart's ligament, the internal oblique and conjoined tendon from 25 to 50 per cent., depending on the size of the opening, the variety of hernia, and the development of the muscles. After the patient is returned to bed his knees and shoulders should be elevated twenty-five to forty-five degrees by means of pillows and a back rest. This position takes the strain off of the stitches during the process of repair, permits a broad firm union of fascial flaps, and reduces the percentage of recurrences. The jack-knife posture should be maintained as long as the patient stays in bed.—Leigh F. Watson, Annals of Surgery, August, 1924, lxxx, p. 239-241.

DR. GEORGE H. SIMMONS

At the San Francisco session of the Association in June, 1923, Dr. George H. Simmons, for more than twenty-five years editor of the Journal and general manager of the American Medical Association, signified to the board of trustees his desire to relinquish the responsibilities which he has so successfully borne. At the session held in Chicago last June, he was rendered a testimonial banquet at which leaders in medicine expressed appreciation of his great service in advancing medical education and medical science in America. A portrait was presented, which now hangs in the assembly room of the headquarters building, erected during the administration of Dr. Simmons. As indicated in the minutes of the board of trustees, he was elected editor and general manager emeritus to take effect at such time as he might choose; last week he departed for an extended trip to Europe and India. The Journal and the extensive enterprises of the American Medical Association will always be a monument to the editorial and administrative genius of Dr. George H. Simmons.—Journal A. M. A.

MEETING OF IOWA MEDICAL DIRECTOR'S ASSOCIATION

The Iowa Medical Director's Association met in Des Moines, November 20, 1924. The day was spent by the different medical directors of the insurance companies in going over their list of examiners in the state eliminating the members who have removed to other states and those who have died and otherwise arranging their list for the purpose of getting the best possible examiners in each locality.

After the banquet, in the evening, the members and officers of the different companies were addressed by Dr. Muhlberg of the Union Central Life Insurance Company, Cincinnati, Ohio, and the subject was "Some of the Problems of the Medical Examiner."

Dr. Stuitsman of the Merchant's Life discussed "Disability Insurance." Dr. Hunter of the Equitable Life of Iowa, discussed "Non-Medical Risks." A general discussion followed the reading of these papers.

THE RETREAT

Dear Doctor:

The Retreat Company, Des Moines, wishes to announce the opening of its new department for disturbed women patients.

The building is modern, well lighted and ventilated. The rooms are tastily decorated and suitably furnished. Both the comfort and safety of the patients have been provided for in the arrangements and equipment which includes the prolonged bath.

While we do not accept noisy, violent or destructive patients we can now offer the most suitable and desirable treatment for excited and agitated patients without interfering with the care and treatment of the quieter, more cooperative and appreciative patients in the other departments.

The diagnostic facilities are entirely adequate. The nursing service is of the highest type. The therapeutic measures include rational medication, proper diet, physiotherapy, occupational therapy, regulated exercises and diversion by means of games, music, automobile rides and other forms of entertainment.

When convenient visit The Retreat and make a personal inspection of its equipment.

The Retreat Management.

SOCIETY PROCEEDINGS

Buena Vista County Medical Society

The Buena Vista County Medical Society held its annual meeting at the Bradford Hotel November 21. A 6:30 dinner was served and the regular business of the society discussed. All the old officers were re-elected as follows: President, Dr. Morrison of Alta; vice-president, Dr. Delahunt of Marathon; secretary and treasurer, Dr. E. F. Smith of this city. Dr. Smith has been secretary and treasurer of the organization for the past fifteen years.

Carroll County Medical Society Meeting

The Carroll County Medical Society had their annual meeting on Tuesday, December 16. After a six o'clock dinner, they met in the club rooms of the Carroll Commercial Club, and the following scientific program was presented:

Urology—Dr. Clifford Losh, Des Moines. Dr. Losh, explained the method of injecting the kidneys and ureters with solutions of sodium-bromide—or with sodium-iodide, as is the practice of some urologists, in order to make more accurate diagnosis of the diseases of the urinary tract. He then presented slides showing x-ray pictures of kidneys and explained how the diagnosis was made. He then gave the doctors a very practical talk on pyelitis.

Modern Conceptions Concerning the Heart—Dr. M. M. Myers, Des Moines. Dr. Myers gave a very interesting talk on the modern conceptions concerning the heart, with special reference to the latest discoveries as to what causes the heart to beat. He also gave a very practical method for the classification of heart diseases. Dr. Myers stated that it had been discovered that electricity was the motivating agent that caused the heart to contract. These electrical impulses originated in the sino-auricular node, passed from thence through the fibers of the auricles and reached the ventricles through the Bundle of Hiss and connecting fibers.

After the scientific meeting, officers were elected as follows: Dr. C. E. Wolfe, Carroll, president; Dr. Alois Kessler, Carroll, vice-president; Dr. Jesse B. Hudson, Carroll, secretary-treasurer; Dr. Sidney D. Martin, Carroll, delegate; Dr. Orrin W. Wyatt, Manning, alternate.

In addition to Doctors Losh and Myers, Dr. Frank

Fordyce and C. G. Throckmorton, executive secretary, of Des Moines, were also present.

Fayette County Medical Society

October 16 a meeting was held by the Fayette County Medical Association at the county home. An interesting clinical session was held. Dr. Brody of the State Hospital at Independence, and Dr. C. B. Luginbuhl of Des Moines, were present. Dr. Brody conducted the clinic on insanity and Dr. Luginbuhl illustrated his lecture on intestinal diseases with slides. There were some twenty-four Fayette county doctors present, and the session was preceded by a banquet prepared by Mr. and Mrs. Smith, steward and matron of the home. The decorations were the work of Mrs. Smith.

Hardin County Association

The annual meeting of the Hardin County Association met at Eldora November 1. Drs. Myers and McKinley of the University of Minnesota and Dr. Gatewood of Iowa University, gave interesting discussions. The officers for the coming year are: Dr. Nyquist, Eldora, president; Dr. Mangin of Iowa Falls, vice-president; Dr. Wray, Iowa Falls, treasurer, and Dr. Marsh, Eldora, secretary.

Keokuk County Medical Society Meeting

The Keokuk County Medical Society held a meeting on Thursday, December 18, at Sigourney, at which time the county society was re-organized and officers elected. After a twelve o'clock dinner, the doctors and their guests repaired to the Memorial Hall, where the following scientific program was presented.

Modern Conception Concerning the Heart, with Special References to the Diagnosis of the Heart Disease—Dr. M. M. Myers, Des Moines.

Rabies, with a Report of a Fatal Case—Dr. T. A. Moran, Melrose.

Infantile Paralysis—Dr. T. B. Throckmorton, Des Moines.

Peptic Ulcer, from the Standpoint of the Country Doctor—Dr. Wm. H. Rendleman, Davenport.

The papers presented by the guests appearing on the scientific program were very well received, as each of them had a direct bearing upon the conditions usually found in country practice. After the scientific program the following officers were elected: Dr. Porter, Hedrick, president; Dr. W. W. Stirlen, Delta, vice-president; Dr. John Maxwell, What Cheer, secretary-treasurer; Dr. A. P. Johnson, Sigourney, delegate; Dr. X. Corso, Sigourney, alternate.

This meeting was under the direction of Dr. S. T. Gray, councilor, of Albia, who had devoted considerable time in assisting the members of this society in securing a program, and whose counsel and advice were of material benefit in effecting the reorganization. Following are the guests and members present at this meeting: Dr. S. T. Gray, councilor, Albia; Dr. Wm. H. Rendleman, first vice-president, Davenport; Dr. Tom B. Throckmorton, secretary, Des Moines; Drs. X. Corso, E. B. Hoeven, W. W. Eastburn, Wm. Pfannebecker, A. P. Johnson, F. Adrian, T. G. Dulin, Sigourney; Drs. W. W. Stirlen and Dell F. Grothaus, Delta; Dr. J. A. Porter, Hedrick; Dr. John Maxwell, What Cheer; Dr. T. A. Moran, Melrose; Dr. M. M. Myers, Mr. C. G. Throckmorton, executive secretary, Des Moines.

Linn County Medical Society and the Cedar Rapids Dental Society

Nearly two hundred physicians and dentists attended the joint meeting of the Linn County Medical Society and the Cedar Rapids Dental Society November 13 at Hotel Montrose, Cedar Rapids.

The two professions were represented from Waterloo, Iowa City, Marion, Vinton, Monticello, Anamosa, Belle Plaine, Central City, Lisbon, Mt. Vernon, Atkins, Williamsburg, Traer and Oakdale, about thirty-five visitors being present.

Dr. E. E. Iron of Chicago, dean of Rush Medical College, spoke on Focal Infections and Their Relation to Systemic Disease. Dr. L. J. Curry of Waterloo and Dr. F. J. Rohmer of Iowa City, physicians, discussed this talk, as did Dr. J. H. Calder and Dr. J. S. McGowan of Cedar Rapids, and Dr. Fenton of Iowa City, from a dental standpoint.

Dr. George F. Suker of Chicago, spoke on The Importance of Pupilary Reactions in Diagnosis of Systemic Disease, illustrated by slides. This was discussed by Dr. F. W. Bailey, Dr. H. H. Jones and Dr. H. E. Pfeiffer of Cedar Rapids.

Dr. William H. Redmond, president of the medical society, presided. A buffet supper was served following the lectures.

Scott County Medical Society

The Scott County Medical Society met October 7 at the Chamber of Commerce at 8 o'clock.

Dr. G. W. Doolan was elected to membership. He is at present city physician, following the resignation of Dr. Braunlich.

The society will hold, under the auspices of the American society for the control of cancer, a cancer week, in December, either the first or the second week. The general plan will be to have physicians and laymen give talks on the early recognitions and prevention of cancer. The stress will not be placed on the cure, but on the recognition. The idea will be to go before every civic club, every woman's club, charitable organization, and other societies in the city with the information. It is expected that some of the highest recognized authorities in the country will come to Davenport the week and hold clinics which will be open to the public, under the care of their own doctor, and the visiting specialists will only advise.

American Society for the control of cancer has special exhibits, posters, lithographs, easles, and stands to show the effect of early cure of cancer. There are also several moving picture reels that will

be shown. An eminent authority will speak the last night, at a public meeting.

The program had as special speaker, Dr. Walter L. Bierring of Des Moines. He gave a talk on Edema in Nephritis, telling of the medical and surgical treatment, and discussed in detail two very striking cases which he had treated, and the results.

This was followed by discussion led by Dr. John I. Marker.

Dr. Louis A. Buie of the Mayo Clinic at Rochester, Minnesota, gave a talk on Proctology in General Practice. He discussed the method of examination, treatment of various diseases of the rectum, and stressed practically the necessity for rectum examination. He showed lantern slides to demonstrate. This lecture was followed by discussion led by Dr. A. P. Donohoe.

Dr. P. A. White gave a report of the recent epidemic of infantile paralysis in Clinton. The first case was reported August 5, and four cases occurred the next week, five the next, and the remainder came along in rapid succession during the next two weeks. There were thirty-five cases in all in the epidemic, and the unusual feature of the affair, was that there was no death occurred.

In only one case did definite paralysis develop. There were some that showed a muscle weakness. Where no treatment is given for paralysis practically 100 per cent of the cases are at least partially paralyzed and usually 20 per cent of them die. However, in this case, there were no deaths, and only one case of developed paralysis. The serum of Dr. E. C. Rosenow of the Mayo Clinic in Rochester, Minnesota, was administered to each child, with the above happy results. If the serum is given early in the first few hours of the disease, the paralysis does not develop, and the infant changes from a very sick child to a better condition.

Some of the early symptoms of infantile paralysis are high temperature, stiff and sore neck, pains in the head, and muscle pains over the body, showing that spinal puncture should be done. If it is infantile paralysis, the cell count will be increased.

This is the only epidemic of the last five years in which there has been no death.

Scott County Medical Society

The last meeting of the Scott County Medical Society was held at the Chamber of Commerce, Davenport, November 14, 1924. Election of officers resulted as follows: Dr. Geo. Braunlich, president; Dr. Wm. Goenne, vice-president; Dr. Paul A. White, relected secretary; Dr. S. G. Hands, reelected treasurer; Dr. Paul A. White, new delegate; Dr. D. J. McCarthy, censor. Dr. A. P. Donohoe is holdover delegate with another year to serve, while the other censors are Dr. B. H. Schmidt, and Dr. J. D. Blything, with one and two years respectively to serve. The new delegate was elected because the society has eighty-two members which gives it the major fraction of the second fifty.

Motions were made to indorse the clinic to be held by the Iowa Tuberculosis Association in Davenport under the auspices of the Scott County Medical Society, Visiting Nurses Association, and the County Health Association on November 21. Dr. John H. Peck of Des Moines is to give the demonstrations. The Xmas seal sale of the Iowa Tuberculosis Association was indorsed and the personnel of the society placed at the disposal of the County Xmas Seal chairman. A committee composed of Drs. Foley, Ott and Donohoe was appointed to arrange for the January social dinner-dance which was such a brilliant success last January when almost the whole membership and wives met for a delightful evening. The committee reported the plans for holding Cancer Week December 7-12, the last date named to be the next meeting of the county society when a speaker of prominence will address a public audience.

Dr. Fred Smith, professor of medicine, Iowa University, successor to Dr. Howard, gave an address on Progress of Valvular Heart Disease, discussed by Drs. Rendleman, Helmholz, Weber and Donohoe. He made a very favorable impression and the best wishes of the society were extended to him in his new work.

Dr. Henry F. Helmholz, head of section on pediatrics, Mayo Clinic, talked on Etiologic Factors in the Chronic Pyelitis of Childhood, discussed by Drs. Ott, Rendleman, Lamb, Senty, and Blything. He made a plea for the careful search for congenital or acquired anatomical or pathological changes producing the trouble when it does not clear up under ordinary measures.

Dr. Paul A. White, Sec'y.

Webster County Medical Society

Doctor Fred M. Smith, professor of medicine, University of Iowa, gave to the Webster County Medical Society, November 11, an address from his Observations on the Prognosis of Chronic Valvular Heart Disease.

On November 25, Doctor J. S. Lundy of the Mayo Clinic, will give a paper to the same society, on Ethylene Anesthesia.

I have noted that some of the communications concerning matters of the Webster County Medical Society have been addressed to the former officers of the society. I am enclosing our present program.

J. F. Studebaker, Sec'y.

Program, 1924, Webster County Medical Society

Meets every Tuesday night at eighty-thirty o'clock at Commercial Club, Fort Dodge, Iowa.

Officers—A. A. Schultz, president; T. J. Dorsey, vice-president; J. F. Studebaker, secretary-treasurer.

September 16, 1924—Tuberculosis of the Spine, Dr. F. L. Knowles.

September 30, 1924—Technic and Value of Skin Protein Test, Dr. A. G. Asher.

October 7, 1924—Electro-Therapeutics, Dr. W. R. Turner.

October 14, 1924—Acute Abdomen, Dr. A. N. Thoms.

October 21, 1924—Hydatidiform Mole, Dr. W. W. Bowen.

October 28, 1924—Vascular Hypertension, Dr. W. C. Porath, Varina.

November 4, 1924—Business, Dr. W. J. Donovan.

November 11, 1924—Observation on the Prognosis of Chronic Valvular Heart Disease, Dr. Fred M. Smith, Professor of Medicine, University of Iowa.

November 18, 1924—Toxemia of Pregnancy, Dr. E. C. Kepler, Pocahontas.

November 25, 1924—Ethylene Anesthesia, Dr. J. S. Lundy, Mayo Clinic.

December 2, 1924—Surgery of Stone in the Kidney, Dr. H. W. Scott.

December 9, 1924—Carcinoma of Cervix, Dr. E. M. Kersten.

December 16, 1924—Operative Treatment of Hemorrhoids, Dr. A. E. Acher.

Four County Medical Society

Dr. M. J. Joynt, Dr. W. T. Shepard, Dr. W. W. Larson and Dr. A. McPhaden attended a meeting of the Four County Medical Society, Buena Vista, Ida, Cherokee and Plymouth at Cherokee November 19. About thirty physicians were present and enjoyed a banquet at the Hotel Lewis. A business session was held at the state hospital where a five film piece dealing with medical subjects was shown.

Officers for the ensuing year were elected: Dr. Morehead, Ida Grove, president; Dr. J. H. O'Donogline, Storm Lake, vice-president, and Dr. M. J. Joynt, Le Mars, secretary.

Northwestern Iowa Medical Society

The Northwestern Iowa Medical Society met in their regular fall meeting at the Arlington Hotel in Sheldon, Friday, November 7. A banquet was held at 7:00 after which the meeting was called to order and the following program given: Dr. K. A. Sporre, Harris, spoke on Pyelitis; Dr. Frank S. Hough of Sibley, on Safety, Simplicity and Sanity in Surgery; Dr. E. Pfeiffer of Hartley, on Transverse Myelitis, and Dr. Daniel G. Lass, Ocheyedan, on Infantile Convulsions. The annual election of officers took place, Dr. Hand of Hartley being elected president; Dr. Wagner, vice-president and Dr. J. W. Myers of Sheldon re-elected secretary and treasurer. Due to the inclement weather the attendance was small, only about twenty doctors being present.

Iowa Clinical Medical Society

The regular quarterly meeting of the Iowa Clinical Medical Society was held at St. Luke's Hospital, Cedar Rapids, November 24. Following a program of cases presented by local physicians, the delegates were entertained at a luncheon in Hotel Montrose. The afternoon was spent in discussion of the cases presented in the morning clinic.

The following doctors were on the program: Dr. R. L. Sheldon, Dr. Morgan Foster, Dr. L. M. Downing, Dr. F. G. Murray, Dr. P. B. Welch, Dr. A. W. Erskine, Dr. H. L. Winkle.

The following out-of-town members were present: Dr. F. A. Ely and Dr. P. C. Doolittle, Des Moines; Dr. F. H. Lamb, Dr. J. I. Marker and Dr. E. G. Senty, Davenport; Dr. C. A. Van Epps, Dr. F. J. Rohmer, Dr. W. E. Gatewood, Dr. D. V. Conwell and Dr. Graber, Iowa City; Dr. C. A. Waterbury, Dr. J. W. Roundtree and Dr. Nelson of Waterloo; Dr. H. V. Scarborough of Oakdale; Dr. E. T. Eggerly of Ottumwa; Dr. J. C. Shellito of Independence, and Dr. A. A. Johnson of Council Bluffs.

MEDICAL NEWS NOTES

Dr. Frank P. Young, prominent Los Angeles physician, was found guilty of charges of fraudulent issuance of diplomas in connection with the Pacific Medical College of which he is the head and his license to practice medicine in California was revoked by the state medical board of examiners.

During the hearing Prof. William P. Sacks, former official examiner for the superintendent of public instruction in Missouri and jointly indicted with Young in San Francisco for alleged conspiracy in connection with the asserted operations of the so-called diploma mill ring, admitted on the witness stand that while employed by the state of Missouri, he issued more than 1,500 "fake" elementary school credentials and diplomas purporting to be for courses completed in schools and colleges, for which he received $10 each without ever seeing the party to whom the credentials or diplomas were issued.—Clinton Herald.

A scale of fees has been fixed by the Medical Society of the District of Columbia.

Minimum fees range from $2 for minor office calls to $300 for certain major operations. Maximum fees for similar service range from $10 to $5,000. Charity work is permitted, but doctors are not otherwise to deviate from the scale, except for good cause.

The importance of a case, and the responsibility attached to it are considered in placing the maximum fees. It was pointed out the scale will allow persons of moderate means to obtain the best medical skill at a cost within their reach.

An example is the fee for a small-pox vaccination, where a minimum of $2 and a maximum of $25 is fixed. General visits range from $3 to $25, and the removal of an appendix may cost from $100 to $5,000.

New School of Tropical Medicine

"There is a new drive inaugurated by many powerful scientific foundations, operative all over the world. Their campaigns will be expensive and extensive.

"Highly significant and important among these is the new School of Tropical Medicine in Porto Rico. The formal organization will incorporate the clinical work and existing facilities of the former insular Institute of Tropical Medicine and Hygiene which was the outgrowth of the Porto Rico Anemia Commis-

sion headed by Colonel Bailey K. Ashford, Medical Corps, United States Army, which in 1904 began a campaign that successfully treated over 300,000 cases of what the world has since elected to call 'hookworm disease.' * * * "

"Dr. Ashford states: 'An arrangement has been made between Columbia University and the Insular Government of Porto Rico by which, with the Institute of Tropical Medicine and Hygiene of Porto Rico as a nucleus, a School of Tropical Medicine will be founded in San Juan, Porto Rico, under the administration of Columbia University.'

"The school opened November 1. The first session will be centered in the Institute of Tropical Medicine and Hygiene, pending the erection of an appropriate building for which moneys have been appropriated by the Insular Government."—The Outlook.

Dr. Mon Tah Chung is leaving in the near future for Peking, China, to accept a teaching position in the department of neurology of the Peking Union Medical College. Dr. Chung graduated from Harvard in 1922 and secured the certificate of the National Board of Medical Examiners in 1923.

Other diplomates of the National Board who are on the faculty of the Peking Union Medical College are Dr. Kuang H. Li, a graduate of the University of Pennsylvania School of Medicine in 1919, and Dr. Sheo N. Cheer, a graduate of the Johns Hopkins University Medical Department in 1920.

In an address to present and former physicians of the Mayo Clinic, Dr. W. J. Mayo said: "We are trying to turn out specialists and all-around scientists wholesale in our medical schools, and we are merely burning up a lot of young men. It can't be done. Medicine is liable to become an aristocratic profession; so stiff is the expense and so long the course. I believe we must come to a time when all higher specialties will be taught in the graduate departments.

"Heads of medical schools should think twice before giving prizes to leading students, because those in the rear are liable to be just as good. Let us graduate a good garden variety of doctors and then take those who have vision and spirit and put them in the graduate schools. The idea of taking all students and making them all specialists has gone too far."—Davenport Democrat.

We have a bit of interesting information concerning the doctors of Des Moines in the nature of income taxes paid. We tried to add up the amount, but became confused and gave it up. We found 107 paying income taxes, ranging from $3 to $4,481.11. The total sum is somewhat less than $100,000,000, but we should say that Des Moines was not a bad place to practice medicine.

Dr. C. A. Abbott, Oskaloosa's "radio-medico wizard", who has been practicing there for some twenty years and who claims graduation from the University of Kentucky with an M.D. degree, is the same Dr. Abbott, who was expelled from the Mahaska county medical society in May, 1923.—Globe Gazette, Mason City.

The Council Bluffs Clinic laboratory has been accepted as an auxiliary laboratory to the laboratories for the state board of health.

This recognition is due to the facilities and equipment of the laboratory, and to the personnel of the laboratory. Dr. Aldis A. Johnson is in charge of the work.

Physicians and health officers can use the results of this laboratory to establish and release quarantine and as a basis for all other official action.

This service will be rendered by the Council Bluffs Clinic Laboratory on the same basis as that of the laboratories at Iowa City.

HOSPITALS AND NURSES

United States Civil Service Commission, Washington, D. C.

The commission believes that the appended announcement will interest many of your readers who may be desirous of taking an examination for the federal civil service. Any publicity you may give this item of news will be appreciated.

U. S. Civil Service Commission.

UNITED STATES CIVIL SERVICE EXAMINATION

The United States Civil Service Commission announces the following open competitive examination:

Trained Nurse and Trained Nurse (Psychiatric)

Examinations for trained nurse and trained nurse (psychiatric) will be held throughout the country on January 21, 1925, to fill vacancies in the Panama Canal Service. The entrance salary for female nurses is $120 a month and for male nurses, $125 a month. The entrance salary for female nurses (psychiatric) is $135 a month and for male nurses (psychiatric), $140 a month. Promotion of $5 a month is made at the end of each year of service, until a certain maximum is reached.

For the position of trained nurse, applicants must have been graduated from a recognized school for trained nurses and have had at least three years' experience in a modern, well-equipped hospital, including the experience prior to graduation; or (in the case of male applicants) in lieu of such graduation and experience, they must have served at least one three-year enlistment in the Hospital Corps of the United States Navy or have had at least three years of active service in the Hospital Corps of the United States Army.

For the position of trained nurse (psychiatric), applicants must have been graduated from a general hospital or a hospital for the care of the insane, and

have had at least one year's experience, since graduation, in a hospital for the care of the insane.

Competitors will be rated on questions in anatomy, physiology, hygiene, and nursing; and education, training and experience.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the board of U. S. civil service examiners at the post office or customhouse in any city.

Miss Augusta Hefner, Sioux City, was reelected as first vice-president of the Iowa State Association of Registered Nurses, at the closing session of the annual convention held at Des Moines.

Six hundred Iowa nurses were in attendance at the twenty-first annual convention of the Iowa State Association of Registered Nurses at Des Moines. In addition to the program, a pageant "History of Nursing", was presented by the nurses of the Des Moines hospitals, and a number of luncheons and a theater party were held. Miss Josephine Creelman, superintendent of nurses of the local University Hospital, presided at the luncheon for the Nursing League and private duty nurses at the Harris-Emery Tea Rooms. A discussion of problems of student nurses followed the luncheon.

A bond issue of $80,000 to defray the expense of an addition to the Scott county public hospital will be placed on the market December 10 at 10 o'clock.

Dr. H. E. Stroy of Chicago has purchased an interest in the F. W. Sells hospital.

From a force of 22,000 volunteer nurses maintained in the army nurse corps throughout the World War the number has been reduced for peace time to 900, including both those on duty in the military hospitals, and the student nurses in the army nursing school at Washington, D. C., Major Julia Stimson, superintendent of the army nurse corps, stated.

Miss Adah Hershey of Des Moines was reelected president of the Iowa State Association of Registered Nurses at the closing session of the convention at Hotel Fort Des Moines. Miss Hershey is superintendent of the Des Moines public health nurses. Other officers reelected were Miss Augusta Hefner, Sioux City, vice-president; Miss Winifred Boston, Cedar Rapids, second vice-president; Miss Blanche Edwards, Waterloo, secretary, and Miss Margaret Hehnke of Keokuk, treasurer.

Graham hospital has been given a bequest of $1,000 by the late Miss Lucretia Huiskamp, according to her will which has been filed. A like amount has been given to Pundita Ramabia for work for the child widows of India, and $500 was left to Rev. Robert G. Dixon of Cliftondale, Massachusetts, for certain work.—The Gate City, Keokuk.

Miss Sara O'Neil of Sioux City was elected one of the three members of the state nurses board at the meeting of the state nurses association at Des Moines. Miss O'Neil is a graduate of the school of nursing of St. Joseph's Hospital.—Sioux City Journal.

The fourth annual conference of Iowa at Mercy Hospital, Davenport, was the most successful in history. Twenty-nine Iowa hospitals took part, Bishop E. D. Howard celebrated solemn Pontifical mass and delivered the sermon and welcome. At the closing business session the following officers were elected: President, Sister Mary Clare, Marshalltown; first vice-president, Sister M. Rita, Waterloo; second vice-president, Mother Gertrude, Sioux City; third vice-president, Sister Mary Mechtildes, Davenport; secretary-treasurer, Sister Mary Jeanne O'Arc, Sioux City; executive committee, Sister Mary Thomas, Des Moines; Sister Mary Aquinas, Davenport; Sister Mary Edward, Cedar Rapids. A great deal of credit for the success of the conference is due Rev. P. J. Mahan, S. J., vice-president of the Catholic Hospital Association and Dr. L. D. Moorchead, dean of Loyola Medical College, Chicago for their untiring efforts and devotion in directing the conference.

Thirty physicians of the Mercy Hospital staff, Dubuque, were present at the annual staff meeting and banquet held at Mercy Hospital. Officers were elected. Dr. H. E. Thompson was chosen president. Other officers elected were: Vice-president, Dr. J. R. Guthrie; secretary and treasurer, Dr. A. M. Loes.

Services for the laying of the cornerstone of the new Methodist Hospital which is being erected at Twenty-ninth and Douglas streets, Sioux City, were held before a crowd of several thousand people, including many out of town church members and ministers from the Northwest Iowa Conference of the Methodist Episcopal Church, as well as the pastors and representatives of the Methodist churches of Sioux City.—Sioux City Tribune.

Dedication of the new eighty-five room Allen Memorial Hospital at Waterloo, took place Saturday, October 25, at 2:30 p. m. Rev. J. H. Bauernfeind, Chicago, presided. C. D. Cass, Waterloo, president of the board of trustees, made the presentation of the Deaconess Society and Dr. J. S. Stamm of Evangelical Theological seminary, Naperville, Illinois, delivered the address of acceptance.—Nonpareil, Council Bluffs.

Announcement is made that a sisters' hospital is to be erected in Creston, the ground and building involving an investment of $100,000.

Dr. C. W. Harned is one of the seven Des Moines specialists who are opening a polyclinic hospital at the corner of Tenth street and Grand avenue, Des Moines. Dr. C. W. Harned will have charge of the

head and neck department; Dr. R. R. Morden, will be general surgeon; Dr. A. P. Stoner, has the department of orthopedics; Dr. L. M. Scruby, department of obstetrics; Dr. W. W. Hannsell, department of genitourinary diseases; Dr. H. B. Brock, department of orthodontia; Dr. A. M. Merritt, department of the eye. The institution is modelled after the famous Mayo brothers institution at Rochester, Minnesota, and the purpose of the hospital, as outlined by its founders, is to bring to Des Moines a group of specialists whose constant attendance at the hospital will enable any patient to have the services of the entire group to determine the nature of the physical ailment. The clinic grew, as many other hospitals of a similar nature in the United States did, out of the group practice of physicians. These groups, which eventually became the clinics, were formed for better diagnosis of disease and for the betterment of the practice of medicine generally.—Des Moines Capital.

Building operations on the new St. Joseph Hospital at the head of Vogel Avenue began October 22. Mother M. Liguori of the Order of the Humility of Mary turned the first spadeful of dirt shortly after 2 o'clock. The contract for the rough work on the re-enforced concrete structure was let to the Immel Construction Company of Fond du Lac, Wisconsin.—Ottumwa Courier.

Work on the new Lutheran Hospital at Fort Dodge has progressed very rapidly and all plans are now complete for the laying of the corner stone on Sunday, November 2.

A number of sisters and doctors affiliated with St. Joseph's Hospital, Sioux City, attended the Iowa conference of the Catholic Hospital Association of the United States and Canada, at Mercy Hospital, Davenport, November 12 and 13. Representative hospital workers from this and other states took part in the program. The Catholic Hospital Association, of which the Iowa conference is a state branch, has recently sponsored an affiliation with Marquette university of Milwaukee, Wisconsin, a hospital college for scientific training of the various hospital workers, including administrators. This is only a part of the educational effort that is under way among the Catholic hospitals of the United States and Canada, representing more than 50 per cent of the hospital bed capacity of both countries.

PERSONAL MENTION

Dr. John H. Peck of Des Moines, director of the clinic department of the Iowa Tuberculosis Association, was honored with a dinner given by physicians of the tri-cities at Hotel Blackhawk, Davenport, November 21. About forty physicians and nurses of the tri-cities attended.

Dr. Walter J. Connell, who recently resigned as assistant city and county health director to enter private practice, has been appointed part time milk and dairy inspector, Dr. D. C. Steelsmith, health director, announced. Dr. Connell will fill the vacancy caused by the recent death of Dr. F. W. Wieland.—Tribune, Dubuque.

Dr. W. A. Rohlf of Waverly, held an audience of 500 Oelwein citizens spell-bound for one hour and a half recently in his address on the Hospital at Ridler's Hall.—Des Moines Register.

Dr. A. J. McLaughlin was elected commander of Monahan Post, American Legion, at the annual meeting. He succeeds Dr. C. T. Maxwell, who served as commander of the post for the last year.

Dr. and Mrs. Senska and daughter, Frances Maude, who have been in Africa the past three years in missionary work sailed from Duala, Africa on November 17 for New York by way of Bordeaux, France. They expect to be in Eldora by Christmas time. Dr. Senska has been granted a furlough, which is the custom every three years as white people need to have a change of climate about that often. Dr. Senska's health has not been particularly good lately which is an additional reason for their coming at this time. They will visit in the home of Mrs. Senska's mother, Mrs. W. L. Herrald.—The Herald, Eldora.

Dr. John F. Morse, appointed as new medical superintendent of Iowa sanitarium, Nevada, to succeed Dr. Scoles, who goes into foreign mission fields, has arrived to take up his new duties. Dr. Morse is a graduate of the University of Illinois, a licentiate of the Royal College of Surgeons of Edinburg, Scotland, and a fellow of the American College of Surgeons. For ten years, Dr. Morse was a member of the staff at Battle Creek (Michigan), sanitarium. He spent ten years in general practice in Porto Rico and also acted as assistant surgeon in the United States public health service in charge of the quarantine station at Guanica, Porto Rico. For the last four years he has been located at Hinsdale sanitarium at Hinsdale, a suburb of Chicago.—Ames Tribune.

On Tuesday, November 4, Dr. G. V. Caughlan, who for the past four and one-half years served as Captain of Company I, received from Governor Kendall through Adjutant General Lasher his commission as major of the Third Battalion of the 168th Iowa Infantry. Under the same date came a commission which raised Lieutenant Carl H. Cook to the Captaincy of Company I. Major Caughlan fills the vacancy made by the appointment of Major Everest of Council Bluffs to the staff of Major General Tinley and has under his command the companies at Council Bluffs, Red Oak, Neola, Corning and Glenwood. This is no small honor which has come to our fellow citizen who so justly deserves this recognition. As captain of Company I, he has by his active interest in the company brought it to the fore ranks of the National Guard of Iowa, in point of efficiency and membership. Major Caughlan has brought honor to Company I and to this community and both are justly proud that he has re-

ceived this recognition. Captain Cook states that by next week they expect some changes in the commissioned and non-commissioned officers alike in Company I.—Opinion, Glenwood.

Five health officers were appointed by Governor Kendall today to be members of the newly created board of health. They are Dr. H. L. Saylor, Des Moines; Dr. M. L. Williams, Oskaloosa; Dr. H. R. Sugg, Clinton; Dr. D. W. Hays, Sioux City, and Dr. C. W. Stewart, Washington. The state board of health, under the law passed by the extra session of the general assembly, becomes operative the second Tuesday in January, 1925. Members serve for two years.—Journal, Washington, Iowa.

In recognition of his public service as health officer of the city of Clinton during all except two years since 1912 and his efficient handling of public health questions and epidemics during that period, Dr. H. R. Sugg has been appointed a member of the reorganized Iowa state board of health by Governor N. E. Kendall according to a letter received by Dr. Sugg this morning. The appointment came to Dr. Sugg unsought and is a result of recommendations made by state health officers who have come into contact with Dr. Sugg during his years of service to the city. Dr. Sugg will continue to administer the duties of his office as city health officer and will retain his residence and practice in Clinton, the duties of his new office requiring only occasional trips to the state capital.—Clinton Herald.

Dr. Lee Wallace Dean has returned from New York City, where he read a paper on the "Treatment of Otitic Brain Abscesses", before the American College of Surgeons.

Dr. William von M. Gerard, acting foot surgeon of the Iowa National Guard, has returned from Omaha, Des Moines, and Sioux City. The doctor saw one of the best of the polo games between army posts at the Aksarben field in Omaha.

Dr. M. L. Turner has returned from Rochester, Minnesota, where he attended the meeting of the Central States Pediatric Association. He also visited the clinic at the University of Minnesota.

Dr. J. W. Dixon received a telegram stating that his son, Dr. George Dixon, would arrive in Burlington to join him in the practice of medicine here. He has been away from Burlington eleven years. He was in the medical school at the State University of Iowa at Iowa City for seven years, spent two years in the war and has been connected with the Harper Hospital at Detroit, Michigan, for the last two years, getting some practical experience.

Dr. Sophie H. Scott entertained the Women Physicians Club Wednesday evening at a 6 o'clock dinner given at her home, 1300 East Grand avenue. Covers were arranged for Drs. Alice Hatch, Jennie Coleman, Helen Johnston, Grace Doane, Margaret Nelson, Julia Hill, Nelle Noble and the hostess. Dr. Ross of Whittier was an out of town guest.

Dr. D. J. McCarthy, prominent Davenport surgeon, will speak before the members of the St. Ambrose Pre-medic Society at Davis hall. He will tell of his experience as surgeon with the Serb army in the Balkan states during the World War. His talk will be strictly technical, dealing with the medical situation alone. This is the first lecture arranged by the Pre-medic society. It is planned to have a number of talks given during the winter months.

Dr. W. D. Madden of Pocatello, Idaho, locates in Clinton for the practice of medicine.

MARRIAGES

Dr. Walter Brazie of Harlan and Miss Mona Black of Auburn, Nebraska, were married at Council Bluffs, October 28. Dr. Brazie is a graduate of the Nebraska University School of Medicine.

Dr. Grace Doane Cowl of Des Moines, and Dr. Ray L. Lee, also of Des Moines, were married November 20. Dr. Cowl is associated with Dr. W. W. Pearson of Des Moines.

OBITUARY

Dr. Lee Weber died at his home in Davenport, Iowa, October 15, 1924.

Dr. Weber was born near Columbus, Wisconsin, October 12, 1870; received his preliminary education at the University of Wisconsin and entered the office of Dr. Beebe as a medical student. At the expiration of one year he entered the College of Physicians and Surgeons, Chicago (now the Medical School of the University of Illinois). After graduating in 1895, he secured an internship at the State Eye and Ear Infirmary at Chicago, on the completion of which, after fourteen months' service, he located in Davenport in July, 1896.

On September 11, 1901, he married Miss Anne Louis Corner, who, with one daughter, survives him.

Dr. Weber was a member of the Scott County Medical Society, the Iowa State Medical Society, the American Medical Association and the Iowa and Illinois District Medical Association. He was also a member of many civic societies, particularly of the higher orders of Masonry.

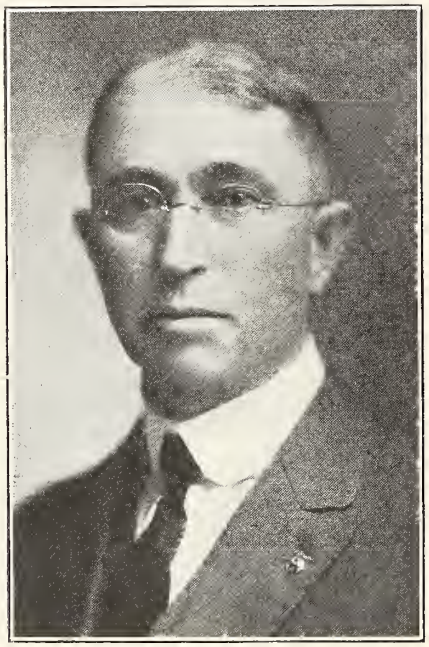
Dr. Weber devoted his professional energies to a practice limited to diseases of the eye, ear, nose and throat, in which he had reached a high degree of efficiency.

The following was read before the Kiwanis Club of Davenport, October 16, 1924, by Dr. W. H. Rendleman, Davenport:

"My last visit with Dr. Lee Weber was a few hours before his death. He was cheerful as always in spite of the fact that he knew as well as I the seriousness of his trouble. He knew the type of angina pectoris, from which he suffered only three days, meant death in no great length of time. Unfortunately, the physician when he comes to his last illness knows only too well what the outcome will be. In spite of this knowledge Dr. Weber braved death as he had met other difficulties in life more easily overcome.

"Dr. Weber was brought up on a farm in Wiscon-

sin, in a family of modest means, the youngest of ten children. He borrowed the money to obtain his collegiate and medical education. He was in the true sense a self-made man. His medical education was obtained at the College of Physicians and Surgeons in Chicago which school has since become the medical department of the University of Illinois. Dr. Weber was upon the roll of honor while in college.



DR. LEE WEBER

He then received appointment, through competitive examination, as interne to the State Eye and Ear Infirmary of Illinois. After his hospital service he located in Davenport in 1896 to practice his chosen specialty of Eye, Ear, Nose and Throat diseases. That he has been successful is evidenced by the esteem of his patients and colleagues.

"Working against odds as a boy he also as a man had great difficulties to overcome. Several years ago he all but lost his life from a virulent infection which finally left him with a badly mutilated and deformed right hand. This was a handicap the significance of which can only be understood by a surgeon whose success depends on the dexterity of his hands. With a fortitude characteristic of the man he persisted until the apparently useless hand was finally educated to do the most delicate operation. Such a handicap was enough to break the spirit of the bravest. Not only did the infection leave its mark on his hand but also on his heart, no doubt having much to do with its final breakdown.

"As a physician he is honored by all his colleagues. In a profession where personal jealousies and envy grow rankest, in a profession the nature of which brings its members into closer personal contact perhaps than any other, in a profession where animosities are stirred to the utmost, his coolheadedness and composure were to be marveled at. I have never in our nineteen years of association heard him make a derogatory remark about another member of the profession. Neither have I heard any of his colleagues speak of him in any but the highest terms.

"As a citizen he has always been held in the highest esteem. His modest way has prevented him from having the large acquaintance of some but those of us who knew him learned to appreciate that modesty is a jewel all but lost in this age of blatant egotism. He supported movements for civic betterment, did his bit in the World War on the Medical Advisory Board and has since then given his services to the citizen's training camp. His activities with the boy scouts and in masonry are well known.

"His habits were clean, his tastes simple. He was modest and unassuming, led a quiet life and got his greatest pleasure with his family. His greatest usefulness has been as a father and husband. Anyone who had the slightest acquaintance with him knew of his devotion to his family. He was an ideal father and associate of his children. To his son, Lee, he was a brother and chum, to his wife a devoted husband and companion. Home to him was everything and all his life activities revolved about it.

"I have not said of Lee Weber what I would like to say and not half of what I feel. You all knew him well and it is not necessary. That he should be taken from us in the prime of life at the early age of fifty-four is a loss which is hard to bear. Our sympathy goes out to his family who will miss him most. Of him it may be truly said, 'To know him was to love him.'"

Resolutions adopted at the meeting of the Scott County Medical Society regarding the death of Dr. Lee Weber, who passed away October 21, 1924:

"The Scott County Medical Society formally assembled pauses in deepest reverence to pay tender respect to the memory of Dr. Lee Weber whose absence from our midst is keenly felt.

"The passing of one of our active, loved, and respected members impresses us that life is after all but a narrow span and leads us to look for the good, the noble, the lovable qualities which were in his nature. It teaches us tolerance toward one another and bids us look for the admirable characteristics to which we now pay homage in our departed member, in each other, while we yet live.

"We give expression to our deeply felt sorrow that he should be withdrawn from our midst at the height of his career of usefulness to our Society and to the community. We convey to the sorrowing family our heart born sympathy mingled with gratitude that we have been privileged to share with them the life which has passed to the great beyond but which will ever remain an example and inspiration to our Society."

Dr. Charles B. Adams, forty years a practitioner of medicine at Sac City, died at his home at the Perkins apartments in Sac City on Tuesday afternoon, October 21, 1924.

Charles Beecher Adams was born in Geneseo, New York, in 1859. He graduated from New York University in 1879 and from the medical college of Ohio State University later. Following his graduation he taught anatomy in the Ohio State University. In 1882 he was married to Miss Lilla B. Ruggles of Whitehall, Michigan, who survives him.—Sac City Sun.

Dr. F. W. Wieland of Dubuque died October 27, 1924.

Dr. Wieland was born in Switzerland and immigrated to America at the age of eight years. The family settled on a farm near Lancaster. He attended Rush Medical College, graduating in 1887 and had practiced in Dubuque practically ever since. At various times he was connected with the city health department, and of late had acted as dairy inspector in addition to his private practice.

In 1896 he was married to Miss Clara Jungk who survives him with four children.

BOOK REVIEWS

INTERNATIONAL CLINIC

A Quarterly of Illustrated Lectures and Especially Prepared Clinical Articles on Various Branches of Medicine and Surgery. Edited by Henry W. Cattell, A.M., M.D., Philadelphia; Vol. IV-33. J. B. Lippincott Company.

The first section of this number is devoted to a symposium on Gastrointestinal Ulcers, by Dr. Mathew J. Stewart of Leeds, England; Dr. Searle Harris of Birmingham; Dr. Samuel Danon of Geneva, Switzerland, and Drs. Groover, Christie and Merritt of Washington, D. C., considered from the morbid anatomy early diagnosis, its relation to epigastric hernia and the roentgen examination. Under these heads the points of diagnosis are fully presented by masters in this branch of medicine.

Under the division of Diagnosis and Treatment are three important papers. In Medicine four contributions, Pediatrics two, Obstetrics two, Surgery four, Morbid Psychology one. Medical Economics, by Dr. James J. Walsh of Fordham University, which prcsents points of special interest in relation to fads which so frequently confront the medical practitioner.

Under the head of Ophthalmology and Otology there are two papers. The last is the Alvarenga Prize Essay on Echmococcus Disease.

The contributors to this interesting number are distinguished writers in special branches of medicine in this country and in Europe. The publishers of these clinics have selected with great care foremost men of eminence in the medical centers of the world, which gives the publication an international character, thus furnishing the medical reader with a view of medicine as practiced in all the great countries of the world.

THE SCIENCE AND ART OF ANESTHESIA

By Colonel William Webster, D.S.O., M. D., C.M., Professor of Anesthesiology, University of Manitoba Medical School; Chief Anesthetist, Winnipeg General Hospital; Illustrated. The C. V. Mosby Company, 1924. Price $4.75.

The author announces in the preface that the purpose of this book is to furnish the physician and the occasional anesthetist with a work that will fit him for general service. In other words the profesional anesthetist would likely consult the larger book. This seems an excellent idea for the general practitioner is frequently called upon to give an anesthetic without much special training.

Two chapters are given to the history of anesthesia and the physiology of anesthesia, followed by several chapters on the different anesthetic agents and the methods of administration. After considering the different anesthetics agents and mixtures, advice is offered as to the selection of an anesthetic for special operations and purposes. This is a very important section of the work, as there can be no doubt that the success of an anesthesia is in a considerable measure dependent upon the proper selection of an anesthetic for the particular operation.

Chapter sixteen is devoted to the consideration of surgical shock which the anesthetist has much to do with in an operation.

The question of postanesthetic acidosis is of such importance that the author devotes a chapter to its consideration.

The book has much to recommend it, in that it furnishes the physician in general practice with a helpful guide in this particular work which must come to him from time to time.

SOCIAL CONTROL OF THE FEEBLEMINDED

A Study of Social Programs and Attitudes in Relation to the Problems of Mental Deficiency. By Stanley P. Davies, Ph.D.

Present day considerations of the problems of feeblemindedness were first brought to widespread public notice as warranting immediate and definite attention, with the beginning of the present century. Two elements had each their own part in bringing this about, namely, the movement along eugenic lines with reference to heredity and Mendel's law, and the development and application of definite methods of testing intelligence, with particular reference to the Binet-Simon procedure.

On the one hand, heredity was thought to be, in a large percentage of cases, working out in accordance with the Mendelian law, while the use of intelligence tests brought to light a class of high-grade feebleminded individuals to whom the term moron was applied. When the army psychological tests were given, many such persons were rejected, and the figures given out caused surprise as showing that a large proportion of all persons of subnormal intelligence were found, not in institutions but at large in their various communities, with the further discovery

that many of such individuals fell into the class of chronic or petty offenders against social order.

It was stated that every high grade imbecile was a potential criminal, and segregation and institutional care was advocated by men prominent in the study of these unfortunates. What the author terms the "alarmist stage" was reached by 1915, and even earlier, and various remedies were discussed to relieve the situation; mainly, segregation and sterilization. Laws providing for the latter program were passed in some states but were never very much utilized, and the tendency is now toward disuse of such methods, partly on humanitarian grounds, doubt as to diagnosis and prognosis, and changing ideas upon the relation of heredity to feeblemindedness. Further study showed also that not all the cases needed segregation or institutional care either on their own behalf or in the interest of the community.

As the discussion of heredity in this relation progressed, doubt was expressed as to the trait of feeblemindedness coming under the Mendelian conception of a unit trait, and this phase is fully discussed by the author. Also certain types have been found to be susceptible of training and assistance which has enabled them to recover, in part at least, their places in society. Among the agencies showing the results of such training, the author cites the efforts at Waverly, Massachusetts, by Dr. Fernald; the colony plan at Rome, New York, and elsewhere. The story of these results makes interesting reading, and gives hopes of further improvement. The chapter on "The Public School and the Backward Child"; and final chapters on "The Socializing Process", and on "The Feebleminded in the Social Order", are also full of suggestions, one of which briefly stated is that there is a distinct place in modern industry for those who can master simple routine processes, are not ambitious, and do not resent subordination. This can be vouched for by many employers, and by many workers in the field of psychiatry.

Reynolds.

DISEASES OF THE EYE

New (10th) Edition. A Handbook of Ophthalmic Practice for Students and Practitioners. By George E. de Schweinitz, M.D., LL.D. Professor of Ophthalmology in the University of Pennsylvania. Tenth Edition, Reset. Octavo of 865 Pages with 434 Illustrations and 7 Colored Plates. Philadelphia and London. W. B. Saunders Company, 1924. Cloth, $10.00 Net.

The ninth edition of this book appeared in 1921. Needless to say that in the three years which have elapsed since the appearance of the last edition there have been many advances in our knowledge of ophthalmology and that these advances have been exceptionally rapid is shown in this edition. The author states that the revision includes useful and important observations which have appeared in recent ophthalmic literature, as well as certain statements and recommendations, modified or emphasized, as the case may be, based on his personal experience.

Numerous subjects appear for the first time. Three paragraphs are devoted to each of the following subjects: The Diaphragm Lamp; Sunlight as a Source of Illumination in Ophthalmoscopy as pointed out by Dr. Edward Jackson; Ophthalmoscopy with Red-free Light; Striate Clearing of Corneal Opacities, with three excellent illustrations of W. T. Holmes Spicer; Extraction of Cataract by Suction (Barraquer's method). One paragraph is devoted to each of the following new subjects: Contact Illumination; Binocular Visual Acuteness, and Illumination and Acuteness of Vision; Uveoparotitis; Hernia of the Vitreous; Senile Changes in the Optic Nerve; Temporary Amaurosis in Infants; Butyn; Subconjunctival Excision of Ptergyium; Tendon Transplantation; Muscle Recession with Scleral Suturing; O'Connor's "Cinch Shortening" Operation; Agricultural Conjunctivitis. Simple Centric Ophthalmoscopy is only mentioned with a reference to the original article. The book contains thirty-three more pages and nineteen more illustrations than the previous edition. The chapter on Skiascopy by Dr. Edward Jackson has been rewritten. The index is complete and contains fifty-three pages.

This edition bears throughout evidence of careful and thorough revision. The subjects are handled in a systematic way and the definitions and explanations are clear and concise. It is up-to-date and contains much new and accurate information in readily, accessible form and should be in the library of every one interested in ophthalmology.

E. P. Weih.

THE HUMAN TESTIS

Its Gross Anatomy, Histology, Physiology, Pathology, with Particular Reference to its Endocrinology, Aberrations of Function and Correlation to Other Endocrines, as Well as the Treatment of Diseases of the Testis and Studies in Testicular Transplantation and the Effects of the Testicular Secretions on the Organism. By Max Thorek, M.D., Surgeon-in-Chief American Hospital; Consulting Surgeon Cook County Hospital, 308 Illustrations. J. B. Lippincott Company, Philadelphia and London.

This book of 548 pages is a work requiring great patience and industrious research to bring to us a vast amount of knowledge, widely scattered, much of which is recent.

The anatomy and histology may be found in works on these subjects, but the physiology, or better, testicular secretions, is much of it of more recent date in development. The same is true of the pathology of the testis, therefore the author has presented two rather extensive chapters on these subjects to bring our knowledge to date.

Under the head of Dystrophias brings much of our newer knowledge, which is considered under the following divisions:

(Continued on advertising page xxix)

The Journal of the Iowa State Medical Society

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THE PHILOSOPHY OF SURGERY*

Hubert A. Royster, A.B., M.D., Raleigh, N. C.

"Man philosophizes as he lives. He may philosophize well or ill, but philosophize he must."
—Sir W. Hamilton.

The art of surgery is as old as the need of man or other animals for relief from injury and disease. The science of surgery has been a gradual growth founded upon organized knowledge gained by experience in its practice. What we mean by the philosophy of surgery might be expressed as the fine adjustment of the higher instincts upon the nth power of surgical art and science.

Philosophy, literally the love of wisdom, generally is regarded as a gift of age and ripened thought, but it can be cultivated at any period of existence. In its full development it represents a lingering process, not so much in the amount of time involved in its acquisition as in the satisfying quality of its possession. Above most men, the surgeon needs the philosophical spirit, the worship of wisdom, the love of learning. Upon these attributes, and upon none other, is founded that cool, rational and temperate judgment, combined with the desire to search into the reason and nature of things, altogether essential in the surgeon's make-up.

Not for one moment should it be held that my stand is for a theoretical philosophy. Metaphysics it shall not be. For we must escape Voltaire's definition: "When the man to whom you speak does not understand, and when the man who speaks does not understand himself, that is metaphysics." Rather will philosophy speak to us through the voice of performance. Through its acts the art of surgery may show forth its real purpose.

All great art represents something that it sees or believes in. How true that is of surgery! It sees what is actually accomplished—and more—what is intended; it believes in what is to be done. It is difficult to conceive of surgery without the vision and without the faith, whereby the people may not perish and righteous confidence be not removed from the earth.

Supreme trust in himself and his art is the sheet-anchor of the surgeon, whether he be great or small, whether his work be much or little. One would hesitate to subscribe to a saying attributed to Bernays, that every good surgeon should be possessed of a high conceit; but we might need a huge measure, if we ever dared to survive the test of a series of disastrous cases coming thick and fast at the very start of our careers, as did one of the greatest surgical teachers this country has ever known, when he first substituted for his chief. But faith there must be and it is of such stuff that fame is made; not the blind belief in ourselves which makes us dream of infallibility, but that which causes us to follow the slogan, "Only a fool makes the same mistake twice,"—and then to confess that we have even done that. Those surgeons who commit no errors are suffering either from a paucity of experience or a pitiful disregard of facts. To feel after finishing an operation, that one could do it much better if it had to be done over again is the true test of a progressive surgical conscience.

Not all the best surgery is accomplished in the largest clinics or by the busiest operators. Sometimes, on the contrary, a great bulk of cases seems to preclude excellence of individual work, save in those establishments where the growth has been gradual and where men have acquired particular training for particular tasks. Physically—and, indeed, mentally and morally—surgeons are capable only of so much good work as these three capacities will allow. Beyond this limit, they proceed at the peril of the patient. In the words of Havelock Ellis, "Where there is most labor there is not always most life, and by doing less, provided only he has known how to do it well, the artist may achieve more." To apply this, it is sufficient to say that the surgeon who counts is not always the one who is doing the most work, but the one who is doing the most of the best work. This thought is expressed with no de-

*Address in Surgery before the Iowa State Medical Society, Des Moines, May 8, 1924.

sire to dampen the ardor of the ambitious surgeon, nor with any intent to glorify the "occasional operator". The former is seeking to give the largest service possible and to perfect himself by practice, arduous and fatiguing though it be; the latter is attempting to perform now and then certain duties with which he is none too familiar. Between these there is a philosophical setting known only too well to those who recognize their limitations; who are content to do conscientiously what comes to them; who can be cautious without being timid, conservative without being dilatory, courageous without being unsafe.

In every true surgeon there is a constant effort to strike a proper balance between judgment and technic, between diagnosis and management, between pathology and performance. Unfortunately the perfect blending of these qualities is rarely seen in the same person. There will be more likely either a finished operator with little knowledge of surgical theory, or a profound surgical pathologist showing no manipulative skill. Technic in surgery is often applied solely to the actual movements of hands and instruments during the operation, mere manual dexterity; when it should be used to include the whole method—the artistic execution, even the preparations and conduct and atmosphere. Here surgeons will demonstrate their personalities and their temperaments, their moods and their manners. An operation is a serious affair, but hardly to be made into a solemn spectacle, unless the surgeon be a downright pessimist. The hope that springs eternal looks for the good to come out of it, and expresses itself in buoyancy, not in irreverence; in joyous enthusiasm, not in unbecoming levity.

When we say that there are many good operators but few good surgeons, we are paying our respects to pathology, diagnosis and judgment, the three basal elements of successful surgery. They represent the "what", the "whether" and the "when" of our art, while technic shows the "how", a requisite none the less important, if more mechanical. The gist of it all is that our prime object is the restoration of the patient and that whatever department of surgery is directed toward that end constitutes a beneficent art, whether it be in research, in experimentation, in teaching or in practice. Perhaps it is well that one man seldom tries to compass all those talents within himself, for he should scarcely succeed. But there is service enough to go around, and there is a niche for each to fill. He who knows himself, and devotedly takes his station contributes to the great fulfillment. "Blessed is the man who has found his work."

Every one of us must be interested in the economics of surgery. Either as principal or dependent, as patient or operator, as friend or citizen, the practice of surgery touches us somewhere in our lives. We are tremendously concerned with the saving element in surgery. Waste is a sin and economy a virtue in whatever circumstances they may be found. Nowhere is this more evident than in the affairs of surgery. Whatever brings about proper economical relations before, during and after operations is worthy to be secured. Economy may be effected in time, labor and material. The factor of time is very far-reaching: the matter of getting at the affair promptly; the question of completing the operative seance speedily; shortening the number of days a patient may spend in bed and away from his duties, the period consumed in convalescence and the final restoration to normal conditions. Saving of labor comes about through efficient arrangement in reducing to a minimum all efforts for taking care of patients so that the smallest number of attendants may be demanded, and that they be given the simplest duties to perform, commensurate with the case; through the omission of unnecessary orders, stripping them to the barest and simplest form. Economy in the matter of material must become a habit of mind before it can be realized; for the most atrocious wastefulness is exhibited in the use of dressings, sutures and apparatus, not to speak of water and fuel. Our rubber stamp text-books and our stereotyped teachers have brought about an overdone set of rules, which leave no room for human judgment, and make for cut-and-dried use of a definite number of dressing layers, a certain length for all ligatures, and special instruments for every step, regardless of the character or purpose of the operation, or of the conditions under which it must be done. There is a good deal of using a club to kill a gnat. One might cynically suspect that, if the wasteful operators were required to pay for all material used, or just the surplus over and above actual necessity, some hospitals could have more means to extend their usefulness.

There have been three big epochs in surgery, and they have all related to economics. During the first, we operated to save life; then we operated to save health; now we operate to save time. In the early days, patients came late; their cases were desperate and everybody was happy—if only some might live. Later on, restoration to health after more or less prolonged treatment was the goal. In the present period surgery saves time because its aid is invoked earlier and the results are correspondingly more profitable; and

few things could be more valuable than time, especially when it carries life and health in its train.

The sanity of surgery is put to the test when it becomes necessary (as it does at every turn), to decide whether, upon a given diagnosis, plus advised operative methods, the expected results may be obtained. Hereon hangs the key owned by the master surgeon. And prudent is he who knows that the really important problem is to connect symptoms, findings and consequences, and that prognosis is a deeper and more difficult art than diagnosis. The surgeon more and more will seek to avoid operations rather than point with pride to the number he performs. Too many operative procedures are contemplated or executed in the absence of just reasons for them, and too many surgeons exist whose philosophy leads them to believe that because an operation can be done, it ought to be done. Never was there a greater fallacy. It is also true that numbers of patients needing operations are unwilling to have them performed, or are never brought to the surgeon. These might counterbalance the other series, but the duty of the surgeon must not consciously become disordered. If only a portion of the needful cases should appear in the beginning, many operations might be prevented and the patient restored by mechanical, medicinal or hygienic means. There is such a thing as preventive surgery, and it may be that finally the highest achievement of surgery will be to avoid surgery. Furthermore, the love of wisdom will teach us that an operation is only the beginning of getting well, the removal of the lesion, and that the ultimate recovery of the patient is to be obtained through supervised after-care, competent medical management and correct living.

Surgical thinkers have been few and far between. Original work is being done by many, continually new problems in surgery are being solved; but the independent minds, those who have done their own thinking, may be counted on the fingers of your two hands. The immortal names of Pare, Haller, Cooper, Lister, Sims, Gross, Fenger, Kocher and Halsted stand out above their fellows. They thought out their plans and toiled to prove them. They remain the mental aristocrats of our craft, philosophers of surgery, devotees of the creative impulse. Think of attempting to standardize them, to democratize their intellects! In our efforts today to erect uniform standards, we are in danger of becoming disciples of mediocrity. This is true of general education, as well as of surgical development. In order to bring up the general average of surgeons, the brilliant genius is apt to be held back so that the drab plodder may be lifted up, and the result is a dead level of machine-like ability, acquired through so many units of a curriculum and supplemented by so many years of routine training. Better by far have fewer surgeons of transcendent capacity than an innumerable array of surgical routinists, surfeited with training, but short on talent. This is no plea for the restriction of surgery to the favored few, nor a recognition of the divine afflatus; for perhaps surgeons are made after they are born. The endowment of surgery may be congenital, but the clinical upbringing and the constant doing of it count for much more. The difference between the man of mark and the hack worker is in the ability of the former to discriminate, to apply a broad principle to a particular problem, to formulate clear mental processes. Surgical issues cannot be mastered in the aggregate, nor settled by statistics. They are to be brought down to the personal equation of the individual, and this without isolation, but with a keen self-responsibility. The advice of E. W. Howe seems relevant: "A person who cannot succeed without being in a herd, ought to organize his own herd. My advice to a young man is to learn to pitch in and fight his battles single-handed. Sheep and goats run in droves, but lions and tigers do not."

Some of the matters pressing for consideration in surgery are bound up in what may be termed border-line cases, those on the vanishing point between surgery and medicine. Except for the difference in management, we all meet on common ground and with a common purpose, for in the bright lexicon of diagnosis, there is no such word as medical or surgical. Organs like the thyroid gland, the stomach, the gall-bladder, the prostate gland and conditions such as abdominal ptoses, malignant diseases and the obscure chronic infections are worthy of the most liberal study by both physicians and surgeons in closest association. Who can say through what opening will come the flood of light destined to illumine the dark spots yet existing in our knowledge of these subjects? It matters not whence this light comes, so that it prevails. In his own sphere the surgeon must hold his course straight for the truth, whether he shall find it on his operating table or locate it through the barrel of his microscope. Now and then the most interesting cases in surgery are those that are not surgical. They awake within us the spirit of search and furnish us the inspiring occupation of working out a problem disinterestedly for the sake of the sufferer.

The sum of our philosophy is this: the surgeon will do well to bear in mind that his mission is to restore, if he can, and only to destroy, if he must;

that his duty is to keep sweet in the midst of both success and of disaster, of praise and of censure —and the smaller his habitation, the sweeter he should keep; that moral courage is a more precious asset than physical prowess and that it often requires more bravery to desist from an operation than to proceed with it; that sordid commercialism in any degree will corrupt his professional life and poison his soul, be it the buying and selling of patients or other debasing financial practices; that it is his privilege to perfect himself in the science and art of his calling to the end that he may be of use both in knowing and in doing, not omitting to tune his conscience and his judgment to the highest pitch; that individual thinking, combined with an understanding and a concurring spirit, will bring the largest benefit; and that he must carry on his career in his own way, emulating, not imitating, the best he finds in others who have passed along the road.

Our ideal surgical philosopher will seek these aims—and higher than these may he reach. Not much higher could he climb than the conception thus portrayed by the noble Guy de Chauliac: "Let the surgeon be well educated, skillful, ready and courteous. Let him be bold in those things that are safe, fearful in those that are dangerous; avoiding all evil methods and practices. Let him be tender with the sick, honorable to men of his profession, wise in his predictions, chaste, sober, pitiful, merciful; not covetous or extortionate, but rather let him take his wages in moderation, according to his work and the wealth of his patient and the issue of the disease and his own worth."

ARTERIAL HYPERTENSION; ITS SIGNIFICANCE AND ITS MANAGEMENT*

WILLIAM A. JENKINS, M.D.
Profesor of Medicine and Clinical Medicine, University of Louisville, Medical Department, Louisville, Kentucky

The attempt to evalute arterial hypertension, to account for its presence, and to determine its relationship to pathologic changes found in the various organs and tissues of the body is a question that has occupied the best minds in the medical profession for many years. And, while much progress has been made, and definite knowledge has been obtained, it may safely be stated that we are still far from the final and conclusive answer to this whole question.

The modern clinician in his daily work has been keenly alive to the practical phase of the subject. He sees the actual condition in all of its manifestations in his patients. The medical physiologist and the research worker have likewise conducted many elaborately planned and carefully and scientifically supervised experiments with the end in view of unraveling some of the intricacies and determining some of the basic principles which underlie this perplexing question. That the representatives of the above mentioned classes of workers have contrived to at least keep themselves occupied, is attested by the flood of literature that has appeared during the last decade in the journals devoted to clinical, experimental and research medicine. It is quite evident that a legitimate and logical consideration of this subject should begin primarily with the cardiovascular system.

Conditions of the heart muscle and the arterial system, insofar as their relation to arterial hypertension is concerned, are fairly well understood. There is more or less harmony and agreement among medical men regarding these matters. Such is not the case however when we come to the consideration of the capillaries. In the past relatively little importance was placed on the part played by the capillaries, either in normal physiologic processes or from the standpoint of their possibly being a starting point of pathology, which might ultimately affect the cardiovascular system as a whole, as well as the organs fed by this same system. Formerly we thought that the control of the motor mechanism of the capillaries was identical with that of the arterioles. We considered that the sympathetic system controlled contraction of the capillaries and that fibres through the posterior spinal roots caused relaxation of the same. This was only a part of the truth. Some substances, such as adrenalin, will cause contraction of the arterioles but does not influence the capillaries at all. It now appears to be proven beyond doubt that the capillaries can contract and dilate independently of pressure variations in the arterioles. The trend of scientific opinion is now towards the belief that there is a purely local control mechanism for the capillaries. Said variations in control are brought about by action through a certain type of cell found in the capillary walls which is analogous to the unstriped muscle fibres of the arterioles. These cells are known as the "Rouget" cells. Physiological variations to meet certain demands, such as the contraction and relaxation of muscles at work, may take place over very wide spread areas. The same is true of the internal organs of the body while they are in a state of physiologic activity. It is not improbable that some type of hormone may be found to play considerable part in this

*Read before the Inter-State Assembly of the Tri-State District Medical Association at Des Moines, Iowa, October 29, 30, 31 and November 1, 1923.

activity. This gives us a new conception of the possibilities of the work of the capillaries, especially when we consider the enormous extent or area of the great capillary beds.

Considerations as far reaching and possessed of such potentialities as the above may in the not far distant future present us with some entirely new and highly important facts which will tend to give to the capillaries an importance equal to, if not greater, than that of the heart or arteries in all conditions where the blood vascular system is implicated. We are indebted for at least the major part of the above mentioned clues and facts to Professor Krogh of the University of Copenhagen, whose original and scientific researches, together with his conclusions, will be found in detail in his various publications.

Etiology

In a study of the literature of this subject we find the factors enumerated as having a causative influence are about as follows: Hereditancy; Diseases of the Nervous System; Endocrine Disturbances; The Menopause with its natural endocrine aberrations, worry, stress and overwork; and lastly, Toxines. The latter may be bacterial, metabolic, or chemical in derivation.

(1) *Hereditancy*—We all know that in a certain degree, both mental and physical traits, or peculiarities, are handed down from parent to offspring following a well known natural law "like begets like." We do therefore inherit a certain tissue type, a vulnerability or susceptibility, on the part of a particular structure or organ. This tendency, as a matter of course, is almost negligible, when we consider our subject from its practical side.

(2) *Diseases of the Nervous System*—While it is true that certain diseases of the nervous system tend to be accompanied by an increase in blood-pressure, it is likewise true that this pressure is not of the sustained type. It varies with the other symptoms and usually subsides with improvement in the underlying condition. Hence we are not warranted in considering nervous diseases as a factor of any particular importance in causing permanent high blood-pressure.

(3) *Endocrine Disturbances*—This new field of endeavor, or rather this old field, in which a new and consuming interest has recently sprung up, has been very generously called upon to explain almost all the ills to which human flesh is heir. Oftentimes in women, at that peculiar period of physiological upset, viz., the menopause where we have as an accompaniment a disturbed action of both the ovaries and the thyroid, which is easily recognized, we do have also a period of high blood-pressure. Certain cases of pure hyperthyroidism (exophthalmic goiter) will also exhibit a type of hypertension. Yet these cases are comparatively few in number. They differ essentially in type from the condition under discussion. The blood-pressure rise is variable, not constantly present, and in no way resembles a case of essential hypertension. Therefore we cannot give the endocrines an important etiological role in our discussion.

(4) *Worry, Overwork and Stress*—It would be hard indeed to conceive of any primary or direct method, or way by means of which worry, overwork, or stress could produce the condition in question. At most they could only act as a contributory factor by paving the way for the real underlying or exciting cause.

(5) *Toxines*—It is a well known clinical fact that certain toxines carried by the blood stream are capable by prolonged action of bringing about a permanently high blood-pressure and likewise changes of a sclerotic nature in the blood-vessels themselves. As to origin, these toxines may arise from disease producing microorganisms (animal or vegetable); they may be metabolic in origin, or they may, at least in part, be the result of the prolonged action of certain chemical substances.

Bacterial toxines primarily derived from acute infections remaining present and acting over long periods of time, or from focal infections, concealed or obvious constantly feeding toxines into the circulation, would probably by popular vote head the list as causative factors in the condition under consideration. There can be no doubt about this matter whatever. The connection is too direct and convincing. The majority of our doctors who have practiced medicine for twenty-five years can recall a number of cases in which every phase, every step, every symptom and every detail could be easily and distinctly traced; a good part of the process perhaps having enacted itself under the direct observation of the family doctor. Take the toxine of syphilis as an outstanding example. Here we are dealing with a toxic substance derived from a microorganism belonging to the animal kingdom. This toxine has a notoriously well known predilection for the entire blood vascular system. It may invade any part or the whole of this system. It usually shows all of the clinical symptoms and even its pathology bears the ear-marks of, and can be recognized as, the result of syphilis, and so it is with many well known pathogenic microorganisms. Skilled and experienced laboratory workers have repeatedly produced blood vascular changes by in-

troducing bacteria and bacterial products intravenously into rabbits.

Toxines of Metabolic Origin—Here the connecting links are a bit harder to visualize perhaps, yet the end result is just as convincing as it is in the case of the bacterial toxines. Protein fractions and closely allied substances are now known to be toxic in the human body under certain conditions. Many scientific observers, such as Doctor Victor Vaughn believe that the toxic powers of bacteria are due to their protein fraction content, rather than to any distinctive specificity inherent in the bacteria themselves. Metabolism is a great study and it is yet in its infancy. We have only a very meagre knowledge indeed of the intricate and profound changes which take place in the anabolic and catabolic phases of the metabolic curve. This highly efficient and very delicately organized chemical laboratory is easily thrown out of gear. Improper foods, more intake in food than the organism can burn up. Any long continued interference with the processes of oxidation or elimination, any strictly internal interference with the physiological action of certain of the highly organized body cells may serve to bring about certain strictly endogenous or inborn errors of metabolism which may be very far reaching in their consequences, while at the same time our knowledge of either these factors themselves, or their mode of action, would be practically nil.

Perhaps a homely example would serve to illustrate the part disturbed metabolism plays in cardio-vascular disease. Mr. A., twenty-five years of age, country born and bred, strong of wind, lithe of limb, slender of waist, pink of cheek, the picture of health. A stranger to venereal disease, no serious illness in his past record; he comes to the city and goes into an office; he climbs rapidly, he is a demon for work (night and day) he marries an ambitious society girl, begets a large family, grows rich, becomes a power in the community, and has many important interests. He has no time he says for exercise, rest or recreation, "plenty of time for them after a while." We see him again at age fifty, twenty-five years later, he looks old, his skin is yellowish white, or sallow, he is bald, his abdominal measurement is several inches greater than his chest measurement, he is short of breath on slight exertion, he smokes almost constantly, he is worried, and sleeps little. All that he has left of the heritage that he brought from the country with him is a good appetite, and that is now a curse to him as he can not possibly burn up half that he eats. His blood-pressure is constantly high, systolic 160 or 180, diastolic 110. No albumin in his urine yet. A typical case of essential hypertension, or hyperpyesia (if that means anything to you) caused by perverted metabolism in its broadest and most comprehensive sense.

Laboratory experiments are described in the literature in which a series of individuals presenting first degree hypertension were placed on a diet containing an excess of nitrogenous products for periods of a few weeks. The blood-pressure was not raised and the blood chemistry did not show any accumulation of nitrogen split products. The percentages of urea, uric acid, and creatinin remained unchanged. Such experiments however prove nothing. If metabolic factors acted with sufficient rapidity to produce changes in the time limits mentioned above, the whole history of the disorder under discussion would be changed. The condition would be an acute, rather than a chronic one and the death rate from cardiovascular conditions would be increased perhaps 50 per cent. It takes many years for metabolic factors to produce changes of any consequence. Cases such as the one cited above are neither uncommon or overdrawn. Their name is legion. Sometimes the symptoms vary a bit, the gastrointestinal tract may be the chief offender; the individual has had intestinal symptoms for years: gas, indigestion, constipation, mushy foul stools, indicanuria, etc. On the other hand, we may observe a type of man, a mental worker let us say, he has no bad habits, neither drinks or smokes, his venereal history is negative, yet he presents arterial hypertension. We may find that this man does not know what the word exercise means. He is thin, dried up, dessicated, constipated, he drinks very little water, he has frequent headaches, etc. The catabolic phase of his metabolic curve will be found badly deranged, and so it goes.

To verify the above we know that certain of the Chinese working classes, and likewise the laboring classes of India, very commonly reach an advanced age in a fair state of health and show no particular hypertension or advanced arterial changes. They have no bad habits. They commit no excesses. Their food is of the simplest and it is taken in quantities sufficient to meet their bodily needs. They metabolize well. The anabolic and catabolic phases balance each other nicely.

Many observers lay great stress on salt intake as a factor in increasing blood-pressure, while others are not impressed by the matter. Recent experiments by O'Hare and Walker at the Peter Brent Brigham Hospital demonstrate that there is no dependable relationship between blood chloride and high arterial pressure. We may

have normal blood chloride and high arterial tension and conversely, we may have high blood chloride and low blood-pressure. Toxines carried by the blood stream are the chief exciting causes of cardio-vascular diseases. All other factors may be classed as contributory or predisposing causes.

Symptomatology

The progress of the condition by stages. Perhaps I can best illustrate my meaning by diagrams. Let diagram No. 1 represent the first stage of hypertension. Here the diastolic pressure runs between 90 and 100, most of the time around 90. While the systolic pressure runs anywhere between 150 and 180, most of the time nearer 160. Toxines carried by the circulation increase the tonus of the small blood-vessels, perhaps chiefly the cappillaries. This makes an increase of peripheral resistance to overcome which the heart and arteries must do more work, hence the increase in systolic pressure. We may call this the physiologic stage. The stage that is most amenable to management. There may be no pathology, certainly no grossly demonstrable pathology. As times goes on we come to the second stage, represented by diagram No. 2. In the second stage of hypertension we find the diastolic pressure running around 110, sometimes slightly below the line, most of the time however, it is more liable to be slightly above the line. The diastolic pressure is now showing a tendency to become fixed, or to express it more clearly, it rarely falls, usually it slowly rises. While the systolic pressure may run anywhere from 150 to 180, practically never falling below 150. Now we have constantly present toxines in the blood, changes in the composition of the blood, slowing of the blood stream, distention of the vessels, plus the added factor of mechanical strain, all of which induces nutritional changes in the walls of the blood-vessels with consequent thickening, beginning most commonly in the subendothelial layers of the tunica intima resulting in invasion of the other coats and ending in a more or less widespread arterio-capillary fibrosis. This process is exactly what the old English observers, Sutton and Gull, described, and they called it arterio-capillary-fibrosis. Thoma in his studies called this angio-sclerosis. This whole process of course requires many years for its establishment. It gradually and constantly progresses. For convenience of study only, I have suggested an arbitrary division into stages. In the earlier part of this stage the individual has, as a rule, no voluntary complaints. He may express himself as "feeling fine," possibly he comes up for life insurance examination, the examiner finds his blood-pressure too high, his kidneys may appear to be all right, as interpreted from one urinalysis. It is to this type of case that certain men apply the term essential hypertension, or, hyperpyesia. Why? Simply because they cannot feel any hardened arteries or demonstrate any gross pathology. Most life insurance men hold that a systolic pressure that remains constantly above 150 is pathologic. Personally I am firmly convinced that they are correct.

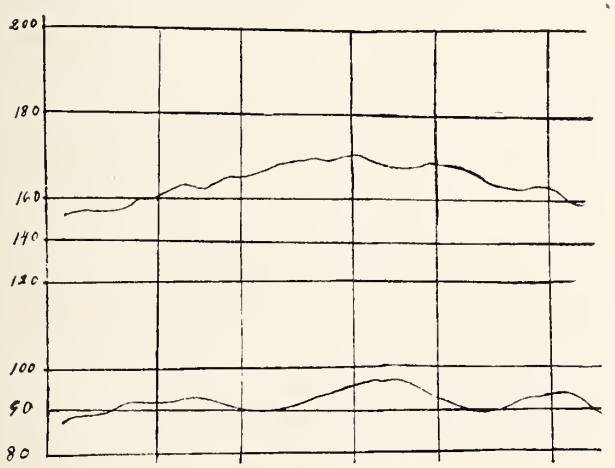

Diagram 1. First Stage

Sir Clifford Allbutt reports a case of hyperpyesia which afterward came to autopsy. Findings as follows: "hypertrophy and dilatation of the heart, interstitial fibrotic thickening of the liver and kidneys, with arterio-sclerotic changes in both the liver and the kidneys." Diagram No. 3 represents the third stage of hypertension. Here the diastolic pressure runs between 120 and 140, average 120 to 130. While the systolic pressure may vary anywhere from 180 to 220, or occasionally much higher, most of the time however falling between 190 and 220. In this stage the underlying condition is now fully developed, and we can best understand its total symptomatology,

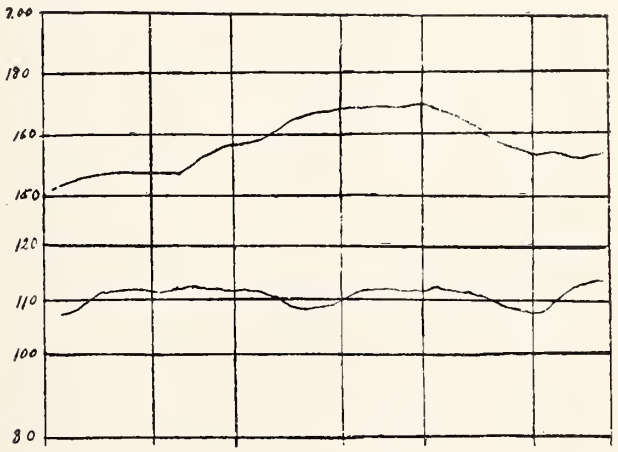

Diagram 2. Second Stage

as well as its possibilities and consequences, by studying diagram No. 4, which illustrates schematically the whole process. In diagram No. 4, "A" represents the start of the process, the first sting of the causative toxine; the physiologic stage if you wish; the stage of essential hypertension. Here hypertension is the outstanding symptom, and other symptoms are either wanting or,

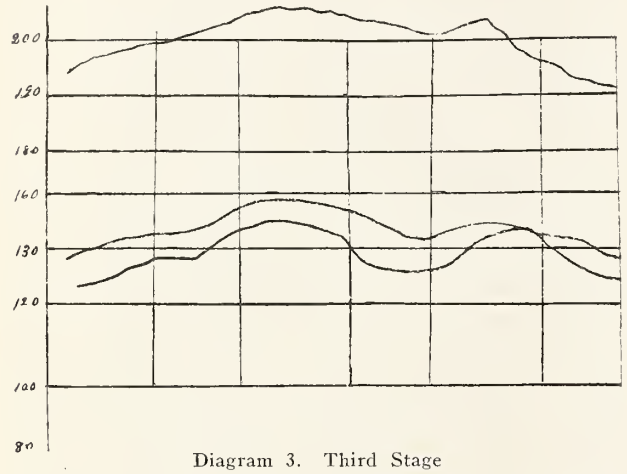

Diagram 3. Third Stage

they are very hard to demonstrate. As time goes on we reach the point "B" where definite arterial and capillary changes have taken place, local or general. By this time we are perhaps able to demonstrate said arterial and capillary changes. Definite symptoms pointing to certain organs or structures begin to show up. The diastolic curve of the blood-pressure rises and tends to become fixed (it no longer falls to normal), and the systolic curve mounts still higher. Gradually we approach the point C. Here the abnormal blood-pressure ratios and the generalized arteriosclerosis stands out prominently, literally speaking for themselves and in addition thereto, we have definite groups of symptoms pointing to fibrotic and arterio sclerotic changes in certain of the internal organs, e. g., arterial and fibrotic changes in the kidneys producing chronic Bright's disease; or the arteries of the brain may bear the brunt of the attack with apoplexy, degeneration or softening; or, chronic pulmonary conditions, such as an old long standing case of mitral stenosis with its long continued insult of passive congestion and fibrosis may be sufficiently prominent to exhibit pathology and symptomatology which may overshadow symptoms elsewhere; or it may be the liver, or the eyegrounds that will show changes most prominently. Now this brings us to the point "D" (the heart). It is easily seen that the heart has been overworked. It may be only a question of gradual compensatory hypertrophy and dilatation until the heart muscle has reached the limit of physiologic response. Now the heart muscle may gradually give way, weaken and allow some fall in pressure, or, it may fail completely with dilatation, venous stasis, and general dropsy. In addition to the above gradual process of hypertrophy and dilatation the heart muscle of itself may show evidences of fibrotic or degenerative changes with coronary sclerosis. In the advanced stage of this process we have all possible combinations of the above factors, sometimes one stands out, again it is another; or, two or three may show prominently at the same time. The end may come by chronic nephritis, acute uremia complicating, or apoplexy, cerebral hemorrhage, or cardiac decompensation with general venous stasis, general dropsy, pulmonary œdema and death.

Now the urologist, or the man who is interested particularly in the kidneys, has a case referred to him with kidney sclerosis as an outstanding factor. He thinks the kidney disease is the cause of the hypertension, blood-vessel changes, and the cardiac hypertrophy. On the other hand, certain men believe that the condition of the heart and blood-vessels and the hypertension causes the kidney disease. The specialist in nervous diseases frequently sees in his work a type of hypertension, therefore he suggests nervous diseases as a cause. The endocrinologist meets the symptom hypertension in certain phases of his work (why not, the endocrines are the regulators of metabolism). He at once suggests the endocrines. And likewise the gynecologist with his series of cases going through the menopause (which is in good part endocrine in origin) meets this symptom. He makes his suggestion, and so this merry war of words goes on.

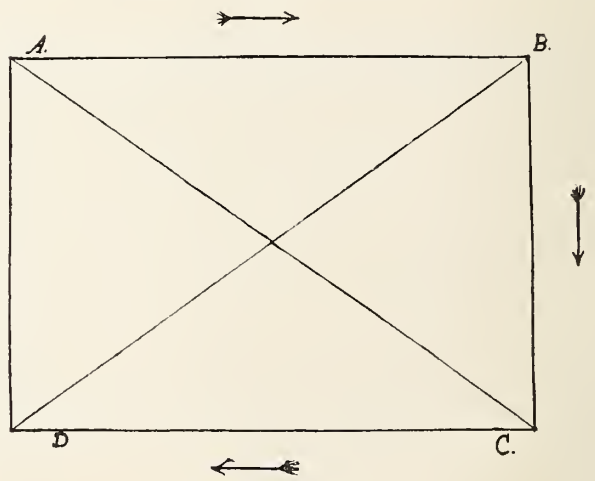

Diagram 4

A—Arterial Hyper-tension.
B—Arteriosclerosis.
C—Nephritis, Apoplexy, etc. Retinal, liver, lung changes.
D—Cardiac damage. Cardiac hypertrophy and dilatation. Cardiac failure and dropsy.

This all serves to remind me of a poem encountered in early childhood in one of the school readers of the period, it was written by Saxe, and entitled the "Blind Men and the Elephant." As you will recall the blind men made a personal visit to obtain first-hand information concerning the elephant. One of them came in contact with the elephant's side, he thought the elephant was like a wall. One grasping a leg said, "The elephant is very like a tree." Another happening to take hold of an ear said, "It was quite plain the elephant was very like a fan." And so they disputed, each in his own opinion exceeding stiff and strong, though each was partly in the right, and all were in the wrong.

And so it is with the above classes of observers, each man describes the elephant as he has found it. The trouble with all of them is that they see from one angle only. They fail to visualize and study this process in its entirety.

Arterial hypertension is not *per se* a disease and it should never be spoken of as such. Hypertension is only a symptom, just as jaundice and albuminuria are symptoms. It is true that it is an early, an outstanding, a prominent, and perhaps, even an important symptom, yet nevertheless a symptom, and there is always something behind it. In its more acute and irregular manifestations it is often a transient symptom of a great variety of conditions. Permanent or so-called essential hypertension is one of the symptoms of a widespread disease of the cardiovascular system as a whole. To which is superadded sooner or later a more or less general arteriocapillary fibrosis with late or terminal symptoms referable to one or more of the important internal organs of the body.

Management

Hypertension being only a symptom, any attempt to force the blood-pressure down without due regard to the underlying condition would be very poor and unscientific therapy. Such a procedure would be on a par with taking a patient having a positive Wassermann and treating the Wassermann test. It is the underlying condition that we must turn our attention to and then perhaps improvement may take place in the hypertensive and the other symptoms as well. There is a certain time or stage of the subject under consideration when we are confronted by an acute phase where prompt action may be necessary to save life, e. g., eclampsia or acute uremia. Here the old-fashioned measure of blood letting is occasionally found to be of use. This measure eliminates some of the toxic material, it lowers the blood-pressure quickly, though temporarily, it gives the natural forces of the patient a chance to readjust themselves and the physician a chance to proceed with his therapeutic schedule. If you have withdrawn anywhere near a pint of blood, normal saline solution should be introduced (subcutaneously, intravenously, or by proctoclysis) to take its place. Again take the elderly man with a systolic pressure running from 220 to 240. He has severe continuous headache, he is constantly dizzy, he occasionally falls and may cut himself about the head. Judicious blood letting may prevent a cerebral hemorrhage in this type of case. However, the above measure belongs in the emergency class. Its use is occasionally and its value temporary. Our attention shall be chiefly directed to the type of cases which show sustained or so-called essential hypertension as a symptom. The chronic slowly progressive type. This is our great problem. We may as well admit frankly at the outset that we have no specifics. It becomes therefore a question of management, rather than exact or specific treatment. As a rule the damage is well on the road before the physician sees the case. The management of this condition very naturally divides itself into two heads, first: prophylaxis; second: symptomatic or emergency measures.

Prophylaxis—The first thing to do is to take a thorough physical inventory of your patient. Find out as nearly as may be the condition of all the various organs and tissues of the body. Ascertain how much damage is done and its location. Investigate his metabolism. If any exogenous source of toxines is found, remove same. If any focal infections are located, clean them out. If any contributing factors are found in the method of life or habits of the individual, take the proper steps to render them inactive. When you have obtained and considered all of the information furnished by the above investigations you are in a position to map out a schedule suitable to the needs and capacities of your particular patient. In general we may say the patient should lead a quiet, simple, even, orderly life. It may be necessary to cut down the activities of the individual as much as 50 per cent. Rest, perhaps even a part of the day in bed, is a necessary and useful measure in severe cases. The nervous system should be kept in as tranquil a state as possible by avoiding business strain. Bad habits should be corrected. Dietetic considerations are of the very greatest importance. Most individuals past middle age eat very much more than they need. A celebrated English physician once said, "If a man would begin cutting down his diet at middle age and continue reducing the amount eaten and finally go out of life on the same diet that he

came into it on, namely milk, that he would increase his life span very materially." Reduce the diet to meet the needs of the body, considering the ability of the organs to metabolize. It is not so much a question of an ironclad diet suitable for all cases, but rather, give to the individual what he needs and can utilize, but nothing in excess. The simpler and more abstemious the diet the better in all cases. Milk plain and in its various combinations, is an ideal food, the simpler vegetables chosen with reference to their chemical content if necessary. Plain cereals, fruits, stewed or raw according to need, and fruit juices, particularly the citrus fruits. It is best to keep the bowels open, the skin active, and the urine abundant. Saline purgatives, alkalies and sweat baths, in such cases as need them. The above is a brief enumeration of the lines along which we should work. The amount of benefit obtained will depend partly upon the condition of the patient, the stage of the disease which he presents, partly on the skill, judgment, and experience of the attending physician. To illustrate, take any fairly well advanced cases with the usual leading symptoms, present and prominent. Place the individual at absolute rest, in bed a good part of the time. Use the Carrell milk diet strictly. Give daily morning doses of some appropriate saline laxative. Alkalinize your patient. A few weeks of this simple plan alone will serve to improve the individual very much. The comfort and sense of well-being of your patient will be markedly improved even though the readings of the blood-pressure curve may be very little or not at all affected. If the kidneys are badly crippled and handle nitrogenous products poorly, cut same to the minimum consistent with necessary bodily nutrition. If intestinal toxemia is a marked factor with constipation present, use salines freely, preferably sulphate of magnesia. Make the appropriate dietary changes, and use bacillus acidophilus milk freely as a part of the diet, etc.

Second—Symptomatic or Emergency Measures in Treatment—Under this heading would come the discussion of the use of drugs. This condition having once been established, drugs play a very unimportant part in its management. Nevertheless we still use them. The iodides, preferably the lipoid or albuminoid type of same, used in small or moderate doses for a few weeks at a time with rests between is perhaps of some value, even where syphilis is not a factor. The use of the nitrites, nitroglycerine, sodium nitrite, etc., used for considerable periods with intervals of rest may be of benefit in selected cases, they may be tried. Very closely related to the above, from a therapeutic standpoint at least, would come the use of the arterial sedatives, of which class, aconite seems to be the favorite. Many prominent and experienced clinicians are very enthusiastic over aconite in this connection. They use it in fair doses over long periods of time. It is always easy to criticise, yet I do not believe very much benefit is ever derived from the use of any of the above mentioned drugs. At best their benefit is only temporary, yet they may serve to give us a little respite in which to arrange a more potent schedule. Generally in the cases in which we need them most the small blood-vessels have already been damaged to the point where they have completely lost the power of response. We should make it an invariable rule in trying any of the above classes of drugs that if we do not get any response within a reasonable time we should drop the drug at once and for good. Close attention with strict adherence to the above mentioned general principles of management will give the best results possible, compatible with our present knowledge and understanding of this subject.

THE IMPORTANCE OF A MODIFIED SURGICAL TECHNIC IN USING LOCAL ANESTHESIA*

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So much of the literature which has appeared recently contains discussions concerning the advantages of local anesthesia as well as the technic of its administration that the writer thought it would be worth while to call attention more especially to the important role surgical technic plays in the carrying out of the local anesthesia method. While the psychic care of the patient and the manner of inducing anesthesia must be considered among the most important factors connected with its use, the type of surgical technic employed has such an important bearing upon the outcome of any given case that success or failure depend to a great extent upon this factor. It is not to be disputed that surgeons of equal experience in the use of local anesthesia differ greatly in the percentage of operations they can perform successfully. This we believe is due largely to the variations in the surgical technic which they employ. In this discussion it is the writer's desire to use the term "surgical technic" in the broadest possible sense. It is meant to encompass such factors as the patient's physical comfort upon the operating table, the enlisting of his cooperation through the agency of a skilled

*Read before the Linn County Medical Society at Cedar Rapids, Iowa, September 11, 1924.

psychoanesthetist, the development of an exposure which will permit the induction of local anesthesia as required during successive steps of the operation, sharp dissection, careful handling of tissues, the avoidance of traction and many allied factors.

In certain regions it is of course possible, by means of regional anesthesia, to completely anesthetize the area which is to be operated upon. In operations about the head, neck, thorax, the lower pelvis and the extremities, it is entirely possible to establish complete anesthesia before beginning the operation and in such instances it may not be so necessary to modify the methods of operating which are commonly followed when general anesthesia is used. However, it is most desirable even in these instances to pay the closest attention to the patient's comfort and to avoid both general and local trauma and to respect the patient's psyche.

Fortunately the average surgeon may gradually broaden the scope of local anesthesia in his own hands by applying it to the different varieties of cases which come under his care. The more simple work may be done under local anesthesia while he is mastering the fundamentals of the process and certain portions of operations of any magnitude may be begun under local anesthesia and finished under general should the necessity arise. General anesthesia should therefore be considered an ally rather than a competitor of local anesthesia and every surgeon who essays the use of local anesthesia should be prepared to change to general anesthesia rather than allow his patient to suffer pain provided he is for any reason unable to prevent such suffering while completing an operation.

Of course the magnitude of the procedure makes a decided difference in a discussion of this subject in its various phases. In this message I am dealing more particularly with major surgical operations, that is, those in which conditions may arise which demand the use of general anesthesia during certain steps of the procedure. For minor work but limited training and equipment are necessary. This fact offers every surgeon the opportunity for gradually training himself in the use of local anesthesia so that he may be able to meet the heavier demands which the performance of major operations are certain to place upon him.

As I look over my work in retrospect I can recall to mind numerous innovations, the introduction of which seemed to be indicated provided I wished to be assured of completing operations begun under local anesthesia without discomfort to my patients and embarrassment to myself and without the addition of general anesthesia. My point may be well illustrated by a consideration of the application of local anesthesia in surgery of the abdomen. For example, it has long been considered a comparatively simple matter to perform the operation for the radical cure of inguinal hernia under local anesthesia. This operation was one of the first major procedures successfully carried out under this method. Descriptions of the technic and the opportunity for observing its performance have been available to all surgeons for many years. Yet, notwithstanding the fact that the induction of anesthesia for this procedure is exceedingly simple, one has but to visit a few of the leading clinics of this country to become convinced that many surgeons are unable to successfully apply the method in this field. It has been my observation that in most instances failure was due to neglect of certain fundamental principles connected with the patient's psyche, faulty surgical technic, or some other factors rather than the improper induction of anesthesia. The fact that many surgeons are unable to perform this operation under local anesthesia is well borne out by the statement of Labat* who admits that in certain cases of inguinal hernia general anesthesia should be employed. We feel that if such an authority who has had years of experience in this field offers such an opinion, those who are less experienced are apt to think likewise. In our experience all types of inguinal hernia may be operated upon under local anesthesia with practically 100 per cent success provided the proper technic is employed. It is for that reason that surgical as well as local technic should be especially stressed.

The employment of the local anesthesia method is so much more comprehensive than the simple induction of local anesthesia that its successful use will depend largely upon the degree with which the surgeon has mastered the many details relating to the surgical technic, some of which are as follows:

(1) The establishment of a proper psychological condition of the patient.

(2) The assurance of the patient's physical comfort during operation.

(3) The induction of complete local anesthesia without causing the patient unnecessary pain.

(4) The employment of a modified surgical technic which is compatible with the use of local anesthesia.

The Psychological Condition of the Patient—There are many factors which might be discussed

*Regional Anesthesia 1922.

in relation to this point but time will permit but the introduction of a few leads. Obviously if local anesthesia is to be used upon a patient the element of coercion must be tactfully eliminated. We are thoroughly convinced that a discussion of the merits of the method with the patient is harmful rather than beneficial. We believe that the demeanor of all attendants including the surgeon himself, combined with the association of prospective patients with those who have been operated upon successfully by the local anesthesia method will give uniformly the best results. Tactful management of the patient during the preoperative period by those with whom he comes in contact will bring him to operation in the best mental condition. The confidence of the surgeon, the reassurance contributed through the agency of a skilled psychoanesthetist and attention to every detail relating to the patient's comfort are the remaining great factors in reducing apprehension and combating psychic incompatibility.

Physical Comfort of Patient—As it is my desire to especially stress the modifications in surgical technic which I consider essential to uniform success I shall but mention hurriedly the necessity for the proper training of assistants and the possession of proper equipment to insure the maximum comfort of the patient both before and during operation. The importance of this phase of the subject presented itself with especial clarity many years ago when a review of our records showed that the discomforts coincident with local anesthesia operations were, in the vast majority of instances, due to factors outside of the field of operation. We must realize that the difference between the unconscious and the conscious state will demand at least a certain amount of adjustment of the patient's surroundings. The acme of physical and mental comfort is desirable and cannot be attained unless its necessity is appreciated, anticipated and provided for in advance. Much time and endeavor must be given to the development of a proper setting for this type of work. One of the most helpful factors is a skilled psychoanesthetist through whose cooperation and aid the surgeon may gradually convert those who are associated with him in his work to the demands which the method and the best interests of our patients make upon us. This is a day of specialism and one can hardly conceive of any circumstance under which a patient should receive closer attention than when undergoing a surgical operation. Even if the future finds local completely replaced by general anesthesia its effect upon this phase of the practice of surgery will have been well worth while.

The Painless Induction of Local Anesthesia—The induction of local anesthesia is usually begun at a time when the patient's apprehension is apt to be most acute. It is for this reason that the method employed, the equipment used and the environment should meet the situation in all its phases as perfectly as possible. If at all practicable the anesthetic should be introduced in the field through which the operation is to be performed. It should be introduced with a minimum of irritation to the patient. This demands the most constant attention of a trained psychoanesthetist, the most highly developed mechanical equipment it is possible to obtain, a minute knowledge of each patient's psyche and strict attention to details in the following of certain fundamental principles. We have accustomed ourselves to all varieties of syringes, also to conduction anesthesia and have faithfully carried out the steps of the various technics that have been described. We are firmly convinced that, with the use of the pneumatic injector, long flexible needles, infiltration anesthesia (when not contraindicated) and the induction of anesthesia by the painless subdermal method which we have frequently described, the indications may be more successfully met than by any other method which we have used. After anesthetizing the skin, the subsequent layers may be recognized with certainty by the needle point and regions infiltrated quickly and with absolute completeness with almost no reaction on the part of the patient. If this ideal can be accomplished, the operation may be begun upon a reassured patient and the surgeon greatly relieved from the usual handicaps which are present when the above-mentioned fundamentals are not followed out to the letter and the patient's apprehension has been increased rather than reduced during this most important step in the procedure. Experience shows that most of the failures in the early steps of an operation are due to faulty technic in inducing anesthesia. The anesthesia is either incomplete or the patient has been made uncomfortable to such an extent during its induction that his confidence and cooperation have been lost to a greater or lesser degree. Unless these facts are realized, surgeons who are improperly trained and improperly equipped will continue to report a large percentage of failures in cases in which they attempt to do major surgery under local anesthesia. Conversely, those who are equipped will find that the early or more trying portions of an operation will proceed smoothly, without interruption or complaints from the patient whose confidence will have been established. He will then lend his cooperation, and will in many instances even

withstand unpleasant sensations without complaint.

Surgical Technic—With the same attention to details and finesse the various steps of the operation should be carried out. Exposure of all layers and all tissues should be a *sine qua non.* All work should be done directly under the operator's vision. It has long been realized that with deep inhalation anesthesia accompanied by complete relaxation, long incisions, wide retraction and careful packing with gauze, the surgeon is offered an opportunity to work at the greatest advantage. The advance of local anesthesia has been hampered greatly by an inability to gain this exposure by the methods just mentioned and because of the impossibility of forcibly withdrawing deep-lying organs to the surface for the purpose of inspection and surgical attack. We feel that until methods are adopted which will permit exposure and the appropriate surgical attack when using local anesthesia, surgeons will not find much satisfaction in its employment. It is therefore necessary to invoke what we have termed "surgical strategy" in order to use local anesthesia with satisfaction.

The application of surgical strategy to the field of local anesthesia demands: first, absolute relaxation of the muscles; second, equipment which differs somewhat from that which may be used successfully with general anesthesia, and third, and most important of all—a modification of the orthodox manner of operating.

Relaxation can be gained only by the induction of perfect anesthesia. It is not sufficient for instance to enter the abdomen under "fairly good" anesthesia, with the muscles intermittently contracting and relaxing. The anesthesia should be so perfect as to eliminate muscle spasm.

With regard to the second point the surgeon should be so equipped that the different layers of the abdominal incision may be retracted symmetrically and continuously, an ideal which is impossible of accomplishment provided retractors are held by assistants. Furthermore, if muscular contraction is to be eliminated, incisions cannot be suddenly and forcibly spread to the extreme limit by the ordinary self-retaining retractor. Another essential, which is of the utmost importance, is the use of the force of gravity in order to eliminate the necessity for manipulations which will elicit muscular contractions or expulsive efforts. We have tried to meet the demand for equipment by the development of spring retractors, an operating table which will tilt into any desired position without discomfort to the patient, and an adjustable lamp.

With these devices at hand and the abdominal wall anesthetized, the employment of an appropriate surgical technic assumes a most important role. The abdomen is opened while the successive layers are gently elevated. The wall is carefully but firmly lifted vertically while the movable viscera glide to lower levels and away from the operative field, being assisted where necessary by means of long, delicate thumb forceps. The use of sponges for the purpose of packing movable viscera out of the field is eliminated as far as possible. When sponges are used it is generally for the purpose of preventing the spread of septic material or in order to retain movable viscera after their exclusion by the force of gravity by the method described above. The resulting exposure is designed to offer one the opportunity for introducing the solution into the splanchnic areas wherever indicated. Organs or structures that cannot be elevated without traction are dealt with before being dislodged. Excepting in the cases of severe infection, great distention and large tumors which obstruct the surgeon's vision, almost any operation may be performed without embarrassment. The pelvis may often be inspected through an upper abdominal incision or vice versa. It is not unusual to find it possible to operate in fields somewhat remote from those over which the incision is made. For example, upon the day on which this paragraph was dictated the writer performed an appendicectomy, a suspension operation upon the uterus and the Coffey operation for fixation of the cecum upon a sixteen year old girl through a gridiron incision which was made for the purpose of removing an interval appendix. No gauze was introduced into the abdomen, no intestines came in contact with the instruments excepting the parts which were being operated upon. The only intraperitoneal anesthesia used was injected into the round ligaments of the uterus, the mesoappendix and the colonic mesentery. During certain parts of the procedure sutures were introduced at least six inches from the surface of the abdominal wall and the only discomfort suffered by the patient was the pain caused by traction uopn the appendix when the "physiological test" was applied in an effort to reproduce the patient's former symptoms. In this particular instance general anesthesia, wide retraction, and the most extensive abdominal packing could not have offered a better opportunity for the performance of these operations and there would be no comparison between the degree of general and local trauma resulting. It is quite obvious that without perfect anesthesia, elastic retraction, the avoidance of all overt acts, the utilization of the force of gravity, adequate

illumination, the forceps tie and a "stealthy" application of surgical strategy, the above-detailed procedure could not have been carried out upon this girl.

It is our opinion, therefore, as outlined above, that the successful use of local anesthesia in major surgery will demand a number of innovations in the methods of handling patients, in equipment and in technic; that those who desire to become proficient in the method must develop an *esprit de corps* at their offices and the hospitals at which they work; that they must perfect their technic for the induction of anesthesia; that they must develop an armamentarium to meet the demands of local anesthesia and that they must so modify their methods of operating that they may be able to meet the indications of the method in a manner which corresponds to the principles embodied in this message.

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INTERSTITIAL KERATITIS: TREATMENT, RESULTS AND CASE REPORTS*

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Interstitial keratitis is a disease of youth occurring usually between the fifth to twentieth years, characterized by ocular pain, photophobia, lachrymation and progressive loss of vision, ordinarily involving both eyes and running a chronic course from its very beginning, resulting in greater or less permanent loss of visual acuity. It manifests itself in the main, in congenital syphilitics but so-called interstitial keratitis has been described in various other diseases as in herpes, ophthalmicus, malaria, rickets, leprosy and focal infections.

However, the true type of interstitial keratitis occurs only in congenital lues. It is a non-ulcerative process occurring in two types differentiated by the method in which the cornea is involved. In one type the deep and middle layers of the central portion of the cornea becomes infiltrated by grayish maculae which gradually increase in number and extend outward toward the corneal margin; the entire cornea becoming dull and frosty in appearance.

As the opacity approaches the schlero-corneal margin vascularization begins from new vessel formation in the deeper layers of the cornea. When the opacity begins at the schlerocorneal margin and extends centrally the dull areas are usually vascular at the beginning and may assume segment or wedge-shaped characteristics; usually these segments push from several points toward the corneal center being vascularized as they push forward. In addition to the deep vessels a few loops of vessels from the conjunctiva push out over the cornea—however this is a minor proportion of the vascularization.

The haziness of the cornea is due to a round cell infiltration in its deep and median layers. The central portion is rarely invaded by vessels and remains grayish. The remainder will vary with the type and intensity of the disease. If the vascularization is marked the cornea may have a red flannel appearance but if infiltration is the main symptom the cornea appears frosty.

The tension during the inflammatory stage is usually low unless in neglected cases aqueous drainage is stopped by iris synechiae; at the same time iris dilitation is difficult owing mainly to the fact that the atropine does not diffuse through into the aqueous to perform its function on account of the dense corneal infiltration.

Choroiditis may complicate the disease which fact will usually be discovered after resolution. Iridido cyclitis is always present in greater or less severity and extreme care and diligence are necessary to preserve as nearly as possible the integrity of the interior of the affected eye.

The course of the disease as said, is chronic, running months and even years before a quiet eye results—and unless amply treated recurrence may follow in a year or so. The resulting loss of vision varies with the intensity of the disease and the length of time before resolution begins.

The process clears from the schlerocorneal margin toward the center, the last remaining opacity being usually central. The resolution process continues for years with gradual improving vision. The resulting visual acuity depending on the activity of the disease and the amount of corneal deposit offset by the activity of the treatment administered.

It is for the purpose of describing intensive rational therapy for the affected eye and an effort to protect the sound eye in unilateral cases that this paper was evolved.

Probably no group of practitioners have been so slow to acquire the use of arsphenamine as the ophthalmologists. Undoubtedly this has been due to the fact that it is an arsenic derivitive and the consequent fear of an arsenical neuritis is hard to displace. But when we consider the delicacy of the structures with which the ophthalmologist deals and how slight a variation is sufficient to cause grave loss of vision or even blindness it seems that any treatment which will work as

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No.	Name	Age	Sex	Eye affected	Duration	Wass.	Second Eye affected after Exam.	Treatment	Duration	Result L	Lense	Result R	Lense	Remarks
1	C H	9	M	L	2wks.	3+	0	Salv & Hg.	7mos.	16/19	S	16/24	S	Monocular
2	K W	16	M	L	1wk.	+	0	" "	5½ "	?		?		"
3	E G	6	F	R	5wks	+ +	0	" "	9 "	?		?		"
4	H B	7	F	L	1wk	4+	0	" "	5 "	15/20		15/15		
5	R N	23	M	L	4mos.	4+	1wk.	"	6 "	15/15		15/15		Binocular
6	J P	9	F	R	?	4+	2wks.	" "	? Eloped to Rochester. Wrote later. "Eyes Good."					
7	T A	14	F	R & L	1mo.	4+	Binocular		5mos	15/16		15/19		Binocular
8	I T	22	F	L	2wks.	$+_{2+}$	9mos	" "	Still active	15/30	15/20	15/50	Same	Incomplete Binocular
9	C J	17	M	L	1wk	Strong+	relapsed 24mos.	Hg	24 mos.					
10	"	19	M	L	2yrs	0+		Salv & Hg	5mos	15/40	15/24	15/19	15/19	Had prior attack at 10 yrs of age R or L?
11	F C	8	M	L & R	2wks.+	Phys Signs	Binoc	Hg	11 mos.	15/39	15/32	Not imp.	Not imp.	
12	C S W	5	M	L & R	?	" "	"	"	Unknown	15/100	15/100	15/80	15/32	Binocular
13	M B	4	F	L & R	1wk.+	" "	"	"	11 mos	?	?			Still active when last seen
14	F S	10	F	L & R	6wks.+	4+	"	Hg. & KI	10 mos	15/30	15/20			Binocular
15	R B	14	M	L & R	2wks+	Phys Signs	"	" "	20½mos.	15/200	3/200	15/100	3/200	Had bilateral acoustic
16	P C	10	F	L	4das.	" "	1 yr	Hg	8mos	15/19				Neuritis later
17	"	11	F	R	1wk.	" "		"	?	15/50				Treated at Home
18	J S	16	M	L & R	8mos	4+	8mos	"	1 eye treated at home 8 mos.+	15/200		15/50		Treatment adv and out lined. Ret'd Home
19	A P	9	F	L & R	1wk.	4+	4das	Salv & Hg.	2½mos.					Fairly Quiet Not completed
20	B M	23	F	L & R	Few wks	4+	Binoc	"						Incomplete

rapidly in preventing tissue change and loss as salvarsan should be used to the limit.

When it is remembered that an average of 3.2 per cent of all syphilitics, congenital and acquired, show some eye involvement and that 2 per cent of all eye diseases are of luetic origin and that 14 to 15 per cent of blindness is due directly or indirectly to syphilis, then it seems we should use more care and be more consistent in the treatment of syphilis as it comes under our control as physicians.

Knowing the constant and ever increasing prevalence of syphilis one should always be on guard for it is an etiological factor in all pathology. According to various authors from 40 to 70 per cent of all iritis is traceable to lues. de Schweinitz states that from .4 to 5.3 per cent of all syphilitics develop iritis and Alexander that 8 per cent develop retinitis of one type or another.

Primary optic atrophies vary between 40 and 60 per cent as a result of cerebrospinal syphilis and 75 per cent of muscle palsies are traceable to luetic infection earlier in life. With the development of the Wassermann reaction and the ready accessibility of laboratories for its accurate use

	Salvarsan & H.G	Mercury
Completed Cases	7	7
Average time for cure	6 mos	14+mos
No of Monocular Cases	4	1 (?)
Average resulting vision	15/20+	15/50+

we are in duty bound to eliminate in all cases the question of syphilis or institute early and energetic treatment for the control of its manifestations. There is no drug so remarkable and speedy in its action as salvarsan and to delay its use and prevent destruction of delicate tissues is nothing short of negligence.

Ophthalmic literature of recent years is full of conflicting statements regarding the use of salvarsan.

Louis T. Green in the April 1, 1919, issue of American Journal of Syphilis makes the following statement: "the best results so far according to the literature, seem to be found in inflammations of the uveal tract, especially in cases of nodular iritis * * * chorioidal lesions also

cleared rapidly under its use * * * in cases of involvement of the retina and nerve there is great diversity of opinion regarding its use. Many cases on record of optic neuritis and neuroretinitis follow its use especially when complicated by hemorrhagic retinitis—Dolganoff states however that the arsphenamine has no deleterious effect on the nervous elements of the eye while various others claim that ocular inflammations following its use are to be looked upon as further evidence of lues and the treatment should be intensified and combined with mercury and iodides. In ocular palsies, opinion is divided yet it appears from case reports that if treatment is begun early, satisfactory results are obtained. Where most was expected of it, arsphenamine has singularly failed, namely in interstitial keratitis; many explanations have been brought forward but so far none are satisfactory. In nearly all cases where it has been used the second eye has become involved, hence it does not seem to even have a prophylactic effect."

On the other hand, William J. Young, Louisville, Kentucky, reports in the April, 1920, American Journal of Syphilis several cases and draws the following conclusions: "3. That arsphenamine is the most potent drug in treatment of ocular syphilis, mercury alone having little effect. 4. That number of arsphenamine injections is limited only by outward symptoms which may develop or lack of improvement in the ocular lesions. 5. That finally the effect of mercury alone in ocular lues is uncertain and in large per cent of cases will neither control nor improve the symptoms."

Pfaundler and Schlossman, speaking of interstitial keratitis, state: "It is more than doubtful however whether this remedy (salvarsan) will positively influence the corneal process, although Lohlein demonstrated experimentally that arsenic was present after twenty hours even in a non-vascularized cornea. It certainly does not prevent the second eye from becoming affected as was shown by two cases in our clinic. Furthermore, injections of salvarsan have been followed by grave parenchymatous keratitis in the second and previously normal eye. * * * One case of bilateral parenchymatous keratitis and iritis showed an exacerbation after ten weeks."

Kurt Scholt in Ztschr f Augenhlk, Berlin, March-April, 1923, 50-109, states that "although salvarsan has been used for decade, therapeutic results have not improved. Mercury is and remains the most important supplement to local therapy. General supportive treatment, atropine, heat, dionine, mercury by inunction followed in six weeks by ten injections of salvarsan and if necessary a second course of inunctions. He states that recently salvarsan has been given cautiously as many of the patients were wretched and weak."

Blanton in the American Journal of Syphilis, October, 1919, reports four fatalities after arsphenamine with coma as dominant symptom. No cranial nerve palsies. In two cases dilated pupils; the remaining two unaffected. Death occurred in all from respiratory failure. Postmortem showed similar lesions in all cases, minute hemorrhages scattered through the basal neuclei and the portion of the cerebrum bounding the lateral ventricles. Blanton's opinion was the formation of toxic by products of the arsenical compound.

When the universal use of so highly toxic a drug is considered it is truly wonderful that more bad results are not obtained when used by untrained and careless technicians; but the fact that a few people die from anaphylaxis does not prevent the increasing use of immunizing serums.

Authorities are agreed that haphazard insufficient treatment tends to clear the general system but deprives the neurological tissues of their antibodies and renders them much more open to attack; hence, the increasing percentage of neurosyphilis. By early recognition and long continued treatment with small doses of salvarsan both intravenously and introspinously they hope to control the optic atrophies along with the other degenerative nerve lesions.

Notwithstanding the adverse criticism of salvarsan in interstitial keratitis I wish to present a series of cases both under the old line of treatment and the recent ones under salvarsan—with the thought in mind of resulting vision, and time saved in the care of the patients.

In one case—I. T., the therapy failed to save the unaffected eye, coming on nine months later after a lull in the treatment. However the general improvement in the patient was exceedingly gratifying. From a thin colorless, scrawny, stiff-jointed subject has come a plump red-cheeked active almost human individual. The treatment of these children has been at times exceedingly difficult. It seems that the schlerosing process involves all the body tissues; the skin at times is tough and leathery and ample sized veins are hard to find; this coupled with the youth of the patients tries the patience and ingenuity of the technician. It will be found that within a few hours after the administration of salvarsan in a case of interstitial keratitis that a sharp focal reaction appears in the affected eye with considerable more annoyance. The vision will be quickly reduced and the opacity made much more

dense. This sharp reaction lasts from twenty-four to forty-eight hours and then begins to subside. If now the salvarsan is repeated the same process recurs again. This focal reaction is apparent until the inflammatory attack is passed. As soon as the eye no longer becomes irritable with the administration of salvarsan it may be quite definitely stated that the eye has started to clear. The rapid infiltration is in fact quite alarming when first seen and it is always a good procedure to thoroughly inform the parents of the manner in which the treatment acts, otherwise some argument may result.

When the eye no longer reacts in a focal manner, the resolution process is very rapid. Usually in a few weeks good useful vision is restored, providing of course the eye has been carefully safeguarded from iris synecheae and no other complication has arisen. When the second eye becomes involved the process is as a rule much less severe and tends to clear before the first eye is cured.

By cured is meant the time when atropine can be discontinued safely, and the patient allowed to do more or less eye work as in the case of children to resume school.

In the management of these cases much the same routine was carried out—atropine and at times keeping an iris open with a dense cornea is no simple matter, especially if the skin is sensitive to atropine, or the patient's tolerance is low. Dionine when necessary; mercury to the physiological limit, usually given as proto iodide and the arsphenamine or neoarsphenamine which acted as the accelerator. It has been found that small doses often repeated act much better than larger doses at longer intervals.

It is not the purpose of this paper to laud the use of salvarsan and decry the use of mercury; on the other hand it is gravely doubted if there ever was a case of syphilis cured by salvarsan and its abuse and the false security it encourages, are too well known to even mention.

The apparent action of salvarsan in these cases was in causing rapid progression and retrogression resulting in marked time saving, leaving less of a permanent deposit in the cornea, with better resulting vision, and by rapid increase in resistance safeguarding the unaffected eye.

Discussion

Dr. Thomas R. Gittens, Sioux City—What dosage of salvarsan is given in proportion to the age of the child?

Dr. James A. Downing—In answer to Dr. Gitten's question with regard to the dosage of salvarsan, will say that I do not believe that salvarsan should be given by the eye, ear, nose and throat specialist. I feel that this is a thing which should be done by an internist, and who is skilled in the technique and doing such work all the time. I feel that before any routine treatment be started, that a very careful physical examination should be made; this should be done, not only as a question of diagnosis, but as a safeguard to the patient and yourself, so that if any untoward results should occur, you will always have sufficient data to base an opinion. It has been the custom here to start in with a very small dose, much less than the usual dose for children at the same age as the person which you are treating. When mercury is administered with salvarsan, the ocular reaction is not so marked; each patient should be watched very carefully. It has been observed that a case affected with interstitial keratitis where the vision may be as much as 20/50, but following an injection of salvarsan there may be only enough vision to count fingers; then it will be necessary for you to explain to the parents of the child the reason for the rapid loss of vision. These patients are very hard to handle, and some become fatigued and disgusted with the long drawn-out line of treatment before a cure is effected. The first case so treated and discharged as cured in our practice was a little negro boy about nine years old; the reaction was particularly severe and his vision diminished very rapidly and there was much uneasiness as to the probable outcome; however, the end result justified the method of treatment and certainly the resulting vision is worth all the time and trouble that was necessary to affect a cure.

THE SUBCUTANEOUS USE OF OLD TUBERCULIN FOR DIAGNOSIS IN DISEASE OF THE EYE*

Harvey B. Gratiot, M.D., Dubuque

The influence of tubercular foci of infection on diseases of the eye has been a very popular subject for the past twenty years and if one surveys the literature he is amazed at the mass of eye pathology attributed to the influence of tuberculosis.

Of the literature some is the product of the enthusiasts who would have us believe that tuberculosis is responsible for a very large percentage of the inflammatory diseases of the eye, some is the product of those who would leave the impression that tuberculosis has little or no influence, while between these two extremes is a mass of valuable evidence that is convincing enough to warrant the belief that the use of tuberculin, as a means of diagnosis, is essential to every practicing ophthalmologist.

After an experience of fifteen years in the use of tuberculin my impression is that its use for the

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purpose of diagnosis in disease of the eye is not a simple procedure but one requiring very close observation and study to correctly interpret the findings.

In administering old tuberculin subcutaneously for diagnostic purposes we may expect three reactions in the event of an existing tubercular infection. The constitutional reaction of which the most characteristic symptom is a rise in bodily temperature eight to ten hours after the injection; a local reaction at the site of the injection characterized by redness, swelling, and induration, and the focal reaction occurring about the site of the tuberculous lesion.

If we are satisfied with the questionable value of a local reaction as corroborating our suspicions of a tubercular eye disease we will have a large array. If we go a step farther and require the constitutional reaction as essential evidence the array of tubercular eyes will not be as large a yield as the local reaction indicated, and going still farther and demanding the constitutional and some manifestation of a focal reaction in the eye as the only specific evidence that the disease is tubercular or, more probably dependent on tubercular toxines our number will be still further decreased but near the right proportion.

Inasmuch as "the local reaction consists in an inflammatory reaction around the focus of disease" (Hamman & Wolman), it is probably incorrect to speak of the changes produced in the eye, by tuberculin, as a focal reaction but rather as an increase in the severity of the symptoms, caused by increased activity of the toxines in the circulation which have kept the local eye disease active.

Actual tubercular foci in the eye, containing the bacilli and their products, are rare in comparison to the large number of diseased eyes apparently dependent upon some remote tubercular foci of infection.

Take as an example the cases of multiple small superficial ulcers of the cornea which are active for a time, heal only to break down again on the first provocation. They recur at intervals of several months over a period of years. A diagnostic dose of old tuberculin will cause a constitutional reaction accompanied by an increase in the severity of the eye symptoms in 75 per cent (twenty-one out of thirty-one of my own cases) provided the tuberculin is administered during the progress of the keratitis. If the tuberculin is administered two weeks or more after the inflammatory symptoms in the eye have entirely subsided the focal reaction will not occur, as it undoubtedly would if a tubercular foci existed in the eye. That these conditions are dependent upon some form of toxines, which originate from some hidden remote tubercular foci, which are stimulated into temporary activity, is also indicated by the fact that the constitutional reaction is more often negative during the quiescent stage of the eye trouble.

Clinically, diseases of the eye resulting from remote tubercular foci are not uncommon while tubercular foci situated in the eye or its appendages are quite rare. Under my own observation in a series of 160 cases suspected of being either tubercular or dependent upon a remote tubercular infection sixty-four were positive to tuberculin but only five out of that series actually had tubercular changes in the eye.

In what follows then in speaking of a focal reaction the increase in the severity of the eye symptoms is meant instead of the actual focal reaction occurring about the remote tubercular infection.

To obtain the focal reaction in the eye from the subcutaneous administration of diagnostic doses of tuberculin is not always possible in the presence of a tubercular eye affection but I believe it can be safely obtained more often than is generally granted. In some instances to be mentioned later the focal reaction is not desirable.

Early in my use of tuberculin it was my custom to use the lymph in the cautious way recommended for the detection of latent pulmonary tuberculosis by starting with .5 milligram and cautiously increasing the dose a milligram at a time until the constitutional reaction occurred or, until a sufficient amount had been given to warrant the assumption that the patient was negative.

By this method a positive constitutional reaction when it occurred was specific evidence that the patient had an active or inactive infection but it in no way proved that the diseased eye was dependent upon that infection. Recognizable focal reactions were very uncommon and the result was occasional useless courses of tuberculin treatment. or, if the local symptoms did not seem to indicate a tubercular origin, the overlooking of a condition which would have been benefited by tuberculin therapy.

Altogether the results were rather discouraging. As the few focal reactions that did occur almost invariably occurred after the initial dose, and as the eye affections indicating a possible tubercular origin were of common occurrence in otherwise apparently healthy individuals a larger initial dose was used and boldly increased at three day intervals.

This plan has yielded more reliable results, having been productive of a proportionately larger

number of focal reactions and with precautions I believe can be safely employed.

If there is an active pulmonary or other tubercular infection contraindicating full doses of tuberculin careful observation will indicate its presence and the assistance of a competent internist will be required to determine by physical examination how far we may safely proceed with our test.

Diseases of the eye resulting from, or kept active, by a tubercular focus of infection frequently occur in otherwise healthy individuals who have no history indicating a former active pulmonary tuberculosis, and do not present any physical signs of the primary infection. In other words they have what is ordinarily known as a healed process. At times this healed focus seems to be stimulated into activity producing a toxin to which the eye seems particularly sensitive. During this stage of activity if we have applied an external irritant, such as a small foreign body on the cornea, we may have as a result not only one small ulcer but several developing around the original trauma. After a time this initial attack subsides only to be reawakened by the first cold or other acute infection. In one instance coming under my own observation husband and wife contracted acute contagious conjunctivitis. The woman ran the usual course, but the husband had an unusually protracted course complicated by superficial marginal ulcers of the left eye. After several weeks this eye became quiet and remained so for eight months when he had a recurrence, and during the next four years he had had seven crops of these superficial ulcers. He reacted positively to tuberculin and the tuberculin treatment resulted in a cure which has lasted now five years.

There is another class of adults who have more or less extensive fibrous areas, the result of a former active pulmonary infection, and there is nearly always to be had a history pointing to a probable period of active tuberculosis which had not been recognized as such at the time. These individuals are prone to develop eye troubles on the least provocation. Cases of this kind form a large proportion of the so-called cases of tuberculosis of the eye. Any part of the eye ball may be affected. The cornea is probably most often involved. The sclera and episcleral tissues are next while the ciliary body, iris, and choroid are affected with equal frequency, the retina and nerve are affected quite rarely. Any one of these may have an exciting cause. In the cornea, foreign bodies are commonly responsible. In the choroid, blows in the eye with a baseball and another with a snowball preceded the development of a choroiditis which reacted to tuberculin.

Time does not permit of a more detailed consideration of the indications for the tuberculin test in diseases of the eye which are believed to be well known. It is the intention to deal more with the method of administration and the interpretation of the reaction.

Preliminary to giving the initial injection of tuberculin we assure ourselves that the patient is free from any active tuberculosis which might be stimulated into further activity by large doses of tuberculin. If the individual is of good general appearance, with negative family and personal history, negative urine, and maintains a normal bodily temperature, over a period of several days, we are safe in giving tuberculin. If there is a history of a previous tubercular infection which is now quiet or cured, tuberculin should not be used regardless of the physical condition the patient may be in. Individuals with old healed tubercular areas in the lungs who have recently had an acute cold, or other acute infection, should not be subjected to large initial doses of tuberculin. These patients will react more vigorously to tuberculin and large doses are not necessary. Persistent fever from any cause is a contraindication.

Precaution is also necessary in regard to the condition of the eye. If the disease involves the choroid, retina, or optic nerve a severe focal reaction is to be avoided. I am fully aware of the fact that there are several reported instances of severe focal reactions in intraocular tubercular lesions which leave temporarily clouded vision, and then rapidly improved resulting finally in apparent cures.

From personal experience, I am convinced that an element of good fortune rather than good judgment presided over these patients: In one case of iridocyclites and peripheral choroiditis which reacted positively to tuberculin, and was making satisfactory progress under therapeutic doses which were being administered by the family physician, ten milligrams of old tuberculin was administered by mistake. The vision up to this time had improved, in three months' treatment, from 20/200 to 20/40 and the eye had been free from any inflammatory symptoms for five weeks. The disease was of a year's duration and subcutaneous initial injection of three milligrams of old tuberculin had resulted in mild constitutional and frank focal reaction. Nine hours after the unfortunate dose of ten milligrams had been given, the patient had a violent constitutional reaction characterized by a severe chill and rise of temperature to 104 degrees. This reaction was followed by a severe focal reaction accompanied

by intense redness of the bulb, dense vitreous opacities and finally exudate into the anterior and posterior chambers resulting in closed pupil and secondary glaucoma. Two interesting developments also occurred in the case. One was a mild irido-cyclitis developing in the fellow eye which had been apparently healthy up to that time. The second was a slough appearing at each point of injection of the previous diagnostic and therapeutic doses of tuberculin. There were numerous scabs on both arms, some of which persisted for several months. This patient had a history pointing to a tubercular pulmonary infection at the age of seventeen and x-ray examination revealed extensive fibrous changes in the lungs. The extreme reaction did not have any apparent influence on healed lung processes.

In a second instance a woman of forty years, in apparent good general health, came with a sclerokeratitis which had persisted for fourteen months in spite of local treatment, in addition to the removal of tonsils, diseased teeth, etc. The vision uncorrected was 20/40. After a preliminary observation of four days an initial dose of four milligrams of old tuberculin was administered subcutaneously. Ten hours later she had a mild constitutional reaction and a fatal reaction in the eye. These reactions occurred in the morning and late the same afternoon blurred vision was complained of; at the end of twenty-four hours she could barely recognize hand movements. The anterior vitreous was filled with dense clouds of exudate and the fundus reflex was barely visible. This condition slowly subsided and after three months vision was 20/70. Large floating vitreous opacities persisted. It was discovered that there was a large area of peripheral choroidal disease which had been carelessly overlooked at the preliminary examination previous to the administration of the tuberculin.

These two cases are the only two untoward results observed in the administration of old tuberculin for diagnostic purposes in two hundred forty-nine (249) patients. While both of these were avoidable and due to carelessness they serve as a warning that tuberculin is not entirely devoid of danger to the eye.

In diseases of the choroid, retina, or nerve, it is probably the safer plan to accept the corroborative evidence of the local and mild general rather than run the risk of a focal reaction. Mild focal reactions have occurred in the choroid in two instances from 5/10 milligrams of tuberculin administered subcutaneously.

In suspicious cases of disease of the posterior segment of the eye ball we may gain valuable information by instituting the tuberculin treatment and watching the results. If the disease is of the anterior segment of the eye ball involving conjunctiva, cornea, sclera, iris, or ciliary body, we need have no fear of the results of a focal reaction.

In order to be able to recognize the focal reaction when it occurs, it is necessary to make a careful study of the exact condition of the eye before administering the tuberculin. In cases of corneal ulcer the exact size of the ulcer, if single; the area staining with fluorescin and the surrounding infiltration are all carefully observed and recorded. If the ulcers are small and multiple, they are counted and their location recorded. Note is also taken of old scars. Fluorescin is used to stain all areas denuded of epithelium.

In episcleritis and sclerokeratitis the redness and amount of swelling surrounding infiltrations is carefully noted. Fluorescin, or better, mercurochrome, is used to determine the amount of abrasion of the overlying epithelium.

In cases of iritis and cyclitis the accompanying peri-corneal injection is observed together with any existing synechia and the amount of exudate on the anterior surface of the lens.

In the choroid and retina the number, size, and situation of the areas involved are noted. If there are scotoma they are carefully mapped; vitreous exudates are also taken note of.

More reliable results will be obtained if the tuberculin test is instituted before the eye disease has reached its height, or better still, when the subsiding stage is well under way. If the test is made during the active stage of the disease an exacerbation of the inflammatory symptoms may easily be interpreted as a focal reaction from the tuberculin. Since the majority of cases of diseased eyes dependent upon remote tubercular foci have long or short intervals of inactivity, it is not difficult to select a time when the exacerbation is just starting or ending when a subcutaneous injection of tuberculin will precipitate the attack or will stimulate it into renewed activity.

In a few instances the test was deferred until the local eye symptoms had remained quiet for a period of two weeks or more and the tuberculin was administered with the hope of precipitating an attack of the eye trouble. This method was a complete failure as nothing resulted but local reactions and two very mild constitutional reactions in eight cases, five of which at a later time reacted focally to tuberculin given in the late stage of an acute attack. Two of these cases were multiple marginal ulcers which had been recurring at intervals varying from a few months

to a year, for periods of eight and twelve years. Each had extensive fibrous changes in the lungs and histories pointing to probable tubercular infections during adolescence. Ten milligrams of old tuberculin did not produce anything more than a local reaction during the quiescent period while three milligrams produced frank focal and constitutional reactions during the active stage of the eye disease.

As a general rule the best time to carry out the tuberculin test is during the early subsiding stage of the inflammatory symptoms. In the beginning one is less certain just what changes are going to manifest themselves and a sudden increase of the symptoms may be mistaken for a focal reaction.

Preceding the initial dose the patient is instructed in the use of the clinical thermometer and how to take and record the temperature at three hour intervals during the waking hours of the day for four or five days. As the majority of the patients are ambulatory they continue their usual routine before and after the administration of the tuberculin. The ideal way is, of course, hospitalization but this compels unnecessary expense and loss of time and if the patient possesses ordinary intelligence the test can be carried out satisfactorily at home.

Acute colds are contraindications to the administering of tuberculin in diagnostic doses because the cold may cause an increase of local symptoms and simulate a focal reaction. Convalescents from acute contagions are not good subjects for tuberculin and either a lapse of several weeks should be allowed or, in urgent cases, small doses used, as such patients are more susceptible to the influence of tuberculin.

The best time to administer the serum is between ten and twelve o'clock at night so that the constitutional reaction may occur during the waking hours.

The usual site for the injection is the arm which has the merit of convenience but if the patient is working the soreness from the local reaction may prove very inconvenient especially if several injections are given. In these cases the injections in the back between the scapula affords a better site.

The preparation used is Old Tuberculin which is now put up in convenient form by several reliable commercial houses. Probably the most uniform and reliable results may be obtained by selecting one preparation and becoming familiar with its use.

If the preliminary observations have indicated a healthy adult, free from symptoms indicating a possible active tubercular infection, aside from the eye disease, and this is not one contraindicating a focal reaction, the initial dose is given for the purpose of producing a focal reaction. Three milligrams injected subcutaneously are given for the initial dose, and constitutional reaction may be expected in eight or twelve hours after the injection. In rare instances it may occur as early as six or as late as thirty-six hours. If no reaction occurs in seventy-two hours the dose is increased to six milligrams, and at the end of the next seventy-two hours ten milligrams more are administered; if there is still no reaction we are justified in ruling out any tubercular influence.

After the initial dose of three milligrams if there is a marked local reaction consisting of redness, induration, and swelling at the site of the injection, the initial dose of three milligrams is repeated, instead of an increased dose, and usually the desired reaction will occur. In the event of a constitutional and local reaction, without the focal reaction, it is not deemed wise to carry the test farther.

Since the most important symptom of a constitutional reaction is fever, the patient is instructed to begin recording his temperature as early as possible the morning following the injection, and continuing to do so at two-hour intervals until midnight. As was before mentioned, the constitutional reaction may, as a rule, be expected from eight to twelve hours after the injection. It reaches its height six to eight hours later and then gradually subsides. The focal reaction is usually co-incident with the constitutional.

In two instances under my observation it preceded the temperature by two hours and in a few instances the patients have reported it as occurring six or eight hours later than the constitutional symptoms. I am inclined to believe, however, that in these instances the patients were so engrossed with the symptoms of the general reaction that they failed to note the local eye changes when they first appeared.

The patient is not instructed to look for any change in the eye, otherwise his attention will be constantly fixed on his eye and he will interpret every little pain as a part of the expected reaction, and by the time he reports back to his physician, will have had an imaginary focal reaction, his account of which may make one question the value of his whole report. The patient should come under observation as soon as possible after the reaction begins.

The most characteristic manifestations of the focal reaction in an inflamed eye are increased redness and lacrymation. If the tuberculin has been given in the subsiding stage of the inflammation, the disease will be augmented.

In cases of single corneal ulcer there will be in addition to the redness and lacrymation, a larger area of denuded epithelium shown, when fluorescin is instilled, than had existed before the reaction. When the ulcer is situated in an old scar, the result of previous attacks, the entire area occupied by the scar will become denuded of epithelium. In multiple marginal ulcers, more ulcers will appear and old scars of previous ulcers will become active, denuded of epithelium and will stain with fluorescin.

A woman of forty-eight years presented with ulcers of the left corneal margin which had persisted for three weeks. This was the first attack in the left eye, but the right eye was practically blind from recurrent attacks of keratitis during the period between her twenty-fourth and thirty-second years, and which had now been quiet for thirteen years. She was under weight and anemic, and after consultation with her physician it was decided to give old tuberculin. Eight hours after the injection the constitutional reaction was manifested by a chill, followed by temperature of 101 degrees and almost coincident with these symptoms there was a focal reaction in the right eye denuding the old corneal macula of their epithelium. A focal reaction in the left eye could not be made out with certainty but immediate healing of the ulcers followed this one diagnostic dose of tuberculin.

In episcleritis there will be an increase in the swelling of the involved area, the surrounding injection will be very markedly increased and invariably there will be denuded overlying conjunctival epithelium, the area staining with 1 per cent solution of mercurochrome.

In sclerokeratitis the same results may be looked for as in eposcleritis. The corneal area will be more vascular and the surrounding structure more infiltrated.

In iritis and cyclitis in addition to the general increase of pericorneal injection, intolerance of light and lachrymation, there will be an increase of the exudate manifest as a faint cloud about the pupillary region.

In the choroid and retina it will be very difficult to recognize the symptoms of a focal reaction unless it has been of sufficient severity to produce a clouding of the vitreous when the patient will complain of blurring of vision and the overlying clouding is easily recognizable on ophthalmoscopic examination.

If scotoma previously existed they may be increased in size or a latent scotoma may become manifest to the patient.

The patient is not always aware of the focal reaction and at times it is impossible with the most careful observation to determine whether or not a focal reaction has occurred.

Rapid improvement in the eye symptoms following the local and constitutional reaction is quite conclusive that there was an unrecognizable focal reaction and the diseased eye was dependent upon tubercular foci.

The three reactions do not always run parallel. A focal reaction probably never occurs in the absence of a constitutional reaction. Occasionally it appears that the focal reaction occurs several hours later than the general and the local, but probably they had escaped attention until the symptoms reached their height. A very decided local reaction without any manifestation of a general is not uncommon and some local reaction usually occurs in about 80 per cent of those injected.

The dose of tuberculin to be used in a given case cannot be arbitrarily fixed; each one must be worked out according to the indications of each individual case. Children should, of course, never be subjected to large doses.

Any inflammatory disease of the eye persisting for an unusually long time without any assignable cause is an indication for the use of tuberculin for diagnostic purposes. It should be used along with serologic examination of the blood, examination of the teeth, tonsils, etc., to discover if possible the underlying cause of the trouble.

It is not necessary that the tissues of the eye actually contain tubercular bacilli and their products to be benefited by tuberculin treatment.

There is a fairly uniform belief that remote influences in the shape of diseased tonsils, abscessed teeth, etc., may be responsible for, or may keep in activity, a number of diseases of the eye and no one claims that the presence of the organisms causing the primary infection must be present in the eye to establish the co-relation between the two.

Clinically the same relation seems to exist between tubercular foci of infection and disease of the eye that exists from any other remote infection, and the tubercular influence is fully as frequent as any other.

Discussion

Dr. Ralph H. Parker, Des Moines—I think we will all agree that it is a very difficult matter to make a clinical diagnosis of tuberculosis of the eye. With the ophthalmoscope we may get a hint that a choroiditis or retinitis may be of tuberculous origin but most of us lack the fine diagnostic skill with the ophthalmoscope of Jackson who has done so much

advanced work along this line. Mutton fat deposits on descements membrane will help to differentiate a tuberculous from a syphilitic infection of the uveal tract. A keratitis of tuberculous origin has much the same steamy infiltrated appearance of the cornea as a keratitis due to syphilis. In looking over Fishberg's work on pulmonary tuberculosis I was surprised to find so much sentiment against the use of tuberculin either as a diagnostic or a curative agent. Ninety per cent of humanity have tuberculosis at some time. Sixty per cent will give a positive reaction to tuberculin if given in graduated increasing doses. So the reaction lacks definite value. There is no way to standardize the strength of tuberculin, therefore no standard dose. Those having tuberculosis are very susceptible to tuberculin, therefore the danger of flaring up a quiescent lesion by its use or adding flame to an existing active lesion. When we recall that old tuberculin is made by culturing tubercle bacilli on veal bouillon for eight weeks when the bacteria are killed by heat and filtered from the solution we realize that we are dealing with a remedy of very high potency. Personally I would not want this solution injected into my skin unless confident that it was properly prepared and that the observation of its effects were made by one having had considerable experience in work of this kind. Most of the Des Moines ophthalmologists use old tuberculin as a diagnostic aid. The test is made in cooperation with Dr. John Peck who has had a large experience with tuberculin. He has the patient under observation twenty-four hours before giving the tuberculin which gives him time to find that the patient has a normal temperature without which the tuberculin is not used. The tuberculin is usually given in the evening and a two hour record of the patient recorded for the following three days. Dr. Peck has a record of about forty cases of tuberculosis of the eye. I think practically all of these have been treated with tuberculin as a curative remedy and in all the process has either been cured or arrested. Most of these cases have been women between the ages of forty and fifty. In one a four plus Wassermann was obtained and treated for syphilis with no results. She gave a positive reaction to tuberculin and responded to the tuberculin therapy. So we must not lose sight of the fact that we may have both syphilis and tuberculosis in the same patient. I wish briefly to report a case of mine of tuberculous keratitis as being quite typical of the positive reaction to tuberculin. Mrs. D., age forty-nine. The first day following the tuberculin injection she complained of headache, dizziness and fatigue. Her temperature at 1 p. m., 99; 3 p. m., 100; 5 p. m., 99. The second day she had headache, fatigue, dizziness and slight focal reaction. Her temperature at 9 a. m., 100; 11 a. m., 103; 1 p. m., 102; 3 p. m., 104. On the third day the temperature and all other symptoms were much milder. I believe that many tuberculous eyes are improperly diagnosed. In tuberculin we have an aid in diagnosing tuberculosis of the eye that is invaluable.

THE ANATOMY OF THE APPENDIX AS RELATED TO ACUTE AND CHRONIC APPENDICITIS*

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Acute appendicitis is the most common acute surgical condition that the general practitioner or general surgeon is called upon to diagnose and treat; and in no other class of cases are the disasters of mistaken and tardy diagnosis so serious. Speaking on the subject of chronic appendicitis, before this society two years ago, Dr. Rowan of the University Hospital said, "The removal of the appendix because of a diagnosis of chronic appendicitis is one of the most frequent proceedures of general surgery." These two facts have turned my attention, both of observation and reading to the subject that I have chosen for discussion this morning.

I shall not presume, in this brief paper to point out anything particularly new, but rather to emphasize some of the more important anatomical facts about the appendix and its related anatomy. The dissecting room idea, and the one most frequently given in our standard text-books on anatomy, is, that the appendix hangs free from the lower end of the cecum in the right iliac fossa; and that its chief function is to become periodically inflamed, finally to rupture and be the source of a general peritonitis, unless removed after an accurate early diagnosis. I have had a feeling that my own experience, and that of other surgeons does not conform with the generally accepted text-book description of the position of the appendix, and its relation to the cecum and other structures in the right iliac fossa. I had come to this conclusion and was very glad to find in my reading, support for such a conclusion, that a great majority of the appendices do not hang free from the lower end of the cecum in the pelvis, but are located behind the cecum, either within the peritoneal cavity, or wholly outside the peritoneal cavity. Gladstone and Wakeley of London have made some very careful observation on the exact positions of the appendix, which confirm the impression that I had concerning its position. They have examined and made accurate observations and records on three thousand cases and have suggested a nomenclature to definitely define the different locations in which they found the appendix. As the position of an inflamed or gangrenous appendix and its relationship to adjoining parts frequently determine the site of an abscess, it is quite important we

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have a knowledge of the relative frequency of the various situations in which we may find the appendix when the abdomen is opened. In this examination of three thousand cases, in the operating room, post-mortem and dissecting room, they found that the three thousand positions, with one exception, fell into one of five positions, as follows:

1. Retrocecal or retrocolic—2076 cases, or 69 per cent. This position includes those cases where the appendix was free in the retrocolic pouch of peritoneum, held in contact with the ascending colon by a short mesentery, adherent to the cecum or colon, and behind the cecum and ascending colon, but owing to obliteration of the retrocolic pouch, entirely extraperitoneal.

2. The pelvic type—825 cases, or 27 per cent. The type where the appendix hangs free from the lower end of the cecum and if long enough, may extend into the pelvis. It is in this type, in the female, that inflammatory processes in the appendix may affect the ovary or tube or in case of inflammation in the tube and ovary, the appendix may become involved secondarily. This type may also involve the bladder or rectum and in cases of inflammation, pelvic abscesses may develop both in male and female patients. Secondary involvement of the right ureter may occur with the findings of red blood cells in the urine, to complicate the picture.

3. Subcaecal position—56 cases or 1.8 per cent. Here the appendix lies in the lower part of the iliac fossa and is usually turned to the right. Should inflammation occur in the appendix in this position and an abscess form, it may penetrate the fascia iliaca into the iliac muscle giving rise to flexion of the hip joint.

4. Anterior or pre-ilial position—27 cases or 0.9 per cent. This type is uncommon. The appendix is directed upward and forward toward the anterior abdominal wall, and toward the median line in front of the ileum. Acute inflammation in this type leads to abscess directly beneath the abdominal wall, or if operated early, we will find the appendix surrounded by omentum forming a tumor mass, size of a hen's egg which may be felt through the abdominal wall.

5. The splenic or post ilial position—15 cases or 0.5 per cent. Here is a very uncommon position and I do not recall ever having observed such a case. The appendix passes up and to the left, behind the mesentery or it may be curled up in the ileo-cecal fossa under the terminal portion of the ileum. In the post ilial position, where the tip of the appendix is directed upward and to the left beneath the mesentery, there is the probability of a mesenteric thrombosis, should inflammation occur in the appendix. Should the appendix be behind the peritoneum, it may lie in the folds of the mesenteric root, and mesenteric thrombosis is almost inevitable.

If we are looking for an explanation for the various positions in which we find the appendix, we will do well to study again the embryological development of the gastrointestinal tract, with its peritoneum. Some very rapid and wonderful changes take place during the first five weeks of embryonic life. By the fifth week, the alimentary canal has taken the form of a tube and the divisions of this tube are very plainly made out. The tube is divided into a foregut, midgut and hindgut. This division is based on blood supply, the celiac axis for the foregut, the superior mesenteric of the midgut and the inferior mesenteric for the hindgut. In this study, we are concerned solely with the midgut, for it is from this portion of the gastrointestinal tract that the appendix, cecum and terminal ileum arise. At the fifth week, the midgut loop is already large and it has been extruded into the umbilical cord. At this time, there is definite evidence of an ileo-cecal junction, a division between the small and large intestine. During the eighth and ninth week, the small intestine increases enormously in length, and about the tenth week, the return of the intestine from the umbilical cord into the abdominal cavity takes place. The small intestine slips back first and occupies a position to the right of the embryomic mesocolon, while the ceco-appendix with the commencement of the colon return last and assume a sub-hepatic position near the midline, below and to the right of the umbilical vein. During the subsequent weeks and months of foetal development, the appendix, cecum and ileum become differentiated completely and find their way downward into the right iliac fossa. The position of the ceco-appendix at this stage of development varies greatly in different specimens, depending on the degree of rotation that has taken place at the ileocolic junction.

With these embryological facts in mind, it is very clear why the appendix is found in as many different positions, but embryological development does not explain why 70 per cent of appendices occur in the recolic or retrocecal position. If it is true that 70 per cent do occur in this position, we must assume that this is the normal position. It has occurred to me that possibly this is not the normal position but because of this position, the appendix is more apt to become inflamed; and as a result, it is brought to our attention more frequently. I believe the appendix in the retrocolic or retrocecal position, either within the peritoneum or extraperitoneal is

more liable to become diseased because of impaired blood supply. The appendiceal artery is a branch of the ileocolic artery, which in turn is a branch from the right colic artery, a principal branch of the superior mesenteric. It seems quite reasonable to me that the circulation of the appendix in the retrocolic position would be very easily interfered with since the artery and vein pass behind the cecum and must be subject to pressure from the contents of the cecum. Another reason that has occurred to me as an etiological factor in the production of appendicitis in the retrocolic position is the obstruction to the lumen of the appendix due to the kinking of the appendix, either at its base or somewhere between the tip and the base. From our x-ray studies of the appendix and cecum, we know that the appendix normally fills and empties itself. Because of these obstructions to the lumen of the appendix, we have the formation of fecal concretions that are so often found in the inflamed appendix and they no doubt play their part in the etiology of acute appendicitis.

Another anatomical consideration that I want to call to your attention is the subject of lymphoid tissue and the distribution of the lymphatics of the appendix and their relation to the liver, gallbladder and its ducts, the stomach, duodenum and the pancreas. When we examine the structure of the appendix, we find that it has a serous coat which in most cases, completely surround it. The next, a muscular coat is divided into two layers, an outer longitudinal which is continuous with the three tæniæ coli and a thick circular layer of muscle fibers. The submucosa is principally made up of large masses of lymphoid tissue surrounded by sinus-like lymph spaces. The mucous coat is very similar to the mucous layer in the large bowel. Since there is such an abundance of lymphoid tissue in the appendix, it is probably very active and resists infection unless its function is impaired by conditions that I have already mentioned, namely, impaired circulation or mechanical obstruction. We were told in our text-book on anatomy that the lymph vessels for the cecum, last six inches ileum and appendix group themselves along the ileocolic artery. The main efferent trunks pass up in front of the third part of the duodenum to the group of glands around the superior mesenteric artery; and from here, they empty directly into the receptaculum chyli and thoracic duct. If this is all that there is to be said about the lymphatics of the appendix and cecum, there can be no lymphatic connection between appendix and stomach, gall tract and pancreas. Clinical observation and experience has taught us that there is a very definite relation between the disease in the ileocecal angle and the organs in the upper abdomen. Such teachers, as Deaver, Moynihan, Murphy and many others have many years ago, pointed out the relation between peptic ulcer, gall-bladder disease and a diseased appendix. Moynihan has related several cases of the co-existence of an acute appendicitis and acute cholecystitis in his own practice. Deaver has laid great emphasis in his lectures before his clinic on the close relationship between a chronic appendix and a peptic ulcer or gall-bladder disease. Rowan, in the paper referred to, above, states "It is now generally recognized, that chronic appendicitis bears an important etiological relation to gastric ulcer and cholecystitis and we find them frequently co-existent."

There we have an example of the clinician from a large experience pointing out a definite relationship between two pathological entities before the anatomists and physiologist had shown the anatomical or physiological relations or connection.

Braithwaite of Leeds, England, in a paper before the Royal College of Surgeons, demonstrated clearly the direct lymphatic relation between the ileocecal angle and the pyloric end of the stomach and the first portion of the duodenum. He was able both in animals and man to inject indigo-carmine into the apendix and see the dye pass from the appendix to the pylorus and first portion of the duodenum and head of the pancreas. His conclusion after very extensive experiments was that some of the lymph passes anteriorly over the head of the pancreas to enter that group of glands that lies in the curve of the duodenum. He also thinks that some passes from this group on to the duodenal wall and up to the pylorus. He is convinced from this that there is a very definite relation between the infected appendix and peptic ulcer either in the duodenum or pyloric end of the stomach. He also suggests that very likely many cases of indigestion with very early ulceration in stomach and duodenum may be cured by appendectomy. We can all call to mind cases of so-called "severe indigestion" where x-ray and laboratory findings for ulcer were negative, that have been relieved by appendectomy. I recall one case, a woman past fifty, where the symptoms were severe and prolonged, vomiting was a prominent symptom and a diagnosis of obstruction, due either to ulcer in duodenum or carcinoma at the pylorus was made. At operation, no pathology was found in the upper abdomen, but a chronically inflamed adherent retrocecal appendix was removed with a rapid post-operative recovery and a freedom from any symptoms whatever for four years now.

With this lymphatic relation in mind, it is im-

perative that we pay more attention to careful and accurate diagnosis of the chronically inflamed appendix. I believe that it is just as important a point of focal infection as the teeth or tonsils, and the consequences in the upper abdomen may be much more serious.

CONCLUSIONS TO BE DRAWN

1. That of the appendices that become inflamed, a large majority are retrocecal or retrocolic.
2. That they probably become diseased because of poor blood supply or mechanical obstruction of the lumen.
3. There is definite demonstrated lymphatic connection between the appendix and the digestive apparatus in the upper abdomen.

Discussion

Dr. Edward J. Harnagel, Des Moines—I agree essentially with the etiology of acute appendicitis as set forth by the essayist. He has called attention to the anatomical variations about the appendix as related to the cause of either one of these two diseases. Ever since 1886, when appendicitis was first described by Dr. Fitz, many explanations have been given for the occurrence of acute and chronic appendicitis. The first discussion of the subject probably pertained to the occurrence of a foreign body, as seeds and various objects of that nature, within the lumen of the appendix, setting up an inflammation and in that manner causing the disease to develop. That some of these things do occur, we see the evidence of almost every day—various objects which are found in the appendix or the presence of fecal material which has become hard and filled the mass of the appendix. These cases would easily come within the Doctor's concept of interference with drainage from the lumen, possibly due to some anatomical disarrangement about the point of junction of the bowel and appendix. The various causes given for the disease have ranged down to perhaps the last one, advanced by Rosenow, the selective action of bacteria, which most of us have not been able thoroughly to digest. Either it is a myth pure and simple, or it is a little too far ahead of the times for most of us fully to comprehend. In the first place, in considering the etiology of acute and chronic appendicitis, it must be remembered that these are entirely separate and distinct diseases, that they have practically nothing in common except the organ involved. By chronic appendicitis I do not mean a case in which there has been a succession of acute attacks. Those are merely recurring attacks of acute appendicitis. I refer to those cases in which the patient goes along for a long period of time with pain in the right iliac fossa or somewhere else in the abdomen, in fact it may be in the epigastrium, and the patient goes on for weeks and months and there is practically very little change in his condition from year to year, and not a whole lot of discomfort or disability; but the patient does not get well. Such a case almost never becomes acute appendicitis. A chronic appendicitis, as we see it, in all probability is due to some disarrangement in the anatomical relations about the appendix or its attachments, bringing about possibly some traction either on the appendix itself or on some structures nearby and resulting in pain either in that region or perhaps, in the epigastrium. Surgical chronic appendicitis is very rare.

MODERN TREND OF OBSTETRICS*

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During the last decade there has been unusual activity among the leaders of obstetrics. Stimulated probably by an honest desire to advance the standard of practice and to lower the mortality and morbidity of childbearing, these leaders have put forward many different methods to bring about better results. The striking feature of all this activity has been the lack of uniformity in ideas and methods and the consequent increasing divergence of opinion as to the best plan to adopt.

In 1917 in an editorial in the American Medical Journal comment was made on the fact that no material improvement in maternal mortality had been gained in a hundred years in spite of the practice of asepsis and the development of modern surgical methods.

Rudolph Holmes, writing in 1921, said, "The masters of the century ending with the beginning of the antiseptic era had developed the art of obstetrics (in contradistinction to the surgery of obstetrics) to a high degree; the skill with which they were able to deliver women in the presence of all sorts and conditions of complications developed a nicety of technique which left little or nothing for the modern authority to improve; in fact, very little has been contributed these forty years on the art of obstetrics."

In a recent article Mosher, reviewing the information gained by the questionnaire of the committee on maternal welfare of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, says that maternal morbidity and mortality have not been reduced in the last twenty years. According to the census reports 16,000 women die in the United States each year as the result of labor. In a list of sixteen countries the United States is fourteenth in point of mortality, only Spain and Belgium having a higher death rate.

This information was so contrary to my own

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idea, and I think to the general opinion, that it caused the writer of this paper to ponder over the situation and to wonder why with all our added knowledge, the results of modern obstetrical care are little, if any, better than at the beginning of the last century. One writer has shown by statistics that in New York the parturient woman fares better in the hands of the properly trained mid-wife than she does under the care of the better trained obstetrician. Asepsis and the perfected surgery of today must have saved many lives. What has happened to neutralize their benefits?

You will all remember that a few years ago the lay press published so much about twilight sleep. This method was heralded as a new discovery which made child bearing painless and almost a pleasure. In their enthusiasm lay writers even went so far as to show how babies born to mothers who had been given the scopolomine morphia anesthesia were healthier and developed more normally.

The furore caused by these publications soon passed over, and the method assumed the place it had held before such prominence was given it. This publication, however, seemed to serve as a stimulus to the medical profession to bring forth new methods of anesthesia, or some different ways of delivery apparently with the idea of attracting attention to each individual's practice.

Ceasarean section which has been of inestimable value in properly chosen cases, became too widely used by the enthusiastic surgeons with resulting increase in mortality.

One obstetrician (Reed) believing he could accurately measure the size of the foetus in utero advocated the termination of gestation by artificial means as soon as he concluded that the babe had reached the right proportions to be borne.

Another (Potter) who because of his unusual dexterity could perform the operation of podalic version very successfully, advocated that all babes be pulled out by the heels. Both of these contributions, founded as they were on the experience of the men who had given them much study and practice, marked distinct advances in the obstetric art. The indications for their use, however, as set forth by the exponents were too broad. This is especially true with the Potter version.

Writing in 1921, Potter states that he personally delivered the year previous, 1113 women of which 920 were delivered by version—400 being primiparæ and 520 multiparæ. Being an expert himself he was able to show fairly good results, but general adoption of this plan by others less expert, would certainly affect the mortality statistics very unfavorably.

Finally De Lee, apparently unable to resist the general tendency to come before the public with some new practice, published his method of prophylactic forceps. He who had up to this time, always advocated the watchful expectancy and preparedness plan, described his method of scopolamine morphin anesthesia in the first stage and routine forceps and episiotomy in the second stage. This was published in the American Journal of Obstetrics, the author of course stating that only competent obstetricians should adopt this method. What present day obstetrician would not feel that he qualified in this class?

There have been undoubtedly many other contributions of similar character to obstetric literature during this period, but these have been the most noticeable and have come from leaders in the art.

Is this activity prompted by interest in the welfare of the patient, or is it prompted by the desire to make the practice of obstetrics less arduous and more lucrative? I hope the first part of this question can be answered affirmatively, but I am constrained to believe that considerable thought has been given to the latter part of the question.

Quoting again from Holmes' article of September, 1921, he says: "The basic error has crept into the obstetric field that pregnancy and labor are pathologic entities, that child-bearing is a disease, a surgical malady which must be terminated by some spectacular procedure. There is too, insistent preachment by those who are defending a reign of terror of promiscuous operative furor by the argument that women have so degenerated that child-bearing is a phase of pathologic anatomy."

The medical student during his undergraduate days learns that these methods are practiced by the most prominent men in the field. He sees a large percentage of surgical obstetric work in the clinics. By the time he graduates he has no time for the normal case. It is indeed difficult to interest the interne in any but some complicated delivery. As a result, he goes out into practice with the wrong idea of proportion. He feels that to be successful he must resort to some of these practices in a large part of his work.

The busy practitioner chafes under the time consuming methods which his better judgment tells him are correct. He looks with envy on his colleague, the surgeon, whose nights are undisturbed and whose income is so much larger than his own. He welcomes from the men whom he looks to as teachers, such advice as will enable

him to conserve his time and enable him to charge a larger fee.

The circumstances surrounding the labor, especially in the case of the primipara, oftimes seems to justify resorting to the more prompt methods of artificial delivery. The patient is suffering pain and welcomes anything that will quickly relieve her of her misery. The patient's family, many times, are too eager for the culmination to consider carefully the possible future results of ill advised intervention. With such influences it is often easy for the attendant to adopt a method which turns waiting into action, which terminates the long drawn out natural processes of labor at the risk of adding to the danger of the life or health of either the mother or child.

I should not want to be understood as saying that the resort to these methods of artificial delivery should be criticized when they are indicated. On the contrary, I should strongly censure the obstetrician who is not wide awake enough to recognize and to properly care for whatever complications arise. I do feel that it is necessary for the attendant to have the knowledge sufficient to qualify him to decide the proper course to pursue, the principle which will keep him from swerving to the course which will conserve his own time and possibly enrich his pocketbook, and the firmness which will carry conviction with the waiting friends.

The public needs education on the value of good obstetric care. At present it is the least appreciated branch of medicine even among the educated class. People have become accustomed to require special training for the surgeon, the internist and for the other specialists, but not for the one who takes care of the mother at the most important period of her life.

In no class of work is it as necessary to be prepared with thorough knowledge of what to do and when to do it as in obstetrics. The surgeon, except in occasional emergencies, may put his patient in the hospital and, if need be, study his operation the night before he performs it. The internist may keep his patient in the hospital under observation while he decides the best course to pursue.

The general practitioner who must of necessity attend labor cases, may be called to meet an obstetric emergency where there is no time or opportunity to move the patient to the hospital. He must either act as best he can, himself, under the circumstances or must call in a consultant who usually is a surgeon. And right here is one of the common faults of present day practice. The surgeon has little knowledge of and less patience with an obstetric problem. The result is an operative delivery which may or may not have been necessary.

We need more men qualified and known to be so qualified to practice rational and successful obstetrics, geographically distributed so that they will be easy of access.

The trend of present day obstetrics in the cities is toward the hospitals. This makes the work of caring for these patients much easier. One is surrounded with all the aids which make good work possible. With good light and plenty of assistants, repair of injuries can be satisfactorily done. Hospital results should be much better than they have been. These surroundings have probably contributed in some degree to the evil of the present day. It is made so easy that instrumental delivery and repair of resultant injuries may be resorted to without sufficient indication.

I feel that in this hospital work there should be some check on us all by the review in staff meetings at stated intervals of all surgical obstetric work done, the indications and the treatment carried out being discussed freely. There is no better method of perfecting good practice than publicity and free discussion.

With the increase in the number of hospitals over the state, their location being such that they are easy of access in each county, more and more women will be taken care of in them during parturition and I hope with better results.

I would say, then, that the reason we have been unable to show a lowered mortality as compared with twenty years ago is that the bad results of what might be termed "meddlesome midwifery" counterbalance the good results which should be ours with the improved technique of today.

In criticizing this trend of the present, I would not want to do an injustice to the great number of honest, hard-working practitioners whose reward will probably be received in heaven; certainly it is not forthcoming in this world in a pecuniary way. None but the highest praise is due them as they pursue their honest way, looking only to results in life and health and for the satisfaction which comes from work well done. Rather, I would direct my remarks against the men higher up, the leaders of the art who may, because of particular skill, be able to get good results but who, by their influence, have turned the path of their students and practitioners less skillful into the same channels.

By such teaching, modern obstetrics trends away from the conservative safe plan to the more radical and dangerous methods. There will always be those who seek the lime light and who will adopt practices that are spectacular for that

purpose. In order that these individuals may not determine the general trend of practice, they should not be held in teaching positions. Our medical colleges should keep on their faculties only those professors who embody the high ideals of the profession. Thus the student would learn that the conservation of life and health is his first duty.

Our better medical journals should consider very carefully the effect of their publication of articles on the practice of their readers. Can anyone doubt that the publication of the article on prophylactic forceps above referred to, has resulted in this plan being followed by less competent obstetricians? At what cost of life and health no one knows.

If we are to show better mortality and morbidity statistics in obstetric practice in the future, we must first look upon child-bearing as a natural function which, in the large majority of cases, needs supervision only. Prenatal care has developed with the aid of government to large proportions. The prospective mother can be reached now and can be taught how to take care of herself for her own interest and for the interest of the child. An increasing percentage of these women go to the hospital for their confinement. It remains for the medical profession to care for the patient in a rational way, not interfering with natural processes as long as they are normal, but being ever watchful and ready to use the most modern methods of delivery when they are indicated.

In conclusion, I feel that I should say something that will show you that I am not altogether pessimistic in regard to the practice of this specialty which most doctors are so anxious to get away from as soon as their other work will permit them to.

There is no branch of our work which will more quickly make you friends and enlarge your clientele than this. You can all, no doubt, look back to your early experience and recall the beginning of friendships in an all-night vigil with the expectant and anxious parents, when you saw the drawn faces changed to smiling, happy ones at the successful termination of the labor. How these friends have clung to you, believed in you, trusted you, and contributed to your income during all your years of practice. I say again, no part of our work has equalled this in making friends.

We may be proud of our results in medical and surgical work if we attain somewhere near the 100 per cent mark in recoveries. But obstetrics is the only branch in which we have more patients when we are through than we had when we began.

When all is said and done in any line of work, ultimate satisfaction and happiness come only from the feeling of having done your duty conscientiously and well. The respect of your community is worth more than dollars. Let us hope that the modern trend of obstetrics may again be influenced by this thought rather than the commercial spirit which has dominated it for the past decade.

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Discussion

Dr. William L. Allen, Davenport—I want to congratulate the essayist on his broad statements and also on his courage. He has made some very strong indictments against men who have done some wonderful work, but he has qualified those indictments, and in that respect I agree with him. There are two outstanding features which I believe he intends to show in this paper. First we will consider his statements relative to the unwarranted use of the four major, as we might call them, obstetrical operations. It is not our fault that this matter has been spread all over the country and has been utilized by some women who wanted to have help. The second factor we will consider is the indictment against Potter. That certainly was a wonderful thing. Some have said that Potter made the only advance in obstetrics in 100 years. I do not believe that. But when a man makes 920 versions with but one death, those are better results than are obtained by Cesarean section. But that is no proof, because 200 of his patients were delivered before he reached them. Nevertheless we should not criticize Potter. How could any of you deliver 920 women in one year if you did it any other way? And yet he did good work, and I do not think it is right for us to criticize him and say that he did it for money. Probably most of these patients did not pay anything—very few of us get much of anything for our obstetric cases anyway. On the other hand, when a man has made versions to that extent, 920 with but one death, certainly he deserves some credit. Of course we do not believe it was always justified, and still the results are there, and why did he do it? Because American women want to have labor without any pain. Dr. Page says we have no right to do it just because American women are willing to pay for it. But isn't that the fact? That is why twilight sleep went all over the country and Cesarean section went all over the country. Many of you would prefer to place your patient

on the table and do Cesarean section rather than to give twenty-four to forty-eight hours of expectant treatment to see whether labor would not succeed without intervention. Now, the essayist admitted that all these operations are warranted under certain indications. Dr. Reed wanted to stop labor on the 280th day, operated 100 cases and lost two of them. That is too high a percentage of obstetric cases to lose.

Dr. Frank M. Fuller, Keokuk—A few years ago I had the honor to be appointed chairman of the Section on Medicine of this Society. The program committee went over the programs for a number of years and we found that about five papers on obstetrics had been presented to the Society during those years. That year we had a symposium on obstetrics. There is not a man here who has not delivered children into the world. Today we have had presented by Dr. Page one of the best papers I have ever heard read before this Society—important, significant, and thought producing. Because no matter how we may feel, obstetrics is with us all the time, and it would be a sad day for our country if we failed to so have it. We are going to have to deal with this problem all the time, but here comes an indictment in regard to the success of obstetrics in the United States. It is possibly true that we have a higher mortality than should exist, but what is the reason for it? You know what the condition of Iowa roads has been during the past few months. I saw a physician who had just gotten back from an obstetrical case. He was called when the woman was in labor, the first time he knew she was to bear a child. He took a little railroad velocipede and went as far down the road as he could get. The farmer met him in the rain with his team. The country doctor, the hard-working country doctor, went into that home and did surgical work under conditions that no surgeon would, for a moment, consent to do. And I want to say that if we should compare the surgical work done today along the same level as that upon which the country doctor does his work in obstetrics, the mortality rate would be so far above the present day mortality in obstetrics that we would be ashamed of the work being done. Therefore when we bring an indictment against this work we should consider the hard-working men who are doing obstetrical work in the agricultural sections of our state. If we are having bad results it is possibly due to the feeling doctors have that they do not want to take care of this class of cases, but it is due even more to the general feeling of the laity that labor is a physiological process, and when the woman gets through churning and washing and having the cows paged and the rest of the work done, then she goes to bed, saying, I will lie down and have the baby, so call the doctor.

Dr. Emil C. Junger, Soldier—At a meeting of this Society some years back a paper was read on this same subject and that particular essayist advocated a thing that made me mad and I have been mad ever since, and I determined to give vent to my feelings today if the speaker mentioned it again, but he did not refer to it. So I think we are making progress. If in the past I could have had a moving picture outfit to take with me in my rounds of obstetric cases and present them to you here, if you do not already know (and you must know if you live in the country) under what conditions we are compelled to work and get along, you would be able to visualize our troubles and I would soon find myself starring in the same class with Fatty Arbuckle. The essayist mentioned that we are using version and forceps and hurrying along because we are busy and because women want to avoid pains. I think that probably all those things are true. But in a great many of the cases (and if I have them in my country, where all the people are Scandinavians and the women are well built and strong, I am sure those of you who practice in the cities have them much more)—in a great many of these cases the pains the women do have do them no good and version or forceps will have to be applied in order to get through. Another reason why I want to do something besides wait for a considerable time is illustrated by the following case: The other evening I received a telephone call at my home, and in that country they say, "Doctor, come." "What is the matter?" "The wife, she is sick." That is all the information I received as to the nature of the case. "All right." I went to the drug store and procured a bottle of chloroform and two ounces of ergot to take care of the wife that was sick. When I reached the patient the pains had been on for something like twenty-four hours, the woman was tired out and all she wanted was to go to sleep and have things easy. I could have facilitated matters much if I had with me the things we are supposed to have in these cases, but anyway I gave a little chloroform and was willing to wait, but every time I got her so far under she would call me "Martin Larson! Martin Larson! Don't do that." At medical society meetings I am always taken for a Scandinavian and that is about all I can stand. However, we got along very nicely under the circumstances. But the point that made me mad when advocated here some years ago, but which I am glad to note was not mentioned today, is the examination of obstetrical cases per rectum. I do not have any quarrel with anybody that can do work that way and thereby get results, but I would not stand on common ground with any man who has an affinity for the rectum. I do the best I can where I go, and give everybody else credit for doing the same. But then, I may be in the position of the grandpa who was at the home of his daughter, and his little granddaughter came up and said, "Grandpa, why don't you have any hair on your head?" And grandpa said, "Little girl, why don't grass grow out there on the pavement?" "Oh, yes, of course, I see now—it can't get up through the concrete."

Dr. Page—Dr. Allen mentioned the criticism of Potter and De Lee. I do not criticize De Lee or Potter for perfecting these practices, I think they are distinct additions. What I criticize them for is the universal application of them to normal cases, which I do not think is right. Further, I believe they

do wrong in teaching these as routine procedures to be followed out by the general practitioner. In the case of DeLee, he made definite statements in his article to the effect that this procedure should be followed out only by competent obstetricians, but he did not say who was to judge as to whether the particular individual referred to was competent or not. That is where the fault comes in. Another point I would like to mention in closing is this: I believe that we as physicians stand in a position of authority. Simply because the woman is suffering pain and wants to be delivered by forceps should not influence us. It is our duty to do the right thing under the circumstances.

RAT BITE FEVER*

W. E. Foley, M.D., Davenport

Rat bite fever is of uncommon occurrence in this country and the following case is so typical in character as to merit publication.

E. W., a boy, aged ten years was brought to me in June, 1923, on account of mouth breathing. His tonsils were greatly enlarged and, pus being easily expressed, removal was advised. This was put off and on November 3, 1923, he was again seen, this time suffering from a group of enlarged glands in the right cervical region in which suppuration seemed iminent. Rest in bed with an ice bag was advised and one week later his mother informed me that he was running an evening fever of 102° to 104° F. Several days later a peculiar blotchy rash of purplish color, oval in outline and about 2½ cm. in diameter appeared on his neck, chest and back. This was accompanied by intense general weakness, anorexia and pains in his arms and legs. Tonsillectomy was again urged at a time when his temperature was normal. He was hospitalized on December 7, 1923 and his findings were as follows: Evening temperature of a paroxysmal type of 102° to 105° F., occurring two to three nights in succession and then disappearing for several evenings; a glandular enlargement below the right mastoid; large infected tonsils; a barely palpable spleen; several oval purplish spots on the chest and slightly irregular heart action at times. His blood picture was that of a moderate anemia; 3,500,000 reds; 7,800 whites; hemoglobin 65 per cent; blood cultures were negative as was also the urine except for a trace of albumin. Nose and throat cultures showed staphylococci and a few streptococci.

Tonsillectomy was contemplated on December 14, 1923, after several days of normal temperature but the evening before the operation his temperature rose abruptly to 105° F. It was at this time that the parents remembered that about one week previous to the glandular enlargement, the boy had been biten on the right ear by a rat. The ear bled quite profusely and was swollen for several days and then subsided and the incident was forgotten. Closer examination of the right ear revealed a small tooth mark on the upper portion which was completely healed and with no redness or induration. In view of a history of a rat bite followed by adenopathy, evening fever of a paroxysmal type, pains in the legs, a peculiar purplish rash and the blood picture of a moderate anemia a diagnosis of rat bite fever was made. Treatment was instituted at once with 0.3 gm. neosalvarsan intravenously. A marked reduction in the adenopathy was apparent in twelve hours and his paroxysmal evening temperature stopped immediately. He remained perfectly well up to December 28, 1923, when he had another attack of fever with reappearance of the rash and adenopathy. Neosalvarsan was again administered with an immediate cessation of all symptoms and he remained normal up to January 8, 1924, when he had another slight recurrence. He was treated the same as formerly and with the same result. To date he has had no further recurrence and is perfectly normal in every way except for his infected tonsils.

Rat bite fever is an infectious disease following the bite of a rat or some animal which has come in contact with rats. It is characterized by an incubation period of from one to sixty days followed by one or more attacks of intermittent or remittent fever, a characteristic rash, lymphadenitis in the infected area and muscular pains. The disease is endemic in Japan and sporadic in Europe, China and North America. Very few cases have been reported in this country and most of our information comes from Japanese series, which cases seem to be similar to those in our own literature.

The etiology is still somewhat obscure and several organisms have been thought responsible for this interesting clinical picture. Schootmuller in 1914 discovered the streptothrix muris ratti which he thought was the causative factor and in 1916 Blake of the Rockefeller Institute succeeded in isolating the organism. Litterer in 1917 reported a remarkable cure by the use of a vaccine from an organism similar to the Schootmuller. Futaki in 1915 discovered an organism which he called the spirochete morsus muris and which he thought to be the cause of the disease. His claims have been upheld by the Japanese and English workers but in this country the evidence seems to be in favor of the streptothrix muris ratti of Schootmuller and Blake. The organism is frequently found in the blood stream during the paroxysm and has also been isolated from the enlarged lymph glands.

The clinical picture of rat bite fever is quite typical, the symptoms appearing at varying intervals after the bite. The disease is usually ushered in by a chill followed by an inflammatory

*Read before the St. Luke's Hospital Staff, May 20, 1924.

reaction at the site of the wound which has often completely healed by this time. A lymphangitis and adenitis in the lymphatics of the affected area is next noted as the general symptoms become more severe. The febrile attacks are intermittent and are accompanied by weakness, nausea, headache, anorexia, anxiety and muscle pains. At the height of the fever a peculiar erythematous or papular exanthem appears on the chest, abdomen, back and extremities. The patches vary in color from red to bluish-red and in size from that of a pea to the size of a quarter. The attack usually lasts eight to twelve hours and ends by crisis with a rapid reduction in symptoms including the rash. The interval between the attacks usually lasts one to three days and is followed by a return of the cycle. The lymphangitis and adenitis however, remain until proper treatment has been instituted. The urine shows a trace of albumin during the attack but is otherwise negative. The blood picture is usually that of a moderate anemia with a slight leukopenia. The causative factor may rarely be found in the blood during the paroxysm. Several investigators have recovered the organism from the enlarged glands.

The diagnosis is usually easy and is based upon a history of a rat bite followed by attacks of fever, anorexia, headache, muscle pains, lymphangitis, adenitis and the typical rash.

The prognosis is good in cases under proper treatment. Ten per cent of the untreated cases in Europe have died.

The prophylactic treatment consists of thorough cauterization of all bites caused by rats or animals which have come in close proximity to rats. When the disease has become established salvarsan seems to be the most effective treatment. It is given in the same manner and dosage as in syphilis and the results are most striking. The clinical picture clears up within twenty-four hours, but has a tendency to recur which means that treatment must be resumed. Cases should be under observation for at least one month after apparent cure before being discharged as well.

PRIZE FOR CANCER STUDY

The commission for the distribution of the prize for cancer study founded by Doctor Sofie A. Nordoff-Jung, in agreement with the foundress, has resolved to distribute the prize from now on only every two years to the double amount of the sum allotted heretofore, that is one thousand ($1,000) dollars. The next prize will reach distribution in 1926.

ACCIDENTS AND COMPLICATIONS FOLLOWING HEMORRHOIDAL OPERATION

CHARLES J. DRUECK, M.D., Chicago
Professor of Rectal Diseases Post-Graduate Hospital and Medical School

Although a well performed hemorrhoid operation is almost uniformly successful and the patient's convalescence uneventful there are certain accidents and complications which must be guarded against. No technic is entirely free from these possibilities and the careful conduct of the after-treatment anticipates any variation from the normal course and so makes the patient's recovery more pleasant.

Pain—Every patient experiences some discomfort following an operation for hemorrhoids, while some suffer severely. There is the element of the personal equation in each case. The champions of each different type of hemorrhoidal operation argue that theirs is a comparatively painless method. There is a wide variation in the degree of pain suffered by different patients. Many of the complications occur inversely in proportion to the care of details given the operation and after-treatment. In the ligature operation, if a groove is cut deeply through the mucous membrane above the dissection so that the ligature embraces only the mass of veins, the pain will be much less severe than if the mucous membrane is included in the stump. In this operation as performed by the author, there is seldom any severe pain after a few hours. The clamp-and-cautery operation occasions much less pain than do the older types of ligature-operation although sometimes there is intense suffering after this operation. In any type of operation, much of the subsequent pain experienced depends upon the amount of pinching, bruising or pulling that has been suffered by the tissues adjacent to the structures removed, and a careful consideration of this fact will spare the patient much unnecessary suffering. A patient whose rectum is packed with a tampon will suffer more and longer than one treated otherwise.

In every hemorrhoid operation of any type or in fact any other rectal operation, our patient must be protected against every bit of avoidable pain. If the operation has been such that we expect much suffering afterward, the patient should be given morphine sulphate, gr. ¼, hypodermically, before he fully recovers consciousness. One full dose at this time will tide him over the next few hours better than a dose later when he is in the throws of pain. If there is some con-

traindication to the use of opiates we may substitute.

℞—Acetanilide.
Phenacetine .....A.A. gr. ii
Caffeine Citrate.....gr. ⅛
Mis at Sig. To be taken at once.

Spasm of the Sphincter—Much of the pain subsequent to a hemorrhoid operation is caused by spasm of the sphincter and is particularly likely to occur when this has been an important symptom before the operation, as in anal fissure or ulcerated hemorrhoids. In some of these cases, it may continue for several days even to the end of convalescence. Hot moist compresses give the most relief.

The post-operative pain is minimized by infiltrating the perianal tissues and the sphincters with a ½ of 1 per cent solution of quinine and urea hydrochloride. The anesthetic effect of this persists for several days and often the whole period of convalescence is practically free from suffering. Should this distress continue after the patient is out of the hospital the anus should be smeared with

℞—Argyrol .....zss
Ichthyol .....zi
Vaseline. .....q.s.a.d. ℥i

If only nervousness and restlessness disturb the patient, bromides or similar mild remedies will suffice, while for the local smarting or burning, hot wet dressings or the application of iodoform powder or 10 per cent ichthyol are very acceptable.

The accumulation of gas in the colon frequently is very annoying. When this does occur urge the patient to expel the gas. If left to himself he is likely to restrain the desire for fear that bleeding may occur, and consequently, often will spend a restless, wakeful night, when he might have relieved himself, without any possible harm resulting.

This voluntary restraining excites the anal sphincter to spasm and reflexly also the vesical sphincters. Packing the rectum or the use of a tube may have the same effect, and this complication may continue for several days.

Edema of the Skin sometimes occurs when the operation involves the mucocutaneous border, and particularly if skin tabs that existed have been left unremoved. This condition is very painful and is a frequent source of spasm of the sphincter as well as a contributing factor to delayed healing. Ordinarily an opiate is not needed, still there is no harm whatever in administering sufficient morphine, hypodermically, to prevent severe pain following the operation. It is better to give enough morphine to insure complete relief at once, rather than to give smaller doses repeatedly. For patients of average weight and strength ¼ grain of morphine and 1/100 grain of atropine suffices; but in case that does not give relief, this dose may be repeated in one-half hour.

Retention of Urine—If the reader will refer to the nerve trunks of these parts as they branch from the pudic nerve, he will see how intimately one pelvic organ is associated with another and then appreciate how easily the vesical sphincter is affected by any trauma of the anus or perineum. Possible retention of urine always is feared by the surgeon; still, when operating under local anesthesia, little difficulty in this direction will be experienced because less trauma is caused if the patient has been properly prepared and is not too soon disturbed after the operation. As a final part of the preparation of the patient he should invariably empty the bladder before the operation and should then be allowed but a small amount of liquids during the next twenty-four hours. He should be advised to restrain any inclination to urinate during the first twelve hours. Never suggest the subject to the patient nor try to have him void his urine within the first twelve hours after the operation. It is an effort for a healthy man to empty a partly filled bladder, while if you wait twelve hours, or until your patient's bladder is filled, he will urinate voluntarily, especially if he is allowed to slip out of bed and use a commode or to urinate while standing. Before using a catheter, various schemes should be tried to help the patient to urinate voluntarily, as, for instance, hot moist dressings applied to the anus and pubes, douching the perineum, a hot sitz bath, or opening a water faucet within hearing of the patient while he sits on a jar or stands before a urinal. With careful attention, the cases requiring catheterization are very infrequent.

Every time the patient is catheterized there is increased danger of cystitis supervening. Before instituting irrigation of the bladder I prefer to use

℞—Tr. Belladonna.....℥ss
Sodium Benzoate.....℥i
Aqua Gaultheria.....q.s.a.d. ℥iv
Sig. One teaspoonful three times daily in a glass of water between meals.

This is given to all of my patients who suffer with retention or whose urine has a foul odor.

In all cases where retention of urine exists it is wise to administer hexamethylenamine at once. Of course, the possibility of urethral stricture, vesical calculus and enlarged prostate gland or other genitourinary disturbance as a cause of the retention must be thought of.

Hemorrhage—Hemorrhage after a hemorrhoidal operation may be primary or secondary. If the details of the operative technic are carefully carried out the danger of primary hemorrhage (during or immediately following the operation) is practically negligible. If it does occur it may show itself externally or be retained within the rectum and the patient show pallor, faintness, colicky pain in the abdomen, or a desire to evacuate the bowels. If the patient is given an opportunity to relieve himself and is asked to strain down a sudden gush of dark colored blood and clots may be expelled, perhaps in considerable quantity.

If the operation is carefully performed and the severed vessels are properly tied, there is little danger of subsequent bleeding. If at the completion of the operation an oozing point is noticed, it must be thoroughly cared for before the patient is allowed to leave the table. When hemorrhage does occur, it is usually from some small oozing point that the operator thought would be controlled by pressure, or else overlooked because of an infolding edge of mucous membrane.

Secondary hemorrhage is that which occurs several days after the operation. It may follow straining by the patient, the slipping of a ligature or the tearing away of a necrotic bit during defecation. There is also the variation of coagulability of different patients' blood and the disturbed vasomotor conditions to account for its occurrence and persistence. The hemorrhage may be alarming and it is as liable to happen after one type of operation as it is after another.

When bleeding occurs, it must be attended to immediately. Astringent enemas or rectal douches such as chloride of iron is a waste of valuable time. If the bleeding cannot be seen, the patient should be anesthetized, unless his condition forbids, a speculum inserted and the colon thoroughly flushed out with hot saline solution. All clots are to be removed, the bleeding wound, when found, is ligated, or the rectum may be packed as follows: A gauze strip, two yards long, folded so as to be three inches wide by two inches thick with a stout double tape tied at the end, is seized with long rectal dressing forceps and passed through the speculum into the ampulla of the rectum. This cavity is now well packed, the tape being allowed to protrude from the anus and the speculum is withdrawn. A pad is placed over the anus and the tails of the tape are pulled taut over this pad. In this way the gauze packing is drawn down into the lower rectum and compresses that portion just above the anus. This gauze is allowed to remain in place for twenty-four hours. Then the tape is cut and allowed to relax for a few hours and then slowly and carefully removed when no further hemorrhage will recur.

Pruritis—This most annoying complication is owing to discharge from the wound evaporating upon and incrusting the newly formed epithelium. Treatment consists in keeping the parts clean by means of frequent baths of warm water, drying carefully and applying a neutral dusting powder (talcum). If the itching persists after healing is complete, it is caused by a sensory-nerve-filament in the scar tissue or to some condition other than the operation itself.

Infections—Abscess following a hemorrhoid operation usually results indirectly from trauma during the dilatation of the sphincter (most likely to occur if the stretching is hurriedly performed), a perirectal blood-vessel being ruptured and this resulting in a hematoma which later becomes infected. The resulting abscess may be either submucous or perirectal in location. Its presence should be suspected whenever there is a chill and fever (this sometimes rises to 105 degrees) accompanied with local pain or difficulty in defecation.

The treatment is immediate, thorough drainage being effected as soon as the abscess is discovered.

Stitch-hole infection may occur and if so, the stitch should be removed immediately. This stitch-infection is one of the imperative reasons for making daily examinations. Any rise of pulse rate or temperature attracts attention to this possibility and demands prompt and thorough investigation.

Erysipelas is said to be an occasional complication. The author has never had the misfortune to meet with such, and he believes that it will never occur if the patient has been carefully attended to, if it does occur the parts should be well dressed with Crede's ointment.

Delayed Healing—Occasionally convalescence does not progress as it should, healing is delayed, and the patient suffers considerable pain. In all such instances a careful search should be made for sphincteric spasm, fissure, ulcer or fistula which may have been overlooked at the time of operation or which may be due to improper post-operative treatment.

Anal Stricture—Anal stricture never should occur, and its presence demonstrates lack of attention to details, either during or after operating. If the hemorrhoid operation is properly performed, the after-treatment carefully watched, and the sphincter and wound are massaged every day, stricture cannot occur. Following the Whitehead operation, there always is some nar-

rowing. This is not serious if the wound heals by primary union; if, however, infection occurs and the wound closes by granulation, a stricture is almost certain to result, and requires dilating the anus by means of the finger or bougie. If these do not succeed it will be necessary to perform a posterior proctotomy. Following every hemorrhoid operation the surgeons must satisfy himself by examination before dismissing the patient that there is no tendency to contraction at any point. Also a month afterward the patient should be examined.

Period of Confinement—The duration of the confinement after a hemorrhoid operation varies with the type of the operation. Patients operated upon under local anesthesia need keep their bed but a few days. Following more extensive operations, the patient is confined to his bed for perhaps a week, although in most instances he may have the liberty of his room or the floor after three days. He may usually return to business even though healing may not be complete, the subsequent dressings being carried out at the office.

RECOLLECTIONS OF EDWARD HORNIBROOK—A MEDICAL CHEVALIER

W. E. Sanders, M.D., Des Moines

Dr. Hornibrook of whom Dr. W. E. Sanders speaks so reverently in the following appreciation of his life work in the practice of medicine, was born in the Province of Ontario, Canada, in 1838. His parents were natives of Ireland.

Dr. Hornibrook received his preliminary education in the public schools of Canada and his medical education at Victoria University, from which he graduated in 1861. He began practice the same year. In 1879 he came to the United States and located in Cherokee, where he continued in the practice of medicine until increasing years and failing health compelled his retirement.

Dr. Hornibrook died at his home in Cherokee June 30, 1924, at the age of eighty-six years.

The recent death of Edward Hornibrook of Cherokee at the age of eighty-six years, has taken from among us one of the most outstanding characters of our profession of the last generation.

My acquaintance with Dr. Hornibrook began, when I called him as a consultant to a farm house in Buena Vista county, in a case of diffuse peritonitis resulting from appendicitis, one afternoon in June, 1895.

After securing the history, and completing his examination, we strolled out into the apple orchard for a discussion as to what course to pursue.

My patient was a child about ten years old, who had been ill only three or four days, but was still vomiting frequently and the abdomen was much distended.

As a novice in the art of healing, I had not considered her condition so desperate, but the large experience of my consultant showed him at once

DR. EDWARD HORNIBROOK

the almost hopelessness of the situation. He explained to the family that the chances were overwhelmingly against us, whether we operated or not, but concluded by saying, "If it were my child I think I would operate." With the consent of the family, and an improvised operating table, he quickly opened the abdomen, which was already full of fluid, tied off some gangrenous omentum and established gauge drainage. The patient died in shock ten hours later.

Dr. Hornibrook was at this time in his fifty-sixth year, a man of splendid physique, with a gentle and dignified bearing that impressed me greatly. He wore a blue serge suit with a white vest, and his smoothly shaven face, usually serious, lit up at times with an effusive smile that gave an unusual charm to his personality.

He enjoyed a most extensive practice, traveling the Illinois Central railroad from Ft. Dodge to Sioux City, and north and south from the Minnesota line to Onawa. He must have spent nearly half of his time in consultation work, driving by team night and day in all kinds of weather over the country roads for a radius of thirty or forty miles.

He was a dignified, courteous and skillful consultant, especially expert in the elicitation of a clinical history, and his large and diversified experience made him a master of diagnosis without recourse to laboratory methods, which were rarely applicable to the conditions of country practice.

He was a surgeon of good practical judgment, a master of principles, rather than technique, and its practice he seemed to consider a duty rather than a line to be cultivated for its own sake.

His operations were always done in the home with the attending physician, and any neighbor or friend of the family whom he could press into service as his assistants.

In these days exploratory laparotomy was neither popular with the public nor the profession, and the necessity for a more specific diagnosis than acute abdomen, disease of the biliary tracts, or pelvic inflammatory condition, was calculated to temper one's zeal with prudence, and to make one weigh well the hazards of an undertaking that must reveal more than stringy bile or bloody sponges, and accordingly every operation undertaken was a serious challenge to one's reputation in the community.

Dr. Hornibrook was fearless in the face of definite indications and never shirked a responsibility, no matter how desperate the situation.

I remember one evening about twenty-two or twenty-three years ago, I called him on my own initiative to a case of intussusception, which I had just seen a few hours before. He arrived on a late train, and we drove about eight miles through the mud, to a farm house, arriving before midnight, much to the surprise of the family. Dr. Hornibrook sat down by the cradle, and with a serious face watched the baby for a half hour or so, scarcely saying a word. We then retired for a private consultation as was his usual custom, and after reviewing the case, he concurred in my diagnosis. We inverted the baby and gave repeated large enemas under high pressure to no avail. He then frankly stated the situation to the family, advising operation, but at the same time assuring them that an operation carried a very grave danger. They refused operation, and as we started home about midnight he remarked; "Doctor, they have relieved us of a very grave responsibility. The expectant mortality is more than 60 per cent, and the surgical not much better." The baby died two or three days later. To have operated by lamp light in a farm house at midnight required courage which he did not lack, but he knew too well the surgical limitations of the situation.

Early in my practice I called him to see a two year old child with an abdomen enormously distended with fluid, with night sweats and a low grade of fever, which I had diagnosed tuberculous peritonis. On obtaining the history, he remarked that the onset was too acute for tuberculous peritonitis and made a diagnosis of huge appendicial abscess, and advised operation, which was refused. The family was ignorant and poor, and the surroundings miserable. With the zeal of a novice, I remarked to him as we were returning to my office that I would take the child to my own home, and operate it, if I thought we could save it. He replied thoughtfully, "Never begin that, Doctor, you will find that those for whom you do most are the least grateful, and the first to make you trouble when things go against you."

A week later the abdomen ruptured at the umbilicus, and discharged a chamber full of pus, and the youngster made a rapid recovery.

A few years later I called him to see a very sick boy with streptococcus phlegmon of the forearm. The treatment in the early stage had been wet packs and watchful waiting, during which period I experienced much trouble in controlling the mother and the neighbors. We opened and drained a deep abscess after which, Dr. Hornibrook expressed the hope that the son would make a good recovery. At this juncture the mother and meddlesome neighbor, both of whom were of a very garrulous type, launched into a lauditory expatiation of the wonderful skill I had demonstrated in the management of the case in which my consultant heartily concurred. I remarked on the unmerited praise of my admirers after leaving the house, to which Dr. Hornibrook responded by saying, "Never refuse a compliment Doctor, for if you put your compliments in one pocket and your cursings in another you will be about even at the end of the year."

About 1896 we were called jointly, he for his skill and I for political reasons, into the northeastern part of the state, to see a middle-aged woman who had been ill a long time. In consultation with the family physician, Hornibrook brought out a strikingly clear history of severe persistent pain and soreness in epigastrium and right hypochondrium associated with jaundice, fever, septic chill, and sweats, followed after some weeks, by a period of pain in the right side, dyspnœa, continuous fever and eventually the sudden expectoration of a very large amount of pus, with slight improvement up to the time we saw her, several months later.

The physical findings I do not recall but the sequence of events as he skillfully elected them,

gave me, I thought, a clue to the diagnosis. After retiring for consultation, Hornibrook suggested that, inasmuch as I was the youngest of the consultants that the ethics of the profession allowed me to speak first. I made the diagnosis of biliary infection followed by subphrenic abscess, rupturing into the right pleura and discharging through a bronchus. He complimented me for my diagnosis by saying that I had expressed his opinion so clearly that he could add nothing to my own words.

We made this trip on a bitter cold night arriving about one o'clock in the morning, and finding no accommodations in the only hotel in the village, were assigned to an unheated room over a neighboring store. After getting to bed, Dr. Hornibrook, always very careful of his health, got up and placed his heavy astrakhan overcoat in his bed and wrapping himself up was soon fast asleep. Imagine my surprise, when I awakened about sunrise the following morning to find him up taking a cold sponge bath from the conventional bowl of water that sat on the stand between our beds. He must have broken the ice in the pitcher to do so.

One afternoon in company with a former classmate, I called on him in his office and he invited us to his home for dinner. After presenting us to Mrs. Hornibrook and his children, he led us into his library and gently closing the door, turned with a most serious face and said, "Gentlemen I have just this afternoon passed through one of the most serious trials of my life. A mother and father in one of the best families of our town, and in which I have been the family physician for many years have just brought to me their beautiful daughter whom I have known since childhood, and she is three or four months pregnant." The lesson so well put, and stressed with such evident sincerity could not fail to impress a young man just entering into practice.

Dr. Hornibrook was not a Catholic, but his convictions on race suicide and sex morals was quite in accord with the teachings of the Mother Church. He believed that only the most imminent danger to the life of the mother justified an interference with pregnancy and then only after a concurrence with consul. Acting on his advise I once lost a primipara from pernicious vomiting, after a most stormy pregnancy of three months.

He was at this time professor of gynecology in the Sioux City College of Medicine, and consulting gynecologist of the State Hospital for the Insane at Independence. A year or two later, he saw with me, a huge, stout middle-aged woman with intestinal obstruction, an umbilical hernia, and a history indicating the fourth or fifth month of pregnancy. There was no evidence of strangulation at the umbilicus but she was vomiting frequently, was enormously distended and suffered such pain; I had been obliged to keep her under morphine for several days.

The distention and mattress-like abdomen made examination very unsatisfactory but we thought we could make out a spherical mass filling the abdomen almost to the ensiform process. On examination under chloroform an elastic mass high in the pelvis was revealed. Dr. Hornibrook made a diagnosis of a four or five months' pregnancy complicated by a large ovarian cyst, in which I concurred, as it seemed quite reasonable.

With his usual conservatism he suggested that we might operate the cyst, and conserve the pregnancy, or spontaneous miscarriage might ensue in which event we could much more safely deal with the cyst later. Adopting the prevailing policy of the day, "When in doubt wait," I continued the morphine and after three or four more stormy days my patient was suddenly delivered of five months' triplets associated with an extreme hydramnious and made a prompt recovery. In writing him of the happy outcome I facetiously remarked that "the cyst had undergone absorption"; to which he replied with apparent sincerity that, "It had perhaps ruptured during delivery." Dr. Hornibrook had that type of mind, which considered well before arriving at a decision and then held firmly to his convictions. Moreover the reversal of a diagnosis in those days was a mark of heresy which the public could not condone. He not only understood well the science and the art of medicine, but likewise the art of the practice of medicine. He believed firmly in himself, and recognizing his own leadership, was something of a martinet in the formalities of his consultations.

I once wrote and asked him to assist me in an abdominal operation for a large pelvic tumor. In reply he suggested that in justice to himself he first be allowed the courtesy of examining the patient and concurring in the diagnosis. To this I replied that of course, I expected to defer to his superior judgment but that my patient was too poor to pay for formalities, and I had accordingly arranged for other assistance. The affair was passed in the best of grace and we frequently thereafter helped each other in our operative work.

His reputation amongst laymen was so great that he spoke with the authority of the oracle and had a masterly skill in the management of nervous cases. He once saw with me, a snappy

black-eyed middle-aged widow who had made a matrimonial pilgrimage to my town and invaded the household of a prosperous recently bereaved brother-in-law. Through some hitch in the proceedings she excused herself from the dinner table one evening and was found in a swoon on the front porch, by the anxious brother-in-law. She immediately fell to "cribbing," passing at times into stereotyped attacks of pseudo angina. In spite of all my skill and reassurance, she kept that quarter of the village in an uproar night and day for forty-eight hours by which time the inflation of her epigastrium and the deflation of my skill were at the antipodes.

To stabilize the situation and prevent a panic I called in Dr. Hornibrook at 10 o'clock in the evening. In the seclusion of the counsel chamber he said, "Doctor, this is the class of case upon which a young man makes his reputation, upon the real ones he cannot." Out of consideration for the brother-in-law who paid the bills, I suggested that he frankly state the situation to both the friends and the patient. This he did very tactfully and fortified his statement by an appeal to the pharmocopea, prescribing equal parts of tincture of aloes and tincture of asafetida to be given in teaspoonful doses every two hours until relieved.

The result was marvelous. The neighbors soon dispersed, the patient later defecated and by the following noon her deflation had reached such a point that she hastily packed her suit case and departed, saying she was going home where they had doctors who knew how to treat a sick woman.

He was once called to our village to operate a deep seated scarlatinal suppuration of the neck for a medieval-like doctor whose friendship he coveted, but assistance for sanitary reasons he preferred to eschew. Dr. Hornibrook, with that ready tact in which he was never lacking, handed the doctor a paquelin cautery and placing him at a safe distance in the corner of the room told him to "Keep it at a cherry red glow," as he might encounter grave hemorrhage and instantly need it.

He was orthodox in his practice and seemed to firmly believe that if a patient died under the recognized treatment for his condition that the results could not have been otherwise. He was surprised that a teacher in the Homeopathic School at Iowa City should have said "That this school had no need for pathology, that they only treated symptoms anyway."

The complacent disregard for pathologic groundwork and the present vogue for disfunctional diagnosis and treatment with its Hellenized hyper-, hypo-, ortho-, meta and para-syndromies might almost seem to justify the professor's opinion and to suggest that for the first time the Greek Renaissance is upon us.

Indeed the never changing principle of cause and effect in the philosophy of events is endangered when we begin to speak of physical sequence without regard to physical antecedence, and place function above structure.

These mere verbal consolations by which indefinite and hypothetical concepts are so glibly hitched up to clinical medicine are but the smoke screens behind which we conceal our ignorance; the reflections, as it were, of an effete Spencerianism.

They serve better to appease our pride than the frank acknowledgment like our Roman forbears, that "to seek the final cause of things is futile and like a virgin consecrated to the gods bears nothing."

While Dr. Hornibrook was sectarian in his faith and practice, he once said, "I always grant to any man the right to select his own religion, his own doctor and his own wife."

While he recognized his own skill and was jealous of his own right, he was none the less, fair and just to others. When in the late nineties, Dr. William Jepson was admitted to examination without preparation and granted the degree of L. R. C. S. Edinburgh, Dr. Hornibrook seemed to appreciate the honor almost as much as if it had come to himself. A few years before he had made his only trip abroad and had visited some of the leading clinics of England such as Lawson Taite and Frederick Treaves, but was much impressed with Allendale's work in Edinburgh and related that in his clinic he saw a student administering a general anesthetic with difficulty and being somewhat chagrined by the jibes of his classmates, Allendale rebuked them by saying, "Gentlemen, this doctor is performing one of the most important operations in surgery."

Dr. Hornibrook took his work and his profession seriously, and was little given to levity. Notwithstanding his gentility he had a certain austerity of manner which forbid familiarity, yet marked him as a leader of men. He seemed to follow the counsel of Washington, "to be courteous to all, but intimate with few, and let those few be well tried before you give them your confidence." His Canadian birth and education made him more the type of the English physician than the American. Although his life and training covered the period of the development of the evolutionary thought, I rarely heard him give expression on philosophic, political or religious lines.

He was a member of the Episcopalian Church and a Democrat, but he seemed to leave to the church the affairs of the spirit and to statesmen

the functions of government, believing as he was wont to say "that to know one profession was enough to engross the mind of any man."

During the middle part of life he suffered a break in health probably of a nervous character, for he once told me that for two years he was completely cut off from professional duties and that this break in his medical reading, he felt he had never quite made up.

He once dropped a remark that suggests the philosophy of life to which he probably held. He expressed the desire before retiring to make a leisurely trip around the world and when on entering New York harbor to drop dead on deck.

Those who knew him thirty years ago, will recall the pock mark on his face which he carried from his student days in Toronto.

While in quarantine, with eyes swollen shut and attended only by a negro mammy, he asked her to get him an ounce of laudanum which he took with suicidal intent as soon as left alone. He said he was much disgusted when he awakened thirty-six hours later, with the same wracking pains and the same distracting rattle of the wagons on the cobblestones below his window. "I reasoned I was going to die anyway, and that medicine was intended to relieve pain, therefore suicide was justified."

Although his long drives and broken rest was a severe strain on the physical endurance of any man, he rarely complained of fatigue. He was generally careful of his health and had for many years his buggy box swung at each corner on coil springs to break the jar of the rough roads. He had a sheep-skin bag, into which he put his feet and legs when driving in winter and a built-in space on either side of his seat where he often kept lanterns burning to warm his hands by. To one of the bows of his buggy top was hung a small bag containing tobacco, matches and his pipe, which he indulged in strict moderation.

In the fall of 1898 I became quite alarmed at the discovery in myself of a persistent light albuminuria. I was lecturing one day a week in Sioux City and I stopped off one evening, between trains, at Cherokee to consult Dr. Hornibrook about my condition. He assured me that I need not be alarmed that it was only the constant setting in my buggy driving over the rough roads and suggested that I arrange my rig as he had his and frequently change my position, sitting for a time like Abraham Lincoln, well down on the base of the scapulae, then changing occasionally, resting my elbows on my knees. As usual he reinforced his psychotherapy by prescribing three grains of Extract of Colocyuth Compound after meals, saying that a little stimulation of the liver after the hot summer would help me. The result was gratifying, after a few days of purgation my albuminuria had disappeared completely and has remained so.

He had a masterful command of terse English which made his address and writings clear and forceful. His medical history of the Pomeroy cyclone was very well done indeed. Many will recall the sanity of his remarks, when at the Sioux City meeting of the State Society in 1912, he was pressed for a discussion of a paper on the Teachings of Sex Hygiene, in the course of which he declared that he was in full accord with the expression of Arch Bishop Farley of New York, "that the less said about sex matters the better." Certainly the last decade of sex hygiene propaganda has justified his opinion.

He was always a very busy man and must have had little time for outside reading, though his memory seemed to retain all that he had ever read or heard. The long country drives gave much time for serious reflection and judicious consideration of his cases and whether at the bedside or in discussions in medical societies he gave the impression that the question for consideration was one to which he had long since given serious study and decided for himself.

One stormy night, when returning from a consultation in the outskirts of our town, my village colleague was leading the way along a path, with a lantern, when Dr. Hornibrook broke out quoting from the 119th Psalm, "Thou art a lamp unto my feet and a light unto my path."

When John Watson brought out his Scotch Idyls in the middle nineties, under the title of "Beside the Bonnie Briar Bush", Dr. Hornibrook was much impressed with the character of the old Scotch doctor in which he must have seen many reflections of himself. He also liked Burns. He remarked on one occasion, while we were being served dinner in Storm Lake, that our waitress strikingly recalled the face of Burn's Highland Mary. Indeed she had a rustic beauty so well expressed in the couplet, "Those rosy lips and sparkling glance that dwelt on me so kindly." Dr. Hornibrook possessed to high degree the spirit of self-mastery and was neither moved by flattery, nor adversity. He lived largely for his profession and his family. Though he enjoyed a large and lucrative practice for forty years he did not amass a great fortune.

On the occasion of the surprise celebration of the fiftieth anniversary of his doctorate, after he had been feted and toasted by his friends and fellow colleagues, he extemporaneously responded to the toast of "How It Feels", in a most master-

ful and dignified manner. He began by saying that he was at first somewhat at a loss to understand the purpose of the occasion, "Whether it was a reminder that the time had arrived for him to retire: whether it was an attempt to tickle the vanity of an old man, or whether it was rather, the token of a sincere friendship from his colleagues with whom he had labored so long; but that after listening to the felicitations of those who had preceded him he had resolved to accept the latter as true. He spoke for about fifteen minutes and concluded by saying, "When at last my work is done and I am laid away, I shall be most pleased, if upon the stone that marks my resting place shall be inscribed this simple epitaph. "Here lies a man who never shirked a duty." Few men are more worthy of such a remark.

I last saw him when I visited Cherokee in the interests of the Selective Service Draft in September, 1918. He was then in his eightieth year and his intellect seemed as clear as ever. Mrs. Hornibrook was then hopelessly ill and he spent much time with her. He took me out to the new city hospital and showed much pride in its construction and appointments, in which he had played a large part.

He spoke of retiring soon and I urged him as I had done before to write his memoirs, suggesting that his experience had been so full, so great, and so diversified, and that the relation of the physician to the public was so rapidly changing, that it would be a rich treasure for the generation of doctors coming on. He replied with a smile that he did not know that anyone would be especially interested in his experiences and so I presume, without a written record, there passed to his reward this great and noble man.

DR. WALTER L. BIERRING ELECTED PRESIDENT OF MEDICAL FRATERNITY

Dr. Walter L. Bierring of Des Moines was advised by the secretary of Alpha Omega Alpha Honorary Medical Fraternity under date of December 30, 1924, that he had received the unanimous vote of the directorate for president of this organization.

Doctor Bierring succeeds Dr. John L. Heffron, formerly dean of Syracuse University Medical School, who was killed in an automobile accident several months ago.

The term of the presidency is for six years ending September 1, 1930, and carries with it the chairmanship of the board of directors.

Alpha Omega Alpha was organized in 1902 and comprises thirty-two chapters located in the leading medical schools of the United States and Canada. The Canadian schools represented are the University of Toronto and McGill University of Montreal. The Iowa chapter is at the State University Medical School, of which Doctor Bierring is a member.

Membership is based entirely on scholarship and Alpha Omega Alpha bears the same relationship to the students and graduates in medicine that Phi Beta Kappa does to the Liberal Arts, and Sigma Xi to the general sciences.

By stimulating higher standards of scholarship in medicine this organization has taken an important part in promoting the great progress that medical science has undergone during the last two and three decades.

The selection of Doctor Bierring for this position is a recognition of his continued interest in medical education and the higher ideals of medical practice. Doctor Bierring was a member of the Medical Faculty of the State University for seventeen years, and after coming to Des Moines in September, 1910, he was professor of medicine in Drake University for three years. In 1922 he was elected as an honorary member of the Royal College of Physicians of Edinburgh for his services in bringing about a reciprocal agreement between Great Britain and America in matters of medical education.

THE AMERICAN BOARD OF OTOLARYNGOLOGY

The American Board of Otolaryngology was organized in Chicago on November 10. The following constitute the board of directors: Drs. Harris P. Mosher, Boston, president; Frank R. Spencer, Boulder, Colorado, vice-president; Hanau W. Loeb, St. Louis, secretary and treasurer; Thomas E. Carmody, Denver; Joseph C. Beck, Chicago; Thomas H. Halsted, Syracuse, New York; Robert C. Lynch, New Orleans; Burt R. Shurly, Detroit; Ross H. Skillern, Philadelphia; William P. Wherry, Omaha. The office of the board is at 1402 South Grand Boulevard, St. Louis, Missouri. The board comprises representatives of the five national otolaryngologic associations; the American Otological Society, the American Laryngological Association, the American Laryngological, Rhinological and Otological Society, the American Academy of Ophthalmology and Otolaryngology and the Section of Laryngology, Otology and Rhinology of the American Medical Association. The object of the association is to elevate the standard of otolaryngology, to familiarize the public with its aims and ideals, to protect the public against unqualified practitioners, to receive applications for examination in otolaryngology, to conduct examinations of such applicants, to issue certificates of qualification in otolaryngology and to perform such duties as will advance the cause of otolaryngology. The first examination will be held at the time of the meeting of the American Medical Association.

The Journal of the Iowa State Medical Society

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MORTALITY IN MATERNITY CASES

Dr. Page in his paper before the State Medical Society, 1924 meeting, considered with care the reasons why the mortality rate in maternity cases still remained so high, compared with the mortality of surgical cases. He pointed out as an important factor, the adoption by untrained men of certain operative measures employed by the masters, measures to shorten the period of labor, safe enough in their hands when directed by sound judgment and experience, but dangerous in the hands of the untrained and inexperienced. To what extent unwise interference is responsible, has not been brought out. It would probably be impossible at the present time to fix statistically the percentage of responsibility of alleged causes. Every obstetrician probably has some personal views on this subject, which may aid him in determining the wise course. For there are no doubt fatal cases of confinement which have a serious reaction on the doctor's practice, for a time at least.

The most fruitful cause of a too high mortality brought out briefly by Dr. Fuller in discussing Dr. Page's paper, is the common practice of regarding a confinement as an emergency case and not providing for safety measures at an early date.

Our own experience covers a long period in average American communities. We can recall cases in which our first knowledge of the case came from an attack of puerperal convulsions, or eclampsia, or hemorrhage, or an exhausting struggle of several days' duration. Conditions of the kinds mentioned are serious enough at best, but when the first measures of treatment are under such circumstances, the death rate will be high.

We were much interested several years ago in visiting the maternity hospitals in Paris and observing the large number of pregnant women who came to the clinics for examination. During the afternoon hours a number of elderly physicians, whom we learned were the heads of the several services, made careful physical examinations, including urinalyses; the findings were fully recorded and became a part of the record when the patient came for delivery. If it was found that hospital or home treatment was necessary to correct some abnormal condition, such treatment was instituted and the patient kept under observation. This, I was assured, lessened very materially the death rate. It rarely happened that a woman came in for confinement without a full history of the case before the obstetrician.

We observed the same precautionary measures employed at Santa Tomas Hospital in Panama, where moral and sanitary conditions have not reached the highest degree of development, but where the mortality rate was very low. Under the direction of the superintendent of the hospital every measure was employed to bring pregnant women to the hospital for examination and record, even to the extent of placing printed slips of advice in stores, particularly drug stores, and other public places for their guidance. Major Bocock, the superintendent, assured me that a fatal confinement case was rare. Our method of doing these things is quite different from those of some foreign countries, but the desired result is the same, viz: a safe confinement.

We can see some good things in the maternity measures adopted in our own state in recent years, the same in effect as in the foreign countries mentioned, but more in accordance with our awkward methods of doing things. We can easily see that under the maternity plan we have adopted, it is possible to bring to maternity cases an understanding of the necessity of consulting a physician as to her condition, the dangers lying in the way and what a safe confinement should be. We may assume that child-bearing is a physiological process, but we know there are dangers which should be avoided and can be; it is no comfort to know the woman died in physiological process. Pathologic germs are no more respectors of the physiological processes than of operations for an abdominal tumor.

The hospital or the home are matters of choice. But every woman is in duty bound to bring her family physician into the case at an early date; then shall the sudden and unexpected death become rare and no case will be an emergency case.

THE ACTIVITIES OF THE AMERICAN COLLEGE OF SURGEONS

There are many medical practitioners who look upon the College of Surgeons as a surgical organization that has for its purpose the creation of a group of surgeons who propose to control the practice of surgery in America—an aristocracy. But if such objectors will consider what has been undertaken and accomplished, they will gain an altogether different idea of the purposes of the organization.

Dr. Franklin Martin in 1905 established a Journal under the title of "Surgery, Gynecology and Obstetrics", which rapidly gained an influential position, and in 1910 organized the Clinical Congress of Surgeons of North America, which at once became a great success. As many as 4000 attended, a number that could not readily be accommodated and it became necessary to limit the attendance; for this purpose, in 1917, the American College of Surgeons took over the Clinical Congress. From a charter membership of about 400 in 1913, the College has grown to a membership of about 6000, including surgeons of the United States, Canada and South America.

Through the efforts of Dr. Franklin Martin, aided by generous contributions of prominent business men in Chicago, a suitable home has been provided, known as the John B. Murphy Memorial Building.

Another important activity, also directed by Dr. Martin, has been the standardizing of hospitals, and while the results have not been ideal, great improvement has been made in all classes of hospitals.

And now comes another important undertaking, the Gorgas Memorial Institute in the form of a Tropical and Preventive School of Medicine to be located in Panama.

The American College of Surgeons has been responsible, under the direction of the fertile brain of Dr. Franklin Martin, for the organization of the Clinical Congress of North America, the John B. Murphy Memorial, the Minimum Standardization of Hospitals, and the Gorgas Memorial—Tropical and Preventative Medicine. All of these originated with Dr. Martin. The first idea was the standardizing of the practice of surgery, placing surgery on a better basis by organizing the College of Surgery itself, and the other activities have grown out of the first and fundamental idea.

It is not strange or unexpected that criticism should develop within the organization as well as from outside. One criticism is, "that too many men are admitted to Fellowship that do not meet the requirements as originally laid down by the College, and that the College should adopt more rigid tests as to character, training and intelligence of candidates; that the membership include men who have not the highest ideals because they are either fee-splitters or generally reputed to be paying commissions under one guise or another, and that the College has made no effort to clean house," etc.

Another criticism is, "that seven years' experience in surgery subsequent to graduation from a medical school as required by the College for admission to Fellowship", would be more successful if the young surgeon was at once brought under the influence of the College before his ethical habits were formed.

Another criticism is the "low minimum standard for hospitals that receive the approval of the College." It is also contended that more thorough inspections of hospitals should be made, a fuller inquiry should be conducted as to the personnel of the staff.

Much of this criticism is worthy of serious consideration and the Regents will no doubt take up these various questions. The Regents are men of highest character, of large experience and of affairs, fully devoted to the interests of the College, and will be influenced by constructive criticism in so far as experience and sound judgment will permit. Many changes will no doubt be adopted, but the element of time must be taken into account.

POLK COUNTY MEDICAL SOCIETY

Polk County Medical Society met at Fort Des Moines Hotel December 19, 1924, in annual session. There were present about 200 members, wives and guests. After a well served Society dinner, the program of the evening was taken up.

Rev. Dr. Chas. S. Medbury, of Des Moines, delivered a most interesting and appealing address on the "Democracy of Service". As examples, Dr. Medbury presented four great characters who had served the country as First Magistrates, who represented four different types of men and who approached the ideals of service according to their individual, environmental and educational gifts, and advantages of training. The audience was deeply impressed with the thought that the safety of the republic rested

upon the "Democracy of Service", as represented by George Washington, Abraham Lincoln, Theodore Roosevelt and Woodrow Wilson.

Dr. M. L. Turner, the retiring president, who had served the Society for the year 1924 with zeal and efficiency, read an address. During this period Dr. Turner had watched the course of events with care and evolved certain thoughts in relation to methods which would be helpful in the future activities of the Society. Dr. Turner believes that the county medical society should occupy the first place and that all other local medical societies should be subordinate, and deplores the tendency to substitute special or limited organizations at the expense of the county society and that the plan of operation of the county society should be so arranged as to meet the needs of all practitioners of medicine.

Dr. W. W. Pearson, who now assumes the responsibility of directing the activities of the Polk County Medical Society, accepted the position by expressing some thoughts concerning the earlier days of the Society and in generous terms dwelt upon the work and activities of some of the older members. Such words create a feeling of gratefulness in the mind of those who see in the near future the end of their work.

Polk County Medical Society is the oldest, largest and most influential county medical society in Iowa. It was organized October 24, 1851, with seven members—Dr. A. Y. Hull, president. The seven members were Dr. A. Y. Hull of Fayette, Camp Township; Drs. D. V. Cole and Huntsman of Fort Des Moines; Drs. Collet, Gray and Plumley of Hartford, and Dr. Murdock (not a charter member). In 1924, after an existence of seventy-three years, the membership is 241.

It is no small honor to serve as president of Polk County Medical Society, and the honor has only been conferred on men who have served faithfully and loyally. We congratulate Dr. Pearson on being elected to this high position.

ADDRESS BY DR. M. L. TURNER

Retiring President Polk County Medical Society, December 19, 1924

The late Dr. Osler has said that; "Humanly speaking with the physician are the issues of life and death since upon him falls the grievous responsibility in those terrible emergencies which bring darkness and despair to so many households.

"The problems of disease are more complicated and difficult than any others with which the trained mind has to grapple; the conditions in any given case may be unlike those in any other; each case may indeed have its own problems.

"Law, constantly looking back, has its forms and procedure, its precedents and practices. Once grasped the certainties of divinity make its study a delight and its practice a pastime; but who can tell the uncertainties of medicine as an art?

"The science on which it is based is accurate and definite enough; the physics of a man's circulation are the physics of the waterworks of the town in which he lives, but once out of gear you cannot apply the same rules for the repair of one as the other.

"Variability is the law of life and as no two faces are alike so no two bodies are alike, and no two individuals will react alike under the abnormal conditions we call disease. This is the fundamental difficulty in the education of the physician, and further, there are few occupations of more satisfying character than the practice of medicine if a man can but once bring to it the philosophy of honest work, the philosophy which insists that we are here not to get all out of life about us, but to see much we can add to it."

The problems of disease being so difficult to understand and to combat, our society should develop the best means possible for training our members to meet them. Could we not develop a nearly post-graduate course by each member becoming a teacher and in turn a student?

Many of our members have been more favorably situated in their preparation of medicine than others. Some have a better analytic mind than others and can often detect conditions that may not be detected by the less alert. The less alert need the assistance of these more favored.

If we could bring our problems together and discuss them freely we would soon become more of one mind and undoubtedly more nearly correct, on many of the difficult problems that confront us. We should bring before the society the more obscure and unusual cases, and many of the common problems, so that we may become as nearly of one opinion as possible on the conditions presented, and not be held up to ridicule by an exacting public.

A difference of opinion on many of the ordinary problems of life develops a skepticism among our patients and causes many of them to turn to cults and isms. In many localities the public have turned to the different cults because of the wide range of opinion among the members of our profession. This would not occur if we worked together and discovered the facts in every case.

Many of our members are so situated they can not take the time to leave their practice for a month each year for post-graduate work. But we can make our society a good substitute. There are several societies in our county made up of men who are members of the county society. There are the staff meetings of the different hospitals which the members are expected to attend. This makes attendance at medical meetings a burden to some. Is there any good to come to the community through these different organizations that could not be developed to a larger degree through the county society?

If it is not for the benefit of the community, is it not a selfish interest that maintains?

Many of our members are interested in so many societies that it takes more of their time than is consistent with a pleasant home life; listening to radio and working cross-word puzzles for instance.

My suggestion is, that all efforts along medical lines be centered in the county society. Have one meeting each week or two per month. Have clinical papers reporting cases, or have patients presented. Limit the papers to five minutes, and presentation of patients to ten minutes. Have six or eight such papers each meeting. All of our members could appear on the program every year. Young men coming into our community, fresh from college, and interns coming to our hospitals would bring new developments in our profession to our members with benefit to all of us. Assign members to present cases and impose a fine for non-performance. There is not a member of our society who does not have one or more unusual cases every year that could be presented with profit. Many of our members that have never appeared on the programs of our meetings could be induced to present a clinical case when they would not prepare a paper.

Specimens of morbid anatomy could be used to great benefit. Necropsy reports could be presented in many cases.

Symposiums of short clinical papers would bring out different aspects of same disease and develop the best methods of treatment. One hour in presenting such cases, and one scientific paper to conclude the program. Several meetings each year could be given over to some visitors of the profession who are doing scientific work along some special line.

I believe that such a program would be fraught with more benefit to the community, and entail less expense on the members.

At a recent meeting of the Central States Pediatric Society thirty-seven such clinical papers were presented in one day.

ADDRESS BY DR. W. W. PEARSON

Acting President Polk County Medical Society, December 19, 1924

Ladies and Gentlemen, Members of the Polk County Medical Society and Guests:

It is gratifying to see so many at this annual meeting. I wish to thank the members sincerely for the honor they have conferred upon me. When I think over the attainments of many of its members I must take pride in being selected as chairman.

Our profession occupies a position second to none. The opportunities for doing good are limitless. The average physician is called upon ev-

DR. W. W. PEARSON

ery day to offer his counsel and assistance in a manner that proves his worth as a good citizen. It was pointed out in a recent editorial in the morning paper that, "when we accept membership in the medical fraternity, we accept the responsibility of devoting a part of our time and energy to the assistance of the unfortunate."

It was my privilege to become a member of the local profession twenty-eight years since. The strength of the profession at that time was something to be admired, and, during these twenty-eight years, its constant advance has been a source of great satisfaction to me. The men who represented the strength of the profession, at that time, and whom I have followed through this period, have been wedded to their work, most industrious, good students, thinking always of their duties, ever trying to improve their knowledge and skill so that they might better serve their patients.

This is the real medical society of Polk county and its membership is made up of well qualified practitioners. Then, too, there are those who devote their time exclusively to internal medicine and take high rank as consultants; our representative surgeons are well trained and are doing excellent work. In neurology, tuberculosis, gynecology and obstetrics, pediatrics, orthopedics, stomach diseases, genitourinary and dermatology we have well equipped men. It is our good fortune to have one able man, an intense worker, devoting his entire time to cardiac diseases. And, last but not least, in my own line of work, there have been many additions of which this society may be proud.

The program for the coming year is in the hands of an excellent committee. They hope to arrange each program so that no member of this organization will leave a meeting without feeling that he has been well repaid for his time. I am sure it is our wish that the members of the profession throughout the county may find it possible to be regular attendants. Let us always have before us the good of the profession and the thought of helping each other so as best to serve those needing our aid and advice.

In conclusion, let me thank you again for the honor conferred upon me and, let me assure you, that nothing will be left undone to maintain the high standard set by my predecessors.

SOCIETY PROCEEDINGS

Boone County Medical Society

The Boone County Medical Society met in regular session in Boone, December 4. Dr. M. M. Meyer of Des Moines presented a paper on Modern Conception Concerning the Heart, with Special Reference to Diagnosis of Heart Disease.

Drs. Lee Hill, F. Fordyce, and H. C. Willet of Des Moines were present and participated with the members of the society in the discussion of this paper.

This meeting is one of the best that has been held in Boone county this year.

Bremer County Medical Society

The Bremer County Medical Society met at Waverly on December 15, 1924. A turkey banquet was had at St. Josephs Mercy Hospital at 6:30 p. m., after which a scientific and business meeting was held. Dr. L. D. Jay read a paper on Eclampsia in which he brought out some of the more recent theories as to the cause of the eclamptic seizure. A general discussion was entered into by Drs. Rohlf, McDannell, Gernsey, Sparks, West, Reeves and Osnes, Dr. Jay closing. Dr. C. H. Graening then gave a resume of his attendance at the Tri-State meeting at Milwaukee in which he stressed many useful and interesting points. Some discussion by Drs. Clasen and Osnes.

The business of the society was then taken up and the president gave an address in which he urged the revival of the county society and especially of ours, and urged the medical men of the county to wake up to the benefits of regular county society meetings and to their duties to the society. It was then voted to have regular monthly meetings and to have a program at each meeting; also to hold meetings in other towns in the county when roads and weather permitted.

Dr. F. R. Sparks, of Waverly, was relected president; Dr. H. W. Clasen, of Tripoli, vice-president; Dr. M. N. Gernsey, of Waverly, relected secretary and treasurer. Dr. L. D. Jay, of Plainfield, was elected censor for a period of three years. Dr. L. C. Kern, of Waverly, was made delegate to the State Meeting, and Dr. F. R. Sparks, of Waverly, alternate. It was also moved and seconded and carried that the officers elect be a committee to see that the Bremer County Medical Society functioned as it should during 1925.

Members of county society present: Drs. F. R. Sparks, M. N. Gernsey, W. A. Rohlf, F. A. Osincup, R. E. Robinson, L. C. Kern, L. A. West and C. H. Graening, all of Waverly; Dr. H. W. Clasen, Tripoli; Dr. E. N. Osnes, Readlyn, and Dr. F. J. Epeneter, of Denver.

Visitors present: Drs. Reeves, of Allison; Call and Bigelow, of Greene; McDannell, of Nashua; Ensley, of Shellrock; Appleby, of Bristow; Youngs, of Clarksville, and Dentists Hemingway and Kromer, of Waverly.

An enjoyable and profitable meeting was held and adjourned to meet in Waverly sometime in January, 1925.

M. N. Gernsey, Sec'y.

Calhoun County Medical Society

The Calhoun County Medical Society met in Rockwell City Thursday afternoon, December 23, 1924. In addition to the papers and discussions of the program election of officers for the coming year took place. The officers of the past year were relected and are: President, Dr. W. E. McCrary, Lake City; vice-president, Dr. A. B. Carstensent, Jolley; secretary and treasurer, Dr. P. W. Van Meter, Rockwell City.

Carroll County Medical Society

The Carroll County Medical Association held a large and profitable meeting Tuesday evening at the Commercial club rooms. Before the meeting dinner was served at the Burke Hotel.

Dr. Clifford Losh of Des Moines gave a talk, illustrated with lantern slides, on Diseases of the Kidneys. Dr. Merril Meyer of Des Moines gave an illustrated talk on Diseases of the Heart. Dr. Tom Throckmorton gave an interesting review of the work of the State Medical Society.

The regular election of officers was held with the

following results: Dr. C. E. Wolfe, Coon Rapids, president; Dr. A. Kessler, Carroll, vice-president; Dr. Jessie Hudson, secretary and treasurer; Dr. A. Kessler, censor; alternate delegate to the Iowa State Medical Convention in May, Dr. L. E. Chain of Dedham.

Other doctors present at the meeting from out of the county were Dr. Jackson of Jefferson and Dr. Fordyce of Des Moines. There were twenty doctors assembled and a very profitable evening was the outcome.

Cerro Gordo County Medical Society

Dr. H. M. Hoag was elected president of the Cerro Gordo County Medical Society at a regular meeting held Tuesday night, December 16, at the Chamber of Commerce. Other officers elected were: Dr. M. J. Fitzpatrick, vice-president; Dr. J. E. Marek, secretary, and Dr. T. A. Burke, censor. A program committee was appointed by the new president to arrange for the meetings during the coming year. No other business was transacted by the county doctors. The next regular meeting will be held in January.

Cherokee County Medical Society

An interesting meeting of the Cherokee County Medical Society was held at the state hospital December 17. Six applications for membership were presented and received the society's favorable consideration.

The society voted to extend an invitation to the state division of maternity and infant hygiene to hold a series of clinics in this county in February.

Officers elected for 1925 were as follows: Dr. L. S. Brewer, president; Dr. C. H. Hall, vice-president; Dr. Paul E. Allen, secretary and treasurer; Dr. George Donohoe, delegate; Dr. P. B. Cleaves, censor.

Following the business session, refreshments were served by the hospital staff.

Davis County Medical Society

The Davis County Medical Society met Tuesday evening, December 9, at the office of the secretary, Dr. H. C. Young and enjoyed one of the most instructive meetings in the history of the organization.

Two Ottumwa doctors, Doctors Edgerly and Nelson took part in the program. Dr. Edgerly spoke on Diabetes and Insulin. Dr. Nelson on Kidney and Bladder Diseases. Dr. Nelson exhibited a number of x-ray plates.

The meeting was called to order by Dr. H. C. Finch of Pulaski. Officers for the ensuing year were as follows: President, Dr. E. R. Newland, Drakesville; vice-president, Dr. C. C. Heady, Bloomfield; secretary-treasurer, Dr. H. C. Young, Bloomfield; delegate to the State Medical Society Meeting, Dr. Clara Cronk; alternate delegate, Dr. H. C. Young.

The meeting was attended by an unusually large number of physicians.

Des Moines County Medical Society

Dr. John T. Hanna was elected president of the Des Moines County Medical Society in the meeting December 9 in the Hotel Burlington which was attended by about fifty from Burlington and surrounding cities. Dr. John C. McKitterick was elected vice-president and Dr. Horace Peoples, secretary-treasurer.

The business session was held late in the afternoon and the scientific program commenced immediately following dinner. Among those in attendance was Dr. F. Mehler of New London. He is a "regular" at these meetings and the medical society always takes occasion to welcome him. Another feature of the evening was the election of Dr. H. B. Young of Burlington to active membership. The rules were suspended and he was elected by acclamation. He has been an active member in the past.

Dr. R. W. McNealy, Chicago, Illinois, was the main speaker of the evening, telling some practical problems in surgery of blood-vessels, with a lantern slide demonstration on Aneurisms.

General principles in the treatment of veneral diseases were discussed by Dr. R. D. Herrold of Chicago and the practical features in the use of Insulin were taken up by Dr. E. F. Traut, Chicago.

Howard County Medical Society

A special called meeting of the Howard County Medical Society met at Dr. Hess' office, Cresco, December 29, 1924.

This was an annual meeting and the following officers were elected: President, Dr. W. T. Daly, Cresco; vice-president, Dr. L. W. Clark, Chester; secretary-treasurer, Dr. W. C. Hess, Cresco; delegate, Dr. Geo. Kessel, Cresco; alternate, Dr. J. W. Jinderlee, Cresco. After some general business of local importance to this society was transacted the society adjourned.

W. C. Hess, Sec'y.

Iowa County Medical Society

The Iowa County Medical Society met at the public library in Marengo, November 18, 1924.

A very interesting paper was given by Dr. Frank J. Rohners, University Hospital, Iowa City, on "Infectious Mononucleosis." A case report on "Encephalosis" was given by Dr. Henry G. Muershel, Homestead.

Fourteen members and three visiting doctors were present. Two new members, Dr. Lawrence A. Miller, North English, and Dr. P. G. Pomeroy, Marengo, were admitted.

New officers: President, Irwin J. Sinn, M.D., Williamsburg; vice-president, Louis B. Amich, M.D., Millersburg; secretary-treasurer, Ciney Rich, M.D., Williamsburg; delegate state convention, Henry G. Muershel, M.D., Homestead; alternate, Jasper L. Augustine, M.D., Ladora.

Resolutions were drawn up and passed regarding

the death of E. F. Benhart, M.D., North English.

Luncheon was served at Eby's cafe.

Ciney Rich, Sec'y-Treas.

Jasper County Medical Society

Jasper County Medical Society held its annual meeting at the Churchill Hotel, Newton, December 30, 1924.

Following a dinner at 6:30, Dr. Lee Hill of Des Moines, gave a talk and demonstration of the Dick test for scarlet fever; Dr. Wood a paper on the Treatment of Sinus Troubles at the Bedside.

A round table on the Three Stages of Labor was given by Drs. Hinshaw, Hill, Taylor and Smith, followed by a general discussion.

Dr. Myers of Des Moines gave an interesting talk on Various Heart Conditions.

New officers: Dr. C. R. Van Voohies, Prairie City, president; Dr. W. E. Lyon, Newton, vice-president; Dr. J. Leo Taylor, Monroe, secretary and treasurer.

The business session was a lively one, filled with good fellowship. This society is planning on increasing both their local and state activities during the coming year.

W. E. Lyon, Sec'y.

Marion County Medical Society

The Fifty-Second Annual Meeting of the Marion County Medical Society was held at the court house in Knoxville, Thursday, December 11, 1924, at 1:30 p. m.

Program—President's Address, Dr. C. S. Cornell, of Knoxville; The Dick Test and Technique of Administration, Dr. James E. Dyson, Des Moines; Management of the Second Stage of Labor, Dr. Frank A. May, Tracy.

J. R. Wright, Sec'y.

Monroe County Medical Society

Nearly all members of the Monroe County Medical Society were present at a regular meeting at the Miners Hospital, Wednesday night, December 1, including Dr. Stafford of Lovilia, Dr. Moran of Melrose, Dr. Chester of Haydock, Dr. Williams of Hocking, Dr. McClure of Bussey, Drs. C. B. and Burke Powell, Drs. Castles, Eschbach, Gray, Gutch and Bay, with Dr. Don C. Griswold of the State University as a special guest, who is in Albia making a thorough investigation of the recent outbreak of the rabies epidemic, with a view to inaugurating something of a preventive nature.

In an interesting talk on that subject he gave many facts and figures as to what is known of the disease, how it works, etc., and said it is much more prevalent than it used to be. It is hard to stamp out because of its irregularity. It usually shows symptoms in humans about three weeks after being exposed, but may not do so for several months and maybe years. In animals, the minimum time is about six months.

He thinks the most important thing to prevent further spread is for all dogs to be immunized by vaccination. The local veterinarians can do that at a small cost of $1.50 and the dogs thus treated need not be quarantined. Dr. Johnson has already treated about 150. The legislature will be asked to make that a law. A dog not worth that much is not worth keeping.

He has a record of the ravages in this county: forty-two dogs analyzed by the hospital laboratory, fifteen cattle, twelve horses, eight cats, two hogs and two humans.

The annual election of the society resulted in Dr. J. F. Stafford of Lovilia for president; Dr. Castles of Albia, for vice-president; Dr. Bay, secretary; Dr. C. B. Powell, delegate to the State Society, with Dr. Moran as alternate.

A move was started to form a hospital staff, to work in conjunction with the Miner's Hospital. Dr. Eschbach read the tentative articles for the proposed organization and Eschbach, Burke Powell and Gray were appointed to make further plans and call a special meeting to organize.

A fitting closing feature of the occasion was a splendid luncheon served by the hospital culinary department, which was enjoyed by all.

Plymouth County Medical Society

Plymouth County Medical Society met Tuesday, December 16, 1924, at the Sacred Heart Hospital.

Papers were read by Dr. W. P. Shepard and Dr. W. L. Downing and a general discussion followed. At the meeting the annual election of officers of the society took place. The officers are: Dr. J. McGovern, Remsen, president; Dr. J. M. Fettes, LeMars, vice-president; Dr. M. J. Joynt, Le Mars, secretary and treasurer; Dr. A. H. Jastram, Remsen, delegate to the state convention to be held in Des Moines.

In the evening a duck supper was served at the Myers cafe in honor of the visiting physicians, followed by an informal smoker and program.

Polk County Medical Society

Polk County Medical Society met for its regular annual meeting and banquet at the Hotel Fort Des Moines on Friday, December 19, 1924 at 7 p. m.

Following the banquet the regular election of officers was held. President Turner appointed as tellers Drs. Price, Rice, Ransom, Downing and Snyder.

An informal ballot was held for president-elect the result of which was as follows: Dr. Thomas A. Burcham, 61; scattering, 45.

It was moved by Dr. W. L. Bierring that the rules be suspended and that the secretary be instructed to cast a unanimous ballot for Dr. Burcham for president-elect. This was duly seconded and unanimously carried. Ballot was cast.

Nominations for vice-president were then called for. The name of Dr. R. L. Parker was proposed. It was moved by Dr. H. C. Willett that the polls be closed and the rules be suspended and the secretary be instructed to cast a unanimous ballot for Dr.

Parker for vice-president. Duly seconded and unanimously carried. Ballot was cast.

Nominations for secretary-treasurer were called for. It was moved by Dr. W. L. Bierring that the rules be suspended and that the president cast a unanimous ballot for Dr. L. K. Meredith for secretary-treasurer. Duly seconded and unanimously carried. Ballot was cast by the president.

Nominations for two delegates to the State Society meeting were called for. Moved by Dr. Downing that the outgoing delegates be relected by an unanimous ballot. Duly seconded and unanimously carried. Secretary cast a ballot for the names of Dr. Thos. Burcham and Dr. A. D. McKinley for delegates.

Dr. Osborn moved that the rules be suspended and the secretary cast a unanimous ballot for Dr. M. L. Turner for membership on the board of censors. Duly seconded and unanimously carried. Ballot was cast.

At this time the address of the evening was given by Dr. Chas. S. Medbury of the University Church of Christ.

Dr. Van Reyper of Chicago spoke for a few minutes in reference to the clinical tour of Canada and Europe planned by the Tri-State District Medical Society.

Minutes of the previous meeting were read and approved.

The applications of Dr. C. A. Block and Dr. Emanuel Quatrano were presented, having been passed by the board of censors. It was moved by Dr. A. M. Linn that these men be elected to membership to this society. Duly seconded and unanimously carried.

The following bills were presented: L. K. Meredith, $7; Iowa Printing & Supply Co., $13; bills for the annual meeting. Moved by Dr. Thos. Burcham that these bills be allowed. Duly seconded and unanimously carried.

Secretary's report was read. Treasurer's report was read. A copy of these reports have been appended to these minutes.

President Turner appointed the following men to serve on the auditing committee, to audit the books of the secretary and treasurer. Dr. Baker, chairman, Dr. Walker and Dr. Fordyce.

Following this Dr. M. L. Turner addressed the society and in closing introduced the president-elect, Dr. W. W. Pearson, who gave a short talk as incoming president.

This concluded the program for the evening and the meeting was adjourned followed by dancing and cards.

Eighty-four guests and 120 members were present.

L. K. Meredith.

Scott County Medical Society

The Scott County Medical Society held its monthly meeting December 10, 1924, just preceding a public meeting which was held in connection with the cancer week propoganda. Report was made by Dr. Donohoe that plans for the dinner-dance for the society were well under way and that the event would be sometime in January.

On November 21 the Iowa Tuberculosis Association held a clinic under the auspices of the society, Dr. John Peck of Des Moines, giving the demonstrations. Sixteen patients were examined thoroughly, the work being ably assisted by the Visiting Nurses Association and the County Health Nurses. Twenty physicians visited the clinic during its session. At 6:00 P. M. a dinner was tendered Dr. Peck which was attended by twenty-four doctors and nurses following which Dr. Peck talked concerning the diagnosis of tuberculosis in his interesting and forceful way.

The Scott County Medical Society has just finished a cancer week propaganda program. Over 3,000 pamphlets were distributed to citizens, particularly each of the civic clubs at their noon-day meetings, booklets were placed in the reading rooms of all of the organizations in the city. A movie reel, "The Reward of Courage", was shown afternoon and evening at the Family Theater with the regular program and aroused much comment. The newspapers gave much space in spite of other pressing matter, to the articles prepared for it, and excellent editorials were written concerning cancer control. December 10 a public meeting was held at the Eagles Hall Auditorium which was attended by about 350 people where the reel mentioned was shown and an excellent talk by Dr. William L. Allen on, "The Early Recognition and Cure of Cancer". Posters giving the early symptoms of cancer and the proper procedure to early diagnosis were placed in all of the doctor's offices. Lithographed posters were placed in the Chamber of Commerce and literature distributed there. The propaganda has made considerable impression on the city and the feeling of the Scott County Medical Society is that if similar measures were taken in other fields of medicine they would be of immense practical value to the public as well as the profession.

Paul A. White, Sec'y.

Tama County Medical Society

Tama County Medical Society met Tuesday, December 16 in Traer. Dinner was served at the hotel to the doctors and their wives, and the afternoon session held at the Traer public library. Dr. M. L. Allen, of Tama, read a paper on Drug Nihilism, which was followed by an interesting discussion by the physicans present. Dr. and Mrs. K. E. Fee of Toledo, attended the meeting.

Des Moines Academy of Medicine

On Wednesday, December 10, 1924, the Des Moines Academy of Medicine entertained the University Medical Faculty at dinner, which was followed by a scientific program, presented by the three new professors who have recently joined the faculty at Iowa City.

The Iowa Lutheran Hospital acted as host, and the gracious attention of Rev. F. O. Hanson, superintendent and his staff to every detail, insured the complete success of the occasion. The dinner was beautifully prepared, and the serving by the pupil nurses added a distinct charm.

The attendance from Iowa City was remarkable, in that twenty members of the faculty were present as follows: Major E. L. Titus, U. S. Medical Corps; Dr. H. J. Prentiss, anatomy; Dr. Edward Bartow, chemistry; Dr. Victor C. Myers, bio-chemistry; Dr. Clarence Van Epps, neurology; Dr. F. H. Falls, obstetrics; Dr. D. M. Griswold, hygiene; Dr. O. H. Plant, pharmacology; Dr. L. W. Dean, head specialties; Dr. P. C. Jeans, pediatrics; Dr. J. T. McClintock, physiology; Dr. C. J. Rowan, surgery; Dr. Fred M. Smith, medicine; Dr. B. W. Caldwell, superintendent University Hospital; Dr. E. M. McEwen, anatomy; Dr. F. W. Boiler, ophthalmology; Dr. Arthur Steindler, orthopedic surgery; Dr. H. L. Beye, surgery; Dr. N. G. Alcock, urology; Dr. C. S. Chase, pharmocology. President W. A. Jessup and Doctors Wheeler (nutrition), Kessler (dermatology), Mulsow (bacteriology), Orton (psychiatry), Lambe (anatomy), and Daniels (nutrition), were unable to attend.

At the opening of the program Dr. Ralph H. Parker, the president of the academy, introduced the guests with a few appropriate words pertaining to each one.

The essayists chose as their subjects:

Dr. Victor C. Myers, head of department of biochemistry, "Clinical Conditions of Alkalosis".

Dr. Fred M. Smith, head of department of medicine, "Electrocardiographic Changes Associated with Disease of the Coronary Arteries".

Dr. P. C. Jeans, head of department of pediatrics, "Post-operative Acidosis".

Each subject was well presented, and the essayist made a very agreeable impression.

At the close Dr. Walter L. Bierring expressed the felicitations on behalf of medical Des Moines, and assured the fullest cooperation with the University Medical School in maintaining its leadership in education and public welfare. Dr. H. J. Prentiss on behalf of the guests responded in his most happy vein.

The success of this academy meeting was largely due to the faithful and untiring efforts of the secretary, Dr. Merrill M. Myers.

The Des Moines Academy of Medicine is the material successor of the Des Moines Pathological Society, and considers as its particular function, the arranging of four to six meetings during the year and invites some distinguished leaders in scientific medicine to present the main address at each meeting.

About 175 physicians from Des Moines and surrounding towns were present and they all tried to show the guests that they wanted closer ties between the men of the University School of Medicine and the profession in Des Moines and vicinity.

MEDICAL NEWS NOTES

Col. D. S. Fairchild returning recently from the Panama Canal Zone, is spending a three months vacation from active duty in the Middle West and leaves late in November for New Haven, Connecticut, via Washington, D. C., and Boston, Massachusetts. In December he enters upon his duties as an instructor in the military department of Yale University where he will be engaged with medical Reserve Officers and National Guard Medical Officers of the New England states. The development is to present to these men general medical problems that affect not small groups of men but men en masse, thousands of them. This is a very different phase of medical work than many of them have been accustomed but to which Colonel Fairchild brings a trained mind and technique, through service in the Philippines during the Spanish American War, during the border trouble prior to the World War, as identified with the medical corps in a leading executive capacity and more recently in the Panama Canal Zone where he as chief surgeon of the Panama Canal Division had charge of the Panama Canal Hospital.

Here he had opportunity for return to the surgical room and although it was not his province to operate has been doing this work continually, for the real surgeon is always eager to get back into the technical and actual demonstration of his science.

Colonel Fairchild said that the duties to which he will be going at New Haven will be cumulative and interesting. It all comes in the life of an army officer who is necessarily taking a certain amount of foreign service and is assigned to departmental work in all branches of the army.

Life in Panama is interesting, says Col. Fairchild, and every American should plan to get a personal contact with this little understood part of the nation's domain. In some ways it is like the Philippines but in the Zone itself is intensely American. Here you find a strip of land five miles either side of the canal that is the most healthful place in the world and is intensely and efficiently conducted. Outside the zone there are the jungles, and the republic of Panama that is so thoroughly self-centered that during the period of a recent election no Americans were allowed within boundary of the republic. He looks to see the republic also sanitated and free from the malaria which is more or less prevalent and which provides the few malarial cases that come into the zone from the outside.

Neither do Americans realize that $2,000,000 a month is coming to the nation as tolls from ships passing through the canal. The project is not only paying its maintenance but paying dividends as well.

The status of the army at present is hard to understand, says Colonel Fairchild, for the laity does not appreciate the whys and wherefores of many things that are done. The numerical strength has been reduced by act of Congress from 280,000 to 115,000.

And yet this has not weakened the defense qualities, for he considers the National Guard as being in a better state of correlative efficiency than ever before in its history. The nation is centralizing on the training of reserve officers for good officers can always make good soldiers when given the material. The National Guard he looks upon as forming the first line of defense for the country. If the people want a standing army at any time, they can have it he said, but it has been indicated that such was not the desire. It has seemed a better part to train the officers and a minimum number of men.

There is no comparison he added between the National Guards who comprised a part of the army at the time of entry into the World War and the National Guards of today. The guards now have gained federal recognition and federal sustenance. The service used to be more contributional with both officers and men paying all or in part for their own clothing and equipment, and giving the time for camps from their own employment or profession without adequate reimbursement. The government realized the danger of unpreparedness and will never be caught again. "Not that I say there is any imminent danger of war" emphasized Colonel Fairchild. "You don't expect to die the next day when you take out life insurance but you wish to be prepared."

Colonel Fairchild will report at Boston, Massachusetts, December 1, and after a two weeks stay there will go to the definite assignment at Yale University, New Haven. His vacation has been carefully planned. He had the three months leave and decided it would be of more pleasure to take it at the Panama end of the service, where his duties are not officially terminated until December 1, and is enjoying to the utmost the glorious autumnal days in Iowa and Illinois.—Clinton Herald.

Scholarships on the Oliver-Rea Foundation for graduate study in medicine are available at the New York Post-Graduate Medical School and Hospital. Inquiries should be addressed to the dean, W. D. Cutter, 301 East Twentieth street, New York City.

No item of information has come to us that gives us more pleasure than the election of Dr. H. B. Young of Burlington to membership in the Des Moines County Medical Society.

The Burlington paper notes, "Another feature of the evening (December 9th) was the election of Dr. H. B. Young to active membership."

Dr. Young resigned a long standing and honorable membership in the Iowa State Medical Society at the reorganization period of medical societies some years ago. It was with profound regret the society accepted his resignation, and we have many times expressed the hope that he would come back to us; at last the hope has been realized.

HOSPITAL NOTES

A large gathering of physicians attended the clinic arranged at Mercy Hospital, Fort Dodge, December 2. Dr. Robert Evans of La Crosse, Wisconsin, delivered the principal address. Dr. C. J. Saunders was in charge of the arrangements.

Dr. E. F. Strohbehn was elected president of the Davenport Mercy Hospital staff at their annual election. Dr. E. C. Block, secretary and Dr. A. P. Donohue, treasurer.

The executive committee is composed of Dr. A. Hageboeck, Dr. A. B. Kuhl, Dr. R. P. Carney, Dr. F. Neufeld, and Dr. B. Schmidt.

The contract for the new $192,461 addition to the St. Luke's Methodist Hospital, Cedar Rapids, A avenue and Eleventh street, has been let, according to an official announcement by T. R. Warringer, chairman of the building committee.

Incorporation papers for the Cedar Rapids Lutheran Hospital Association were prepared for filing December 17 at a meeting of the directors of the association, marking the first organized effort toward the erection here of a $200,000 Lutheran Hospital.

PERSONAL MENTION

Dr. William D. McFaul, formerly of Miles, has been assigned as commanding officer to the Government Tuberculosis Hospital at Tucson, Arizona. This hospital has a capacity of 300 beds, known as the U. S. Veterans' Hospital No. 51.

Dr. Thomas B. Murphy of Des Moines has formed a professional alliance with Dr. George McCulloch of Des Moines.

Dr. A. M. Merritt of Pleasantville, has located in Des Moines, to be connected in ear, eye, nose and throat department of the Des Moines Polyclinic.

Dr. J. Frank Sigafoos, a graduate of the medical department of Creighton University, Omaha, has recently located in Sac City.

Dr. Will P. Shepard of Le Mars has been appointed health officer of the city of Berkeley, California, at a salary of $4,800. Dr. Shepard is a graduate of the Minnesota University of Medicine.

Dr. Thomas F. Duhigg, former Des Moines physician, who has been in the orient for the past three years, is now with the U. S. S. Ashville, at Tientsin, China.

Dr. W. von M. Gerard, local podiatrist and acting foot surgeon of the Iowa National Guard, has been reappointed by Governor Kendall as a member of the state board of podiatry examiners. Dr. Gerard returned from a meeting of the board in Des Moines at which he was chosen chairman of the board and where he presented a paper, Interpretation of the Recently Reenacted Foot Practitioners' Licensing

Act. The paper was supported by references to adjudicated cases.

Dr. Josephine Rust and Dr. Thomas Watson Cornwall, of the University of Iowa, who is a child specialist, newly arrived from Johns Hopkins University, conducted a Sheppard-Towner Clinic, for the good of mothers and children at Pomeroy, December 11. The Community Club stood sponsor.

Dr. C. S. James of Los Angeles, has been appointed consultant in bone surgery of the Pacific Veterans' Hospital of Southern California, an 800 bed institution.

Dr. Frank L. Williams, 3821 Forest avenue, Des Moines, director of the medical clinic of the veterans' bureau, has been promoted to the position of bureau regional manager, according to an announcement received from Washington December 17. Williams will succeed Capt. Dan C. Newquist, present acting regional manager.

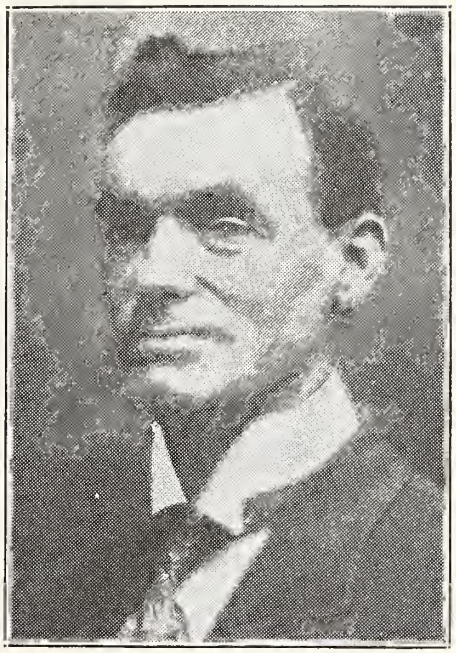
Dr. and Mrs. Martin Hoffmann, residents of Dyersville, will go to Detroit, Michigan, in the near future to make their home. Dr. M. Margaline of Omaha, Nebraska, will occupy the offices of Dr. Hoffmann in Dyersville. Dr. Hoffmann was graduated from Columbia College, and studied medicine at the Iowa University, from which institution he was graduated. He was an interne at the Harper Hospital in Detroit for a year before going to Dyersville.

OBITUARY

Dr. R. R. Chapman of Bridgewater belonged to a family of doctors who have been known as practitioners of medicine of high ideals and devoted in an unusual measure to the duties of their profession.

Dr. R. R. Chapman, the subject of this notice, was a student of Drake University thirty-two years ago and was noted for his work. Following a part course of study at Des Moines, he entered Rush Medical College, from which he graduated in 1884 and at once entered upon a successful practice of medicine at Bridgewater, Iowa.

Dr. R. R. Chapman, Bridgewater, Iowa, who graduated at Rush Medical College, Chicago, in 1894, and located in Bridgewater the same year and practiced medicine ever since that time—more than thirty years. He was born in Illinois on September 24, 1869, and died December 12, 1924, after returning with his wife and small son, Thursday evening, the 11th, from a moving picture show to his office, he fell to the floor unconscious, from cerebral hemorrhage and died at 5:15 the next morning. He had been a very successful physician, enjoyed an exceptional practice. He leaves a wife and a daughter, Hazel, a teacher in Audubon high school, a son Malcolm Robert, a student in medicine at the Iowa State University and Donald Wilton, a son, eight years old, at home, besides his father, Dr. R. U. Chapman of Des Moines, Dr. C. McG. Chapman of Des Moines, E. P. Chapman of Prescott and two sisters in Des Moines.



DR. R. R. CHAPMAN

Dr. F. H. Boucher of Marshalltown, died at the Deaconess Hospital December 1, 1924, from cerebral hemorrhage.

Dr. Boucher was born in Binghamton, New York, November 14, 1855, the son of Dr. and Mrs. James H. Boucher. Dr. Boucher, Sr., was a colonel in the Civil War. He came to Iowa City when the subject of this sketch was six years old, and later became professor of anatomy in the medical department of the State University.

Dr. F. H. Boucher received his academic education at the Iowa State University and his medical education at Jefferson Medical College, Philadelphia, from which institution he graduated in 1877.

After graduation Dr. Boucher began practice in Clarksville, and came to Marshalltown in 1885. For several years was associated with Dr. H. L. Getz.

In 1880 he married Miss Susan Judd of Brooklyn, who died in Marshalltown, and in March, 1910, he married Miss Marie McKeever, who survives him.

Dr. R. E. Everhart of Clinton died at the home of his son in Washington, D. C., November 11, 1924.

Dr. Everhart was born in Moscow, Muscatine county, Iowa, February 28, 1859. At the age of eighteen he entered Lennox Collegiate Institute, Delaware county, where he received his preliminary education. After teaching school for a time, he entered the medical department of the Iowa State University, from which he graduated in 1882. After graduation he commenced practice in Toronto, Iowa, and eighteen months later moved to Clarence, Iowa, where he practiced about one year and moved to Clinton, where he practiced until his health failed. He then engaged in the drug business and finally took up his residence with his son in Washington, D. C.

Dr. George W. Hoffman died at his home in Ridgeway, November 11, 1924.

Dr. Hoffman was born August 1, 1857, at Hagertown, Maryland. He commenced practice in 1882 at Lamont. Twelve years ago he moved to Ridgeway, where he died.

Mortimer D. Allen who died in Clinton December 26, 1924, was born October 15, 1850, at Lake Wesanken, Pennsylvania, the second son of Daniel Almira Allen. His parents and brothers preceded him in death. Dr. Allen graduated from Northwestern Medical school, March 10, 1874, and he continued his studies later at the Chicago Medical College. He came to Clinton in 1884 and continued the active practice of his profession until 1902 when failing health forced him to retire.

Eliza E. Leonard, M.D., was born in Kossuth, and received her schooling there until she was fitted to enter Parsons College. After graduation, she entered Ann Arbor, Michigan University, and took a complete course in medicine and surgery.

In early life she chose foreign missionary work for her life work. In 1895 she, under the Presbyterian board, was sent to Pekin, China, Union Medical College.

BOOK REVIEWS

DISEASES OF THE CHEST AND THE PRINCIPLES OF PHYSICAL DIAGNOSIS

By George W. Norris, M.D., Professor of Clinical Medicine in the University of Pennsylvania, and Henry R. M. Landis, M.D., Director of the Clinical and Sociological Departments of the Henry Phipps Institute of the University of Pennsylvania, with a Chapter on the Electro-Cardiograph in Heart Disease, by Edward Krumbhaar, Ph. D., M.D., Director of Laboratories of the Philadelphia General Hospital. Third Edition; Revised; 907 Pages, with 433 Illustrations. W. B. Saunders Company, 1924. Cloth, $9.50 Net.

This extremely valuable book is divided into four parts. Part one, The Examination of the Lungs, by George W. Norris, M.D. Twelve chapters are devoted to this subject. Four chapters to general considerations in diagnosis and eight chapters to anatomic considerations. Methods and Results of Percussion; Normal Variations of Pulmonary Percussion Sounds; Auscultation; Normal and Abnormal Breath Sounds; Adventitious Breath Sounds; Voice Sounds; Physical Findings in Infants and Young Children. Many illustrations are presented to make clear the points in diagnosis.

Part two: The Examination of the Circulatory System, also by Dr. Norris, consists of eight chapters, in which physical and instrumental methods are employed. In this section are considered Cardiac Arrhythmia; The Electro-cardiograph (Dr. Krumbhaar); Palpation; Percussion of the Heart; Auscultation; Heart Murmurs.

It will be seen in these two parts a correlated examination of the lungs and heart preparatory to the study of diseases of these organs.

Part three: Diseases of the Bronchi, Lungs, Pleura, and Diaphragm, by H. R. M. Landis, M.D. This important section consists of 416 pages, with many illustrations and charts.

The respiratory tract presents so many forms of disease of diagnostic importance that the space given them in this book is none too much. Dr. Landis is so thoroughly a master of English that the reading of the many confusing diagnostic features of respiratory diseases is extremely interesting and instructive.

Part four: Diseases of the Pericardium, Heart and Aorta, also written by Dr. Landis, consists of six chapters and corresponds in interest with the section on respiratory diseases.

The book as a whole, treating of diseases of the chest, is intensely interesting, and is of such vital importance to the practitioner of medicine, that it is difficult to understand why it is not in the library of every thoughtful physician.

THE ANATOMY OF THE NERVOUS SYSTEM

(Second Edition.) By Stephen W. Ranson, M.D., Ph.D., Professor of Anatomy in Northwestern University Medical School, Chicago. Second Edition, Revised. Octavo Volume of 421 Pages with 284 Illustrations, Some of Them in Colors. Philadelphia and London. W. B. Saunders Company, 1923. Cloth, $6.50 Net.

The person attempting to make adequate comment upon this book should have more knowledge of neurological anatomy than the average physician possesses. To this average physician the facts of this branch of anatomy are known mainly in a general way and in their grosser aspects. Given a certain clinical picture presenting abnormalities of or loss of function, an immediate and accurate conception of the location and nature of the causative lesion is unusual. Some time must be spent in tracing out nerve paths before the facts observed can be correctly interpreted. To render such a task more easy of accomplishment is the undoubted aim of Dr. Ranson in the volume under consideration, through the presentation of the functional interpretation of the structural details.

In the accomplishment of this purpose, the quality and style of text, excellent physical properties of the book in the way of good paper and clear printing, and the wealth of good illustrations are all of material assistance.

A feature which should not go unnoted is the presentation of the number of cases giving the symptoms of the patient as observed, with comment and questions as to their meaning, and a diagnosis of the condition, accompanied by plates showing the

location of the trouble. These cases are intended to illustrate disturbances of the various parts of the nervous system, and should serve this purpose well.

Reynolds.

COLLECTED PAPERS OF THE MAYO CLINIC AND THE MAYO FOUNDATION

Rochester, Minnesota, for 1923. Octavo of 1377 Pages, 410 Illustrations. W. B. Saunders Company, 1924. Price $13.00 Net.

Volume XV for 1923 published June, 1924, edited by Mrs. M. H. Mellish, is an indexed repository of reprints of all papers from the Mayo Clinic. For the past six years, even with the increase in size of the annual volume, it has been impossible to include all the papers of the current year, therefore, it has become necessary for the committee on publication to adopt a modified plan, that is, the publication of papers complete, abridged, abstracted, or by title.

Last year the volumes of the Mayo Clinic and the Mayo Foundation included more than 2100 pages. In view of the increasing volume of Clinic and Foundation papers, a careful selection has been made on the basis of interest to the general medical profession. Many technical papers have been published in special journals and reproduced in the Mayo Clinics or Mayo Foundation, either in abstract or by title, as seemed best to the committee. That those who are interested may profit by the work of the Clinic, a limited supply of reprints have been provided for those interested in special or technical subjects. The titles of this class of contributions may be found at the end of each section. Thus it may be observed, the entire output of the Mayo Clinic and Mayo Foundation may, in one way or another, be made accessible.

It is quite impossible to review the contents of this volume in detail. There are 148 contributions to the 1923 volume, under 218 titles, divided as follows: alimentary tract, 53; urogenital organs, 33; ductless glands, 22; blood and circulatory organs, 25; skin and syphilis, 7; head, trunk and extremities, 33; brain, spinal cord and nerves, 15; technic, 6; general miscellaneous, 24.

The distinctive feature of this volume of the Mayo Clinic, as of other volumes, is the admixture of scientific discussions with discussions relating to the practical side of medicine and surgery, by men especially trained. In looking over the index of the great variety of subjects, we are attracted to certain discussions, particularly one under the title of The Present Status of Radiation Therapy in Cancer, by Arthur U. Desjardius, M.D., in which x-ray is included. Under the head of Cancer of the Breast, in which it is stated that "The aim of radiation treatment in cancer of the breast is to diminish or delay the incidence of recurrence." The burden of this discussion is as above stated, but we are not informed as to the definite influence of radiation or x-ray in effecting a cure, a fact of intense interest, we are only advised of its influence in diminishing or delaying the incidence of recurrence, which is, of course, a matter of considerable importance. That there are elements of error is made apparent by a paper of William C. MacCarthy, under the title of Prognostic Factors in Cancer, in which it is said, in connection with a very scientific discussion on "the relation of new growth to longevity; size of growth, cellular character of growth, age of the host, duration of the lesion, relation of growth to nutrition," etc. Speaking of "the average length of life from the time the physician or surgeon sees the patient" that of prognosis, "At best it is based upon impressions and personal opinions, since there are so many and variable unknown factors in the problem." Dr. MacCarthy says further, "Recognition of the possibility of prognostic incorrectness has led many wise physicians to give guarded prognoses."

This is the impression we gained on reading the discussion on Radiation and X-ray before the American Association for Cancer Research in Boston, March 29-30, 1923.

The value and importance of these discussions is very great. In another discussion in this volume, by Dr. Carmen, is set forth the necessity of a better coordination of this work. We have much to hope from the coordinated work of the pathologist, the radiologist, the roentgenologist, and the surgeon.

There are so many other interesting subjects of discussion that we are at a loss to know where to begin. The sections on the Alimentary Tract and the Ductless Glands particularly attract us, but for reasons already stated, we must disregard the temptation to call attention to any particular subject.

THE MEDICAL DEPARTMENT OF THE UNITED STATES ARMY IN THE WORLD WAR

Prepared Under the Direction of Maj. Gen. M. W. Ireland, M.D., Surgeon General of the Army.

Vol. XI, Surgery. Part two. Vol. XI is devoted to consideration of six subjects: Empyemia, by Lieut.-Col. Edward K. Dunham, M.C. Maxillofacial Surgery, by Lieut.-Col. Robert H. Ivy, M.O.R.C. and Major Joseph D. Ely, D.O.R.C. Ophthalmology (United States), by Brig. Gen. Geo. E. de Schweinitz, M.O.R.C. Ophthalmology (American Expeditionary Forces), by Col. Allen Greenwood, M.O.R.C. Otolaryngology (United States), by Lieut.-Col. S. J. Morris, M.C. Otolaryngology (American Expeditionary Forces), by James F. McKernon, M.O.R.C.

Under the general division of Empyemia we have first, epidemiology from the combined data of twenty-three camps. Following comes Pathology, illustrated by several plates in colors and charts. Next are presented Treatment of Empyemia Cavities with Antiseptic Solutions, solutions given and methods of application, with observations as to value of the various solutions.

Then comes a consideration of the Role of the Roentgen-Ray Laboratory in the Study and Treatment of Empyemia. This chapter is illustrated by numerous plates and charts.

In chapter six is presented the Clinical Aspects of Streptococcus Pneumonia and Empyemia with Epidemiologic Conditions Predisposing to Infection with Hemolytic Streptococci.

Followed by two chapters on the surgical treatment. Chapter seven, The Surgical Treatment of Empyemia in the Acute and Chronic Stages, and chapter eight on The Surgical Treatment of the Refractory Empyemia Cavities. In chapter eight are many illustrations, showing the method of operation, the technic and results. The section on Empyemia is an exhaustive work in itself, including 392 pages, many plates and charts.

Section two, on Maxillofacial Surgery. The details of the organization of this section was set forth in volume one. At the front line only emergency operations for maxillofacial injuries were encouraged or undertaken and it was only in base hospitals and on the return of the soldiers to the United States, that extensive reparative operations were performed to correct extensive deformities of the face and jaws. This section of 162 pages presents a most interesting discussion of the many triumphs in surgery at the hands of plastic surgeons and dentists.

The same may be said of Ophthalmology, both in the United States and with the Expeditionary Forces. This section of 255 pages includes a grand total of 109,604 cases treated by the ophthalmologic division of the service.

It is quite impossible to review this volume of the Surgical History of the War in detail. This is the first volume dealing with clinical surgery of the war, and based on the contents of this volume we may rest assured that when the entire series of volumes is completed, we shall have a record of medical and surgical undertakings of which we may well be proud. It will be a monument to the executive skill and ability of Gen. Gorgas and Gen. Ireland, in conducting the medical and surgical activities of a war with a minimum preparation for so great an undertaking. We may hope that with the new organization provided for by acts of congress, and so liberally interpreted by the war department, and directed by Maj. Gen. Ireland, that if future emergencies should arise, even better results may be obtained.

A DIABETIC MANUAL FOR THE MUTUAL USE OF DOCTOR AND PATIENT

By Elliott Joslin, M.D., Clinical Professor of Medicine, Harvard University School; Consulting Physician, Boston City Hospital; Physician to New England Deaconess Hospital. Illustrated. Third Edition. Thoroughly Revised. Lea and Febiger, 1924. Price $2.00.

We have before us an exceedingly interesting volume of which we cannot say too much in praise, in that it may serve as a helpful aid to the physician and contribute greatly to the welfare of the patient. Inasmuch as we have no cure for diabetes, the length of the patient's life will depend on patient watchfulness, and a book of this kind will be an important factor.

The dedication of this volume is appropriate—"To Help Make the Home Safe for the Diabetic is the Object of this Book."

The first chapter relates to "The Diabetic Club of America and the Rules of Admission", and relates to several things that may be read with comfort and advantage, information and warnings.

In chapter two we are informed of the recent improvement in diabetic treatment.

In chapter three we read of Insulin. Then in chapter four Questions and Answers for Diabetic Patients. In subsequent chapters comes Diabetic. Arrhythmic Visits to a Doctor, Hygiene of the Diabetic, Diet of Normal and Diabetic Individuals, Treatment of Diabetes, with Diet and Insulin Acidosis, Diabetic Coma, Weight Peculiarities, and other things until we come to Dietetic Suggestions, Receipts and Menus, Foods and Their Composition, Laboratory Tests, etc.

The book reads like a story that may be read with comfort, at least to the diabetic with a hope for the future. It would be difficult to find more interesting or profitable reading for an intelligent diabetic patient than Dr. Joslin's book.

CHILD-HEALTH LIBRARY

A Series of Ten Books by Practicing Specialists of the Highest Standing, Giving the Latest and Most Authoritative Information on Every Phase of Child Health. Edited by John C. Gebhart. Introduction by Haven Emerson, M.D., Formerly Health Commissioner of New York City; Professor of Public Health Administration, College of Physicians and Surgeons, Columbia University. Robert K. Haas, Inc., Publishers, 218 West 40th St., New York City.

This series of ten volumes of vest pocket size is issued for the purpose of supplying the practicing physician with a little volume which may be placed in the hands of patients who may carry out instructions in relation to matters of health concerning various questions which may occur in connection with the welfare of the child, not intended to take the place of the physician, but to supplement the directions of the physician. These ten volumes deal with as many important subjects.

Vol. I. Pre-Natal Care and the Baby's Birth, by Dr. Harbeck Halsted.

Vol. II. Babies—Their Feeding and Care, by Dr. Louis C. Schroeder.

Vol. III. The Neglected Age—The Child from Two to Six, by Dr. Bernard S. Denzer.

Vol. IV. Dangers of the School Age, by Dr. Alice Asserson.

Vol. V. Communicable Diseases of Childhood, by Dr. Stafford McLean.

Vol. VI. Hygiene of the Mouth and Teeth, by Thaddeus P. Hyatt, D.D.S.

Vol. VII. What Children of Various Ages Eat, by Lucy H. Gillett, M.A.

Vol. VIII. How Children Ought to Grow, by John C. Gebhart.

Vol. IX. Psychology of the Child, by David Mitchell, Ph.D.

Vol. X. Educational Problems, by David Mitchell, Ph.D.

From the titles given may be seen the value of this little series and the advantage that may arise from the distribution among mothers and those responsible for the growth of children of all the volumes or such volumes as may have a special application. It may be seen also the help such volumes may serve in a physician's practice.

FERTILITY AND STERILITY IN HUMAN MARRIAGES

By Edward Reynolds, M.D., Boston, Massachusetts, and Donald Macomber, M.D., Boston, Massachusetts. With a Section on the "Determining Causes of Male Sterility", by Edward L. Young, Jr., M.D., Boston, Massachusetts. Octavo Volume of 285 Pages, Illustrated. W. B. Saunders Company, 1924. Cloth, $5.00 Net.

This very interesting book prepared by authors of high repute, treats of a subject of common interest. In the preface it is pointed out how, and by whom the investigation should be made, to make the inquiry of value. It was with this thought in mind that Dr. Reynolds, a gynecologist, Dr. Macomber and Dr. Young, Jr., a genitourinary surgeon, joined in preparing this book. The division of work included a gynecologist familiar with the technic of examining the female genital organs, a genitourinary surgeon trained in the examination of the male organs and secretions, and a general practitioner competent to make accurate general examinations. The united labors of such a group has produced a work of great value.

The plan of arrangement is a chapter on Fertility and Sterility as a Biologic Problem, which includes a number of interesting subjects. Followed by a chapter on The Frequency of Sterile Marriages. This chapter is statistical in character and is admitted to be attended with many difficulties as may be easily understood from the nature of the case.

Then comes a chapter on The Mechanism of Fertility and Its Failures, which has to do with the physiology of reproduction, the spermatozoa and the ovum and the organs of production.

Section two considers The Determining Causes of Sterility in the Female, and comes under the domain of the gynecologist and includes conditions attending Chronic Passive Congestion of the Pelvic Organs, Complete and Partial Arrest of Development, The Specific and Non-Specific Infections, which are considered as important factors in producing sterility, and lastly, as relates to the female, Dyspareunia, Displacements, and Neoplasms."

Section three, The Determining Causes of Sterility in the Male. We now transfer the investigation to the genito-urinary surgeon, Dr. Young, who considers the biologic questions relating to the male, and then takes up the diseases of the male organs of generation and their effects on reproduction.

Section four considers Relative Infertility, The Marital Habit, and the Prevention of Sterility. In this section a number of interesting subjects are considered. The first is the sterility of the marriage from Relative Infertility of the Partners, Miscarriages and the Management of Pregnancy, The Effects of Trauma, One Child Sterility, Prevention of Sterility, etc.

Section five deals with The Clinical Conduct of a Case. This includes the examination and the surgery of sterility. The importance of the subject renders this book interesting reading.

OPERATIVE SURGERY, COVERING THE OPERATIVE TECHNIC INVOLVED IN THE OPERATIONS OF GENERAL AND SPECIAL SURGERY

By Warren Stone Bickham, M.D., F.A.C.S., Former Surgeon in Charge of General Surgery, Manhattan State Hospital, New York; Former Visiting Surgeon to Charity and to Touro Hospitals, New Orleans. In Six Octavo Volumes, Totaling Approximately 5,400 Pages, with 6,378 Illustrations. Separate Desk Index Volume. W. B. Saunders Company.

We now have before us Volume IV containing 842 pages, with 772 illustrations. The volumes are sold by subscription only, at $10.00 per volume.

Volume IV includes thoracic and abdominal surgery. Six chapters are devoted to surgery of organs within the chest, operations upon the pericardium; upon the heart; upon the great intrathoracic vessels of the heart; upon the thoracic portion of the esophagus. Upon intrathoracic structure and upon the diaphragm and contiguous structures.

Passing from operations upon the thoracic organs, comes operations upon the abdomen, which includes the greater part of the volume. The chapter upon operations for hernia includes the methods employed by surgeons who have contributed important facts to this branch of surgical work and is profusely illustrated.

The chapter on peritoneal adhesions and operations, diffuse septic peritonitis, and operations for intraperitoneal abscess, are extremely interesting and important, for no other procedure in surgery demands a greater accuracy in technic to secure successful results.

The chapter on surgery of the stomach presents the approved technic worked out by many surgeons and is well illustrated. Operative surgery upon the pancreas, spleen, liver, gall-bladder and bile ducts represents the best on these various subjects.

The numerous illustrations which accompany each subject treated are extremely helpful and the paper

and mechanical work renders this volume equally with the preceding volumes, and very attractive in appearance.

HOSPITAL ORGANIZATION AND OPERATION

By Frank E. Chapman, Director, Mount Sinai Hospital of Cleveland. The Macmillan Company, New York, 1924.

Hospital organization has now become so important a feature in our social life that a book such as we have before us seems a necessity.

Some years ago Dr. A. J. Ochsner of Chicago prepared a rather large volume on the many features involved in hospital construction and organization. The book was written about twenty years ago, and was much consulted for a time. But the time had not yet come for a full modern hospital organization. Since Dr. Ochsner's book was written many papers and discussions, and also hospital associations have been formed, which have quite changed the attitude of the public toward hospitals in the past quarter of a century. And a hospital is now quite as much a part of a community organization as even schools and churches.

The great medical organizations have undertaken hospital activities in the direction of standardization. With all these activities there are evidences of confusion and waste in administration.

A serious hindrance in bringing hospitals to an ideal state of efficiency is the sentimental and religious elements often involved. But it would seem that the fundamental idea of whatever religious or social principles might be involved, the efficient operation of a hospital could be considered in itself.

Apparently, with this idea in mind, the author has entered in great detail into every feature and principle of organization and operation, and we would recommend to managing boards of hospitals of every kind and of all sizes, with many or few beds, to consult this book. It will be found a useful manual of efficiency.

THE MEDICAL CLINICS OF NORTH AMERICA

May, 1924. Price Per Clinic Year, Paper, $12.00 Net, Cloth, $16.00. W. B. Saunders Company, Philadelphia and London.

The May number is a McGill University number, which we shall examine with much interest. We have passed from one city of the United States to another and now come to Canada. The fine hospitals of Montreal and the skillful physicians we have met there, inspire us with great faith.

We come first to Victoria Hospital, a clinic by Dr. C. F. Moffatt on The Electrocardiogram in Prognosis, illustrated by three cases showing evidence of degenerative arterial changes with hypertension. At the same hospital Dr. Charles F. Martin presents a series of four cases of Pernicious Anemia. Also a series of cases on the Successful Treatment of Asthma and Related Conditions, by Dr. A. T. Henderson.

At Montreal General Hospital Dr. I. M. Rabinowitch presents Certain Problems in the Treatment of Diabetes Mellitus and at Victoria Hospital Dr. Edward H. Mason continues the subject under the title of Insulin, Carbohydrate Tolerance and Weight. Dr. H. P. Wright presents at Victoria Hospital an interesting clinic on The Effect of Light in the Treatment of Disease.

We pass on to a clinic at Montreal General Hospital by Dr. J. A. Nutter on A Study of Sciatic Pain, illustrated by twelve cases, very interesting and instructive.

At the Children's Memorial Hospital Dr. A. Mackenzie Forbes presents The Early Treatment of Poliomyelitis and Dr. Armour Robertson Spina Bifida Occulta with Spinal Cord Lesion.

Dr. D. Grant Campbell at the Montreal General Hospital points out the danger of Pregnancy in Heart Disease, which is of particular interest to obstetricians, and another clinic by Dr. F. G. Finley on Mitral Stenosis with Venous Thrombosis.

There are other clinics of equal interest which we are obliged to pass over. We may only say that the McGill University Clinic equals any that has come to our notice and will be read with interest.

THE TREATMENT OF THE COMMON DISORDERS OF DIGESTION

A Handbook for Physicians and Students. By John L. Rantor, Ph.D., M.D., Chief in Gastrointestinal Diseases, Vanderbilt Clinic, Columbia University; Associate Gastroenterologist and Associate Roentgenologist, Montefiore Hospital for Chronic Diseases, New York City. Illustrated. C. V. Mosby Company, St. Louis, 1924. Price, $4.75.

The value of this book lies in the way of furnishing the practitioner of medicine with methods of diagnosis and treatment of the common disorders of digestion and meets the needs of a large class of physicians. The conditions involved are well known, but the principles to be employed demand a careful consideration of the facts. Functional digestive disorders demand an inquiry as to many facts, state of mind, dietary indiscretions, manner of eating, etc. Ptosis and asthenic states are rather common, but an accurate diagnosis is essential. The syndrome of gastric irritation demands a careful investigation, for diet and rest are of the first importance, associated with a carefully considered drug therapy.

Chapters five and six presents a study of gastric and duodenal ulcers. Chapters seven and eight present important considerations in relation to delayed gastric emptying and constipation which are factors in a large number of troublesome digestive disturbances.

Another form of digestive disturbance is achylia gastrica, presented in chapter eleven, in which is pointed out the importance of a differential diagnosis. Other matters in relation to digestive dis-

turbances are gall-bladder diseases, diarrheas, headaches, etc.

This is a very helpful book and points out to the practitioner many things which arise in everyday practice which are too often overlooked or assigned to other conditions to be relieved by a gall-bladder or appendix operation, which prove failures in the end.

PATHOLOGICAL TECHNIQUE

By Frank Burr Mallory, A.M., M.D., Pathologist to the Boston City Hospital, and James Homer Wright, A.M., M.D., S.D., Pathologist to the Massachusetts General Hospital; Assistant Professor of Pathology, Harvard Medical School, Eighth Edition, Revised and Enlarged; 666 Pages; 180 Illustrations; Philadelphia and London. W. B. Saunders Company, 1924.

Mallory and Wrights' Pathological Technique has been for many years a standard guide found on the shelves of practically every laboratory in America. The new edition has been brought adequately up to date by removing that which was obsolete and including the new technical procedures which are of value to clinical medicine. This volume is of such a nature that the experienced laboratory worker will not be without it, and to the new beginner it is almost as essential as the Bunsen burner.

Glomset.

SOCIAL CONTROL OF THE FEEBLE-MINDED

A Study of Social Problems and Attitudes in Relation to Problems of Mental Deficiency, by Stanley P. Davis, Ph.D., Executive Secretary, Committee on Mental Hygiene, N. Y. State Charities Aid Association. Published by the National Committee for Mental Hygiene, Inc., 370 Seventh Ave., New York City, 1923.

This important book takes up the problem affecting society today, in a manner profoundly interesting in that which it concerns the responsibility of the individual of his ability to get along in our complex civilization.

The first chapter considers the nature of the problem of who should be considered as feebleminded, the idiot, imbecile and the moron. The person who can support himself and those dependent upon him and can meet the ordinary demands of society, but who, subjected to strain, breaks down and finds himself out of joint with society and fails, as we find now in the psychiatric hospitals of the War Veterans' Bureau.

In chapter two is considered the Early Treatment of the Period of Physiological Education, the results of which must necessarily depend upon who are feebleminded and the class to which they belong, considerable historical data is presented.

In chapter three are presented the Influence of Heredity and Prevalence of Feeblemindedness and a consideration of the Mendelian laws, and the development and application of the Binet-Simon method of intelligence testing.

Chapter four presents the Social Indictment of the Feebleminded, and in chapter five what is termed The Alarmist Stage, which includes the social control of the feebleminded in which the various methods of segregation and eugenics are employed to prevent the propagation of the unfit.

Reynolds.

NEW ADVERTISER

H. D. Fisher, whose advertisement appears on page iv announces he will make special rates to members of the Iowa State Medical Society. Mr. Fisher has had many years of successful collection experience and has a way of collecting that does not produce hard feelings and ill will. He also gets the money.

NEW AND NON-OFFICIAL REMEDIES

In addition to the articles enumerated in our letter of October 28, the following have been accepted:

Hoffmann-LaRoche Chemical Works:
- Secacornin.
- Thigenol.

Intarvin Co., Inc.:
- Intarvin.

Eli Lilly and Co.:
- Ampules Ouabain, 0.0005 Gm. (1/128 grain)—Lilly.
- Hypodermic Tablets Strophanthin 1/100 grain—Lilly.
- Hypodermic Tablets Strophanthin 1/120 grain—Lilly.
- Iletin (Insulin—Lilly) U-80.

Merck and Co.:
- Benzyl Succinate—Merck.

Parke, Davis and Co.:
- Ampoules Adrenalin Chloride Solution ℞ 2, 1:10000, 1 c.c.
- Ampoules Adrenalin Chloride Solution ℞ 1, 1:2600, 1 c.c.
- Ampoules Adrenalin Chloride Solution 1:1000, 1 c.c.

Sharp and Dohme:
- Hypodermic Tablets Strophanthin (1/200 grain)—S. and D.
- Ergotole.
- Ampules Ergot, 1 c.c.

E. R. Squibb and Sons:
- Insulin—Squibb, 10 Units.
- Insulin—Squibb, 20 Units.

Swan-Myers Co.:
- Sterile Ampoules Mercuric Potassium Iodide, 0.017 Gm., (¼ grain)—Swan-Myers.

Synthetic Drug Co., Inc.:
- Compressible Capsules Mercury Salicylate "Synthetic" 1 grain for Intramuscular Injection.

Compressible Capsules Mercury Salicylate "Synthetic" 1½ grains for Intramuscular Injection.
Compressible Capsules Mercury Salicylate "Synthetic" 2 grains for Intramuscular Injection.
Winthrop Chemical Co.:
Novasurol—Novasural Ampules.

In addition to the articles enumerated in our letter of November 29, the following have been accepted:

Abbott Laboratories:
Tablets Benzyl Fumarate—Abbott, 5 grains.
Gilliland Laboratories:
Diphtheria Toxin Antitoxin Mixture 0.1 L+.
Hynson, Westcott and Dunning:
Sealed Tubes Mercurochrome—220 Soluble 0.5 Gm.
Lederle Antitoxin Laboratories:
Intracutaneous Tuberculin for the Mantoux Test.
Lehn and Fink:
Corpus Luteum—L. and F. Desiccated.
Capsules Corpus Luteum—L. and F. Desiccated, 2 grains.
Capsules Corpus Luteum—L. and F. Desiccated, 5 grains.
Tablets Corpus Luteum—L. and F. Desiccated, 2 grains.
Tablets Corpus Luteum—L. and F. Desiccated, 5 grains.
Ovarian Residue—L. and F. Desiccated.
Capsules Ovarian Residue—L. and F. Desiccated, 5 grains.
Tablets Ovarian Residue—L. and F. Desiccated, 2 grains.
Tablets Ovarian Residue—L. and F. Desiccated, 5 grains.
Ovarian Substance—L. and F. Desiccated.
Capsules Ovarian Substance—L. and F. Desiccated, 2 grains.
Capsules Ovarian Substance—L. and F. Desiccated, 5 grains.
Tablets Ovarian Substance—L. and F. Desiccated, 2 grains.
Tablets Ovarian Substance—L. and F. Desiccated, 5 grains.
Mallinckrodt Chemical Works:
Mallinckrodt Tetrabromphenolphthalein Sodium Salt.
Mallinckrodt Tetrabromphenolphthalein Sodium Salt, 5 Gm. Ampules.
H. K. Mulford Co.:
Neorobin.
Vacuum Sealed Tubes Neorobin, 1 grain.
Vacuum Sealed Tubes Neorobin, 5 grains.
New York Quinine and Chemical Works:
Equinine—N. Y. Q.
E. R. Squibb and Sons:
Bacillus Bulgaricus—Squibb.
Nonproprietary article:
Tetrabromphenolphthalein Sodium.

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ADVANCES IN SURGERY THROUGH PHYSICOCHEMIC STUDIES OF THE BLOOD*

WILLIAM J. MAYO, M.D., Rochester, Minnesota

Knowledge is what we learn from others; wisdom is what we know ourselves. It is the mentality of the surgeon, rather than his technical ability, which is of the greatest importance. The good surgeon is not necessarily a good operator. Knowing when not to operate is as important as knowing when or how to operate.

We say that a certain surgeon has good surgical judgment, meaning that he more or less correctly estimates the vital processes of the patient in relation to his resistance, and visualizes the future course of his illness with a view to initiating such changes as will reduce the risk of a necessary surgical operation, and enhance the prospects of cure. Formerly, with the aid of a few instruments and a small number of chemical tests, the experienced surgeon arrived at a fairly accurate diagnosis and estimated surgical risks in the more advanced stages of disease. Today, the surgeon has at his disposal, through the aid of the internist and the laboratory worker using scientific methods, a vast amount of correct information in the early, as well as in the late, stages of disease. Formerly, estimation of the competency of the kidneys was made by a few simple examinations of the urine, and of the function of the liver by observations as to jaundice. At present, through biophysics and biochemistry, accurate estimations of renal and hepatic functions can be made.

The early masters of clinical medicine, however, did a great work. One must pay homage to men like Richard Bright and Thomas Addison. Bright, in 1828, with a tablespoon, a candle, and a few simple reagents, gave a graphic picture of acute nephritis with its characteristic edema, occurring; for instance, as a sequela of scarlet fever, and ten years later gave a classical description of the cardiorenal manifestations of the contracted granular kidney. Addison, in 1855, in a few short pages, described the syndrome of pernicious anemia with a lucidity which has never been excelled. In 1849, he described the disease of the suprarenals, which has been given his name, and ascribed the accompanying circulatory asthenia and bronzed skin to failure of the suprarenals to function. Bright and Addison were masters in the early days, but they understood disease only in advanced and terminal conditions. Today, masters are working with accurate scientific methods, which enable them to understand and treat disease in the early, curable stages. As Rowntree says, the old adage, "Methods are not superior to masters", in the light of the knowledge of the present day, should be paraphrased to "Masters cannot ignore methods".

Sir William Bayliss said that there is no line of demarcation between physics and chemistry. In other words, it is only under certain physical conditions that those alterations in the atomic constitution of molecular bodies, which we speak of as biochemistry, take place. In the days of the old masters, only microscopes of very inferior power were available. With the high-powered microscopes of today, one can see particles as minute as 1/10 micron or 1/250,000 inch in diameter. This advance in microscopy has made possible a fine analysis of the cellular elements of the blood. It has definitely fixed the red blood cell, derived from the bone marrow, as the oxygen carrier through its hemoglobin content. If the body is deprived of oxygen, death occurs in from seven to ten minutes. Since 47 per cent of the earth, air, and water, is composed of oxygen, it is surprising that there is no storage facility in the body, either for oxygen or for substances which, under stress, would produce it. Until recently it was believed that the red cells were completely renewed every seven days, but it is now known, through the work of Ashby of the Mayo Foundation, that these cells may live for many weeks. The red cells function, but have no nucleus and, therefore, have no power of growth. Blood transfusion clearly demonstrates

*Read before the Inter-State Post-Graduate Assembly of America, directed by the Tri-State District Medical Association, Milwaukee, October 30, 1924.

the value of the introduction of oxygen carriers as a temporary aid to the rehabilitation of an anemic patient.

The white cells, which are nucleated, are derived from the reticuloendothelial system, and have been shown to be directly connected with defense and repair. Quantitative and qualitative methods of study, based on cell morphology, give extraordinary knowledge of the power of defense of the white cell in the infections, and the decision to operate in an acute condition may finally rest on a rising white cell count. Without the white cell, there would be no repair of injuries. On the other hand, the diagnosis of leukemia, in the acute form, may depend on the changed morphology of the white cells, instead of on a high leukocyte count, as in the chronic forms.

The relation of the blood platelets, which are derived from the megakaryocytes of the bone marrow, to blood clotting and the purpuras, has become evident, as well as the agency of the spleen in the prolonged destruction of blood platelets, which may cause a drop from a normal count of from 225,000 to 300,000 or more, to 40,000 or less, causing chronic purpura in which splenectomy has given striking curative results.

We begin to look on the spleen in a new light, as a coarse filter of the cellular elements of the blood which have outlived their usefulness, and as a limited source of white cells. The spleen is a destroyer of worn-out red cells, and if it is enlarged, it may, by an unnecessary destructive activity, bring about anemia. In cases of pernicious anemia, the spleen perhaps functions normally as an executioner of red cells of reduced value, which, however, are capable of maintaining life, and are the best the bone marrow can produce.

Krogh has shown that the walls of the vascular capillaries contain contractile cells, derived from the non-striated muscle, which are to a large extent self-controlled. Under the circulatory pressure, the endothelial cells of the capillaries permit oxygen and molecular substances, such as the crystalloids and amino-acids, to pass by filtration, osmosis, diffusion, and other forces through the stomas in the wall of the vessel, to serve vital purposes: nutrition, energy and heat. When certain toxic poisons, for example, histamin, paralyze the non-striated muscle fibers, causing the stomas in the wall of the capillary to open more widely, larger bodies, such as the colloids of the blood plasma, pass from the capillaries into the tissues, causing the state known as shock.

We may, therefore, regard the vascular system as a means of transporting cellular elements in a liquid medium, which we call the blood plasma. Until recently, our knowledge ended there, but today, through physicochemic studies, we are gaining an enormous knowledge of this problem. We see the blood plasma carrying nutrition to all parts of the body, effete substances which are to be eliminated to the emunctories, and chemical substances, spoken of as internal secretions, which coordinate the fundamental vegetative functions. These substances are too minute to be seen with a microscope. The colloid field includes particles from 1/10 micron or 1/250,000 inch in diameter to approximately 1/1,000 micron or 1/25,000,000 inch in diameter. Knowledge of the colloids comes through the fact that the colloid particles are larger than a ray of light, and that with the ultramicroscope they can be seen to reflect or diffract the ray of light. The ultramicroscope determines the presence of colloid bodies, but gives no idea of their size, shape, color, or other significant details. Particles less than 1/1,000 micron in diameter lie in the molecular and atomic field, in which chemical changes take place.

According to Bohr, the atom is composed of a positive nucleus, or proton, surrounded by a negative electron or electrons. The simplest atom is that of hydrogen, composed of one proton and one electron, the latter being in rapid motion around the proton. Henry Moseley, a talented young Englishman who was killed in the Gallipoli campaign at the early age of twenty-eight, analyzed the atom by the refraction of the x-ray, an electromagnetic vibration of only 1/000,000,000 inch in length, smaller than the atom. He demonstrated that there are ninety-two possible elements between hydrogen, the lightest, and uranium, the heaviest, and that between each two elements in the progression in atomic weight, there is the weight of one atom of hydrogen; that is, an atom of oxygen has sixteen protons and sixteen electrons, an atom of radium eighty-eight protons and eighty-eight electrons, and an atom of uranium, ninety-two of each. Gold has seventy-nine electrons, and mercury eighty. Miethe has succeeded in removing one electron from mercury and obtaining gold. As a result of Moseley's work, Rutherford, Thomson, and others have been able to fill in all but four of the elements lying between hydrogen and uranium. Many elements are not stable, or contain more than the necessary number of protons or electrons, and these superfluous, easily loosened, or free, electrical units are called ions, and are responsible for the atomic changes which we speak of as chemistry.

It is in the atomic and molecular field that

oxidation takes place and the constitution of the molecule is altered. Crystalloids, of which glucose is a good example, lie in the molecular field, as do the amino-acids, which are the final results of protein metabolism. We now know that these ultimate products are formed in the liver, for, as Mann has shown by animal experimentation, if the liver is removed, sugar and urea in great part disappear from the blood.

It may seem that this discussion is ultrascientific and impractical, but on the contrary, it is most practical. Today, precise examinations of the blood, for reactions which concern the colloids and molecular and atomic substances, have been raised to the dignity of sound methods of securing information of vital phenomena.

Let us take as an example, examinations of the blood in relation to the kidney. The function of the kidney may be briefly defined as the filtration of non-colloid constituents of the blood plasma through the capsule, and the resorption of threshold bodies in solution through the tubule cells. The kidney is, therefore, chiefly a filter whose function is to eliminate certain metabolites, such as urea, chlorids, and creatinin, from the blood. Urea is listed by Cushny as a non-threshold body; it is one of the smallest of the molecules, and is not hydrated; that is, it does not change in size by absorbing water. We know that the urea molecule must be roughly about the size of the molecule of the dye, phenolsulphonephthalein, which, Rowntree has shown by intravenous injections, would be eliminated from the blood through the kidneys about as readily as urea would be eliminated. The Rowntree and Geraghty phenolsulphonephthalein test is an accurate guide to the functional capacity of the kidney to eliminate urea. Retention of chlorids in the body, through disturbance of renal function, results in the edemas. Creatinin is another waste material, derived from tissue catabolism excreted by the kidneys. Estimation of these substances in the blood affords the most reliable prognostic index to renal function.

Finally, the kidney eliminates excess water in order to maintain a proper physical state of fluidity, that the molecular constituents of the blood plasma, glucose, amino-acids, and so forth, may be maintained in the condition necessary to permit chemical exchanges. Eighty per cent of the body is composed of water. Colloid bodies in so-called solution can be seen only by refraction with the ultramicroscope and are held in suspension in fluids, while molecular and atomic particles form true solutions which, according to Arrhenius, may undergo electrolytic dissociation into positive and negative parts which are ionic.

Through studies of the blood has come the remarkable improvement in the results of operations on patients with reduced renal function. Such improvement could not be estimated by the old method of examining the urine. When the blood urea rises above 125, operation becomes most serious, unless it concerns obstruction to elimination by the kidneys. Even when the blood urea is above 300, the well prepared patient may recover from operation, provided the urinary obstruction can be relieved, as in certain conditions of the prostate. When the blood creatinin rises above 5, a serious barrier to excretion is present, and the patient is in danger; when it rises above 10, the patient will probably die unless the barrier is removed. The percentage rise and fall of the blood chlorids must be watched with care, but is not so striking as in the case of urea. In chloride retention, edema may occur. In high intestinal obstruction, the chlorids of the blood may fall markedly, and this is frequently associated with an alkalosis and its clinical manifestations.

If the renal function, in relation to elimination of urea, chlorids, and creatinin, is so reduced that the urine cannot concentrate normally, a large intake of water is necessary. That is, if the urine normally is excreted in concentration of 1,020, and the kidneys are able to concentrate only to 0,005, the patient must take extra water to insure proper elimination through the kidneys. If the renal incompetency is due to the stage of cardiac insufficiency, the patient may not bear the amount of water necessary for elimination, and a secondary edema may develop. Measures must be taken to obviate this cardiorenal complication. Under intelligent management, the condition of a patient with most serious toxemia from renal insufficiency may be improved, and a successful operation performed.

Note what may be done for the patient with the information derived from studies of the blood. Rehabilitation of the blood in cases of renal incompetency consists in giving fluid in the form of sodium chloride and glucose solution rectally, subcutaneously, or, if the condition is acute, intravenously. Glucose maintains heat and energy in the body and reduces the metabolites in the blood by preventing destruction of tissue. If the blood chlorids are high, water without sodium chlorid is indicated, but as a rule they are low and large quantities of hypertonic sodium chloride solution are given intravenously.

In high intestinal obstruction, the chlorids of the blood go down while the urea and creatinin go up. The problem is to restore the body fluids with water, which also aids elimination of urea.

To restore the chlorids, chlorid of sodium is given, not bicarbonate of soda, in the water, since alkalosis exists. Glucose is added to maintain oxidation in the body for heat and energy, and to check destruction of body tissue. This treatment will reduce the toxemia. High jejunostomy in cases of definite obstruction may become necessary, thus preventing toxic intestinal contents, through antiperistalsis, from reaching the upper jejunum and duodenum, where absorption takes place, causing profuse vomiting and dehydration. Many lives may thus be saved, and curative operations for the relief of the primary condition made possible at a later date, as shown by Balfour and McVicar.

Owing to precise methods of estimating blood sugar, we are today able to operate on the diabetic patient properly rehabilitated, for general surgical conditions, with a mortality not exceeding that of the average, as shown by Wilder. The surgical mortality in cases of jaundice in which patients have been properly prepared, has been reduced from above 10 per cent to less than 4 per cent, as shown by Walters. Last, but by no means least, by the use of the Rowntree-Rosenthal test with the intravenous injection of the dye, tetrasulphophthalein, we are able accurately to gauge the functional capacity of the liver, thereby avoiding many deaths from toxemia due to failure of hepatic function. Such deaths previously were charged to the lungs, the kidneys, the brain, and the heart, when, as a matter of fact, these organs were not the cause of death, but merely the executioners.

I have been privileged to see my colleagues, the internists, and laboratory workers, evolve scientific methods for examining the blood, and apply them in cases in which formerly operation, unaided, would have meant death, a rehabilitation resulting that indicates a most striking advance in modern surgery.

THE USE OF LOCAL ANESTHESIA IN ACUTE ABDOMINAL EMERGENCIES*

ROBERT EMMETT FARR, M.D., Minneapolis, Minnesota

No one will question the necessity for the use of local anesthesia in many varieties of acute abdominal emergencies nor will many question the dictum that the more grave the emergency the more necessary as a rule the use of local anesthesia becomes. In fact, it may be stated almost as an axiom that certain of these emergencies demand local anesthesia to the exclusion of all other methods. It is most unfortunate that, in a fair percentage of cases at least, it may be said that the greater the demand for the use of local anesthesia the more difficult will its application be found. Profound sepsis for instance may be accompanied by a mental state as well as physical conditions which make the use of local anesthesia especially difficult. Again, obstructions and some other conditions, while urgently demanding a choice of local anesthesia, are on account of the accompanying distention, difficult to treat by this method. Likewise, numerous other conditions in which local anesthesia is indicated, present technical difficulties which are not easily met.

Our experience covers almost every type of acute abdominal emergency. In almost all of these emergencies we have attempted to meet the indications by the use of local anesthesia.

In some the difficulties encountered have been so great that inhalation anesthesia was found necessary for the carrying out of certain portions of the operation. However, we have found it possible to develop a technic by which the indications could be met in the majority of cases by the use of local anesthesia alone. It is our purpose, therefore, first: to discuss some of the fundamental principles of the method, and second: to describe more specifically its application in the treatment of certain of the more or less frequent emergencies which must be met by the abdominal surgeon.

There are certain factors which have a marked bearing upon the success with which one may treat acute abdominal emergencies under local anesthesia. Familiarity with local anesthesia technic resulting from its use in the more simple types of abdominal surgery will greatly reduce the handicap under which the surgeon finds himself when confronted with a tragic case. Such familiarity will, of necessity, develop in the surgeon a certain degree of ability. It will automatically result in the development of his assistants, equipment and team work which is so essential when an emergency presents. The safety and facility with which inhalation anesthesia may be resorted to, should the necessity arise, are factors of the utmost importance. It allows the surgeon to carry out the primary steps of the procedure under local anesthesia with the full knowledge that he may at a moment's notice superimpose inhalation anesthesia as an adjunct and in a much smaller quantity than that found necessary if the latter alone were used. Even though the use of general anesthesia becomes necessary during the most difficult stage of the operation, it may almost always be discontinued and the operation com-

*Read before the Inter-State Assembly of the Tri-State District Medical Association, October 29 to November 1, 1923, Des Moines, Iowa.

pleted under the local anesthesia which has already been induced. It is unusual in our experience in such instances to have the patient fail to regain consciousness before the operation is completed. The post-operative course of these patients has, in our hands, at least, seemed to prove that this modification of the method popularized by Crile has decided merit.

We have not, as a rule, depended to any great extent upon the use of preliminary narcotics for the purpose of meeting psychic incompatibility in these cases. In some instances the use of such medication was, in our judgment, less safe than the application of mixed anesthesia. We do not hesitate, however, to use moderate doses of sedatives when we feel that they are not contraindicated. They allay restlessness and add greatly to the comfort of the patient but do not act in any sense as a substitute for perfect anesthesia.

The essentials demanded by the tragic case differ only in degree from those required as a routine, excepting that each should, if possible, be accentuated to a superlative degree. Noise must be eliminated, irritations avoided, bodily comfort assured, anesthesia must be complete, exposure perfect and the operative technic "stealthy." It is perfectly obvious that the surgeon who reserves the use of local anesthesia for the extreme or tragic case will find himself lacking in the essentials mentioned above and will therefore not be able to offer the best offices of local anesthesia when the need for them is greatest. It follows, therefore, that the most valuable asset which a surgeon may possess in relation to local anesthesia is familiarity with its use, equipment and team work on the part of the operating room personnel.

Most abdominal emergencies present certain features of a more or less uniform variety among which are shock, depression, rigidity, grave anemia (in cases of hemorrhage) low resistance, and not infrequently distension. Fortunately, all of these symptoms, except distension, are combated, temporarily at least, by the introduction of adrenalin and the solution (Ringer's) in which the novocain is dissolved. In fact it is not unusual to note an immediate improvement in the patient's condition following the induction of anesthesia.

It is perhaps not unreasonable, therefore, to suggest that the administration of novocain-adrenalin solution is a direct benefit to the patient exhibiting shock and depression. The administration of novocain solution invariably results in a reduction of rigidity in the anesthetized area. That its administration is of direct benefit in cases of acute hemorrhage cannot be doubted. Other things being equal the resistance of a patient will be lowered to a lesser degree by the administration of novocain than by the inhalation of any known general anesthetic. Distension, as stated above, offers one of the most difficult obstacles to the use of local anesthesia in abdominal surgery and yet, as will be shown later, even this obstacle is seldom unsurmountable.

In detailing more specifically the manner of operating for certain abdominal emergencies an effort will be made to show that in cases in which the use of local anesthesia offers the greatest difficulty—its advantages in many instances, both during and after operation, counterbalance or even outweigh its disadvantages on account of the beneficent influence of the technic it demands and allows during operation and the improvement in the post-operative course.

For the purpose of illustration a brief description of the manner of using the local anesthesia method in the following emergencies will be described:

1. Perforations of the stomach, gall-bladder or intestines.
2. Appendicitis. Acute, unruptured, ruptured with or without abscess.
3. Acute intestinal obstruction.
4. Hemorrhage.

Perforations—The perforation of an abdominal viscus must always be considered as a grave emergency in the case of sudden onset. The complete establishment of anesthesia of the abdominal wall will invariably result in a most surprising relaxation of the parietes. The abdomen should be opened over the suspected area by an ample incision which is made in a direction calculated to give the maximum exposure. The perforated viscus is, as a rule, not greatly distended, lies free in the abdominal cavity, may be manipulated in a moderate degree without the use of intra-peritoneal anesthesia and may therefore be dealt with most ideally under complete anesthesia of the abdominal wall, elastic retraction, good illumination and the application of surgical strategy. Perforated gall-bladders, gastric, duodenal or typhoid ulcers and even gun-shot wounds lend themselves most admirably to the use of local anesthesia. Intestinal resection, gastroenterostomy or cholecystostomy are among the more simple operations under this method. It is a well known fact that almost the entire intestinal tract may be explored under local anesthesia in the absence of adhesions or great distention. In exceptional cases, where a viscus is perforated by a foreign body (such as a bullet) in some inaccessible region, it may be necessary to employ general anesthesia.

Appendicitis—In this condition three stages of the disease must be considered—before rupture, after rupture, and after the formation of an abscess.

The removal of the appendix, during the first or second stage, under local anesthesia while presenting more difficulties than the performance of the same operation during the interval, is not only possible but in the writer's opinion often most desirable. Anesthesia of the abdominal wall must be absolute. The incision which we have used for over ten years is the transverse incision first described by Elliott,[1] placed rather low. The abdominal walls are carefully stretched by the use of wire spring retractors, the patient placed in a moderate Trendelenburg position and tilted well over to the left. In the vast majority of cases the appendix or the tissues protecting it will thus be brought into view. If not adherent, its mesentery is infiltrated before any attempt is made to elevate the organ. If adherent, its mesentery and the peritoneum in its region are immediately infiltrated. Long delicate instruments are used and the lines of cleavage are carefully followed. If a localized abscess is suspected, long, narrow strips of gauze may be introduced mesially without discomfort to the patient. In adherent cases it is not necessary to elevate the appendix base to the level of the incision. It may be as easily dealt with by means of a fine curved intestinal needle, a long needle forceps and the forceps tie of Grant. In other words, the surgical technic (strategy) must be made to accommodate itself to the condition presenting.

Localized Abscess—In this group two conditions are to be considered. One may, under infiltration, open directly into an appendiceal abscess without first entering the free abdominal cavity; drainage may then be introduced and the operation terminated at this point or the appendix may be dealt with in the manner described below.

In the case of a localized abscess, which cannot be opened directly, (and this applies to practically all forms of intra-peritoneal abscesses) the peritoneal cavity is opened in the usual manner, the abdominal wall is retracted vertically, as well as laterally, and an adequate amount of protective gauze packing is introduced. The parietal peritoneum is anesthetized provided it forms a portion of the abscess wall. The abscess is then opened with a blunt instrument which is made to follow the line of cleavage and the abscess is completely drained by means of suction. The opening into the abscess cavity should be sufficiently large so that its entire interior may be inspected. Almost without exception some portion of the appendix will be found presenting and it may be grasped by forceps, its mesentery clamped and its base severed. If there is the slightest difficulty in ligating these structures, a forceps may be allowed to remain *in situ*. The abdominal wall is then once more elevated and the protective packs removed. Their removal will usually bring the omentum into view. The protective influence of this structure is insured by tacking it into the desired position by means of one or two catgut sutures.

From this time on every effort is made to maintain a quiescence of the movable abdominal viscera. The cooperation of the patient and the absence of vomiting will in the majority of instances furnish protection against the spread of the infection which results from the tossing about of the unconscious patient while recovering from general anesthesia or from the to and fro motion of the small intestines which may be forced in and out of the abscess cavity as a result of repeated retching and vomiting.

Acute Intestinal Obstruction—This condition, associated as it usually is, with distention, may in some instances, offer a great deal of difficulty when using the local anesthesia method. Notwithstanding this fact, acute obstruction, no matter what its cause, is so frequently associated with regurgitation and the possibility of the aspiration of septic material into the lungs that the protective reflexes should never be inhibited by the use of general anesthesia unless it is absolutely necessary. For this and for many other reasons it would seem most desirable to carry these cases through under local anesthesia whenever possible.

Obstructions which are associated with defects in the abdominal wall are most easily relieved under the local anesthesia method. The simplicity with which this may be done and the abundance of descriptive literature upon this subject would seem to obviate the necessity of describing the technic. All of the indications for the treatment of this condition may be met by the use of local anesthesia and in the writer's opinion the surgeon who inhibits the laryngeal reflexes in such a case by the administration of deep narcosis is withholding from his patient a certain percentage of protection to which the latter is entitled.

Internal obstructions, while demanding local anesthesia with the same emphasis, unfortunately may present greater difficulties. However, it is generally in cases complicated by marked distention that general anesthesia will be found necessary. The realization that the performance of an enterostomy alone is often the best means of meeting the indications in acute intestinal ob-

1. Farr Transverse Abdominal Incision, from the American Journal of Surgery, September, 1915.

structions has greatly broadened the scope of local anesthesia in this field. The beneficent influence of emptying the distended intestine by means of immediate enterostomy, if carried out aseptically[2] offers a means of emptying loops of distended bowel thus often greatly reducing the difficulties which are encountered. In cases in which this procedure does not seem to be indicated one may be able, after perfectly anesthetizing the abdominal wall, to exclude the distended loops of gut by careful packing and retraction to an extent which will allow him to locate the site of obstruction. Not infrequently following of the collapsed bowel will lead the surgeon to this point. We have also, in a number of instances, allowed the distended coils of intestine to eviscerate more or less completely under the protection of hot, moist packs after which the obstruction was relieved and the intestine returned to the abdominal cavity. Gangrenous gut, if encountered, should be immediately allowed to eviscerate after which primary or secondary resection may be accomplished. The patient's best interests demand the least amount of manipulation that will meet the indications. The administration of intraperitoneal anesthesia, when possible, is extremely effective and the exposed mesentery should be injected without stint.

Intussusception—We have for over twelve years relieved all of our cases of intussusception by means of local anesthesia alone. The observation of Dr. P. B. McLaughlin of Sioux City,[3] that the induction of local anesthesia in the mesentery of the affected bowel caused the immediate relaxation of the contracted wall of the bowel is most interesting. As most of these obstructions occur at the ileo-cecal valve, the location of the incision is usually indicated, even in the absence of a palpable tumor. Upon opening the abdomen the tumor may present or may be palpated and delivered after which the mesentery should be infiltrated at once. All of our operations, excepting one, were performed upon children. In the case which occurred in the adult a trans-rectus incision was made over the tumor which immediately delivered itself and the intussusception was reduced without pain to the patient.

In the case of acute obstructions which are the result of neoplasms the indications may usually be met by this method of anesthesia. Preliminary enterostomy is often indicated and provided metastises in the liver or pelvis are to be looked for, nitrous oxid may be given when necessary. We have found little difficulty in passing the hand into the abdomen for the purpose of making this exploration provided it is done slowly and carefully.

Hypertrophic Pyloric Stenosis—There are few operations in surgery in which the patient comes to operation in such a pitiful condition as in the neglected case of hypertrophic pyloric stenosis. In fact, the average case is apt to demand every element of safety which surgery offers. The successful accomplishment of the Rammstedt operation under the use of local anesthesia necessitates team work and the careful following out of a definite preconceived regime. Strict adherence to the rules about to be enumerated allows one to carry out this operation step by step with despatch and the certainty of technical success. An arm table corresponding in height to the operating table is placed at right angles to the latter and near its center point. A stool is placed at either side of the arm table and one at its end. A pillow is then placed upon the arm table and upon this a thick layer of sterile absorbent cotton is spread. The child, whose clothing has been removed, is placed upon the bed of cotton, its feet securely anchored to the operating table, while the psycho-anesthetist assumes the sitting posture and grasps the child by the arms. The abdominal wall is quickly sterilized with iodine and sterile drapes are put in place completely covering the operating table which is used as an instrument table during the operation. The surgeon sits upon the stool at the child's right, the assistant at its left, the sterile nurse stands at its feet. By making traction upon the arms the psycho-anesthetist can control the child absolutely. The abdominal wall is quickly infiltrated by using a fine needle and the subdermal method. We prefer the transverse incision along a line slightly above the lower edge of the liver. Just before opening the abdomen a catheter is introduced into the child's stomach and the gas or fluid with which this viscus is usually distended are forced out by making pressure upon the abdominal wall. The abdomen is now opened between towel pins which retract the abdominal wall vertically and a small retractor used to draw the edge of the liver upward. The enlarged pylorus may now be brought to the surface between the operator's thumb and finger, or better by means of rubber-tipped forceps. Should the child show signs of distress, which is unusual, the attachments of the pylorus may be infiltrated. A pacifier is usually placed in the child's mouth at this stage of the procedure. The Rammstedt operation may then be completed, a fine catgut suture passed through the upper edge of the severed pyloric ring and thence through a tab of the omentum and tied, after which the abdominal wall is closed. Many years ago we made the as-

2. Farr Surgical Clinics of North America.
3. Personal communication.

sertion that from a strictly technical standpoint the performance of this operation was, as a rule, no more difficult than the circumcision of a child of the same age. Increased experience would seem to indicate that this statement is not an exaggeration.

Intra-Peritoneal Hemorrhage—The literature teems with a discussion of the appropriate time to operate in this condition. Since becoming conversant with the use of local anesthesia we have in every instance operated at the earliest possible moment. In tragic cases the introduction of intravenous saline solution or better, non-citrated blood, is begun coincident with the infiltration of the abdominal wall. The abdomen is opened and the bleeding point searched for and treated with all possible dispatch. The spleen may be removed after infiltrating its pedicle. The liver may be sutured or gauze packs may be applied or a ruptured tube may be ligated and removed. No attempt to remove the blood clots is necessary and the technic is simplified by allowing them to remain. It is our belief that the stimulating effect of the anesthetic solution (novocain-adrenalin in Ringer's) combined with transfusion and the prevention of further hemorrhage by the use of this benign method offers to the case of intraperitoneal hemorrhage the best possible chance of recovery.

There are other acute abdominal conditions which might be discussed in this message. However, we believe a sufficient number have been touched upon to demonstrate the facility with which local anesthesia may be used in many abdominal emergencies. We further believe that local anesthesia deserves more frequent application in these cases.

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FUNCTIONAL EYE STRAIN—ITS DIAGNOSIS, MEASUREMENT AND CORRECTION*

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Eye strain, insofar as it is amendable to refractive correction, is a question of functionability and has its inception in overtaxed accommodation or convergence.

It is usually reflex, but may be objectively manifest in local pathologies such as blepharitis marginalis or of the compound variety exhibited by multiple cysts due to concurrent breaking down of a number of adjacent meibomian glands.

The best evidence that accommodative strain is the etiological factor of blepharitis lies in the fact that there is no known record of this disease occurring in conjunction with myopia, and I have never observed a permanent cure effected without the proper correction of the hyperopia which is always present with this condition.

The reason for this is revealed in the study of that part of the functional anatomy of the eye, which shows that the meibomian glands derive their innervation from branches of the third pair of cranial nerves, which also supply the ciliary muscles.

Logically when compensation for the hyperopia is insufficient, those branches which supply the ciliary muscles appropriate more than their share of innervation, with the result that the meibomians are impoverished and functionally impaired with the results noted. Further proof that blepharitis has a functional origin is found in the fact that it is not infectious, therefore not a germ disease.

Treatment obviously must be directed to removal of the cause, i. e., the correction of the refractive error which, together with hygienic measures in the way of a thorough cleansing of the affected parts twice daily, is usually sufficient to effect a cure, but may in the more exaggerated cases be supplemented by astringents.

Surgical procedure is indicated only when indurated cysts or chalazia are encountered.

A peculiar differentiation is noted in the fact that objective evidence of eye strain is seldom associated with subjectively manifest symptoms. On the other hand, the worst subjectively reflex cases of eye strain are very frequently associated with a clear, clean, non-pathological eye, and normal, or even a hyperacuity of vision. Reflex eye strain is usually of the accommodative variety, occurring in low degrees of hyperopia and hyperopic astigmatism, with little or no impairment of visual acuity.

Taking into consideration the fact that every hyperope is born and carries with him all through life a definite liability to accommodative strain, and the myope a corresponding immunity, it would seem that diagnosis and treatment should be comparatively easy, but my contention is that refractive measurements alone are not only insufficient and indefinite, but frequently misleading, for the following reasons:

In the first place, approximately 75 per cent of all hyperopes are free from strain by virtue of complete physiological compensation, and the majority of those requiring correction have partial compensation in varying degrees. Our best end-results, whether we realize it or not, are obtained by nicely bridging the gap between the actual an-

*Address before the Linn County Ophthalmological Society, Cedar Rapids, Iowa, October 14, 1924.

atomical deviation and the amount of compensation present.

Secondly, there are many other etiological factors known which produce the same individual symptoms, such as headache, vertigo, neurasthenia, etc. An error of refraction produces eye strain only in proportion to the effort involved in attempting to overcome it, and is nearly always in inverse proportion to the amount of the error.

Whereas the patient with a low degree of hyperopia usually can and does obtain and maintain satisfactory vision at the expense of his accommodation, and in the absence of sufficient compensation suffers from undue loss of nervous energy; the one of higher degree may waste no energy attempting to accomplish an impossibility.

Complete compensation for low error is usually present in youth, but loss of accommodative compensation, with its attendant discomfort, may occur during the next term of school, or it may endure indefinitely up to the age of presbyopia.

The difference between the woman who is really ill for the want of a pair of plus fifty spheres, and her sister with double the error but no strain, lies in their respective accommodative powers.

Now comes a woman thirty-five years of age with a headache, vertigo and an error of refraction. These facts may be, and frequently are correlated, but we must take into consideration the fact that she has several neighbors with the same refractive error but none of her symptoms, and as many more neighbors who have the same identical symptoms which have been clinically proven to be due to various other causes, such as autointoxication, albuminuria, lacerated cervixes or focal infections. A visit to ten different men specializing in as many different lines may result in ten different interpretations of the same symptoms and as many different diagnoses. Symptomatic diagnoses usually result in symptomatic cures with the etiological factor still a mystery.

Third, the very act of eliminating an accommodative strain frequently induces a binocular strain which did not previously exist by disturbing the previously existing harmonious relation between accommodation and convergence.

Further reference to the third pair of cranial nerves shows that accommodation and convergence derive their innervations from the same source, and it is therefore impossible to place a pair of lenses before any pair of seeing eyes without changing the previously existing relation, and the change is good or bad, never neutral. Whenever we correct a hyperope we lower the accommodative stimulus and concurrently deprive the convergence of a corresponding amount of habitual or sympathetic innervation, and unless our patient has a tendency to over-converge this results in a binocular insufficiency.

Let us consider a hypothetical case of a patient thirty-five years of age with a dioptry of uncorrected hyperopia who complains only recently of discomfort.

Nature has until recently taken care of the error of refraction by means of a physiological hypertrophy of the ciliary muscles and a corresponding hypertrophy of the external rectus muscles to check the natural tendency of all hyperopes to over-converge, with the result that up to the time of his complaint he has maintained normal vision, normal accommodation and a normal relation between these functions, but the time has arrived when, on account of the increased resistance of the crystalline lens concurrent with advancing age, or perhaps a change of occupation involving more eye work, the correction of his hyperopia has become imperative to eliminate an accommodative strain. What is the result? The physiological hypertrophy of the externi, which up to the moment of his correction has been a benign influence, immediately becomes malign, and a binocular strain ensues as a perfectly natural sequel.

It is generally conceded that the excessive accommodation required to overcome uncorrected hyperopia is the cause of most cases of convergent strabismus. When a crosseyed child is presented for examination we hope to find a high degree of hyperopia, but we cannot ignore the fact that if plus lenses straighten crosseyes and relieve esephoria, by the same identical process they upset orthophoria and induce or aggravate exophoria. Furthermore, true exophoria sometimes simulates esophoria through tonic contraction of the interni in the same manner that hyperopia sometimes simulates myopia through spasm of accommodation.

This leads me to believe that the most essential measurements are those of accommodation and convergence, with a corresponding analysis of their relation, and I feel well enough acquainted with most of my audience to remind you that practically all of our preceptors and authors have, in their lectures and text-books, divided this subject into three parts or phases, namely: refraction, accommodation, and convergence, but somehow have failed to sufficiently impress us with the importance of the last two subjects. The average oculist's equipment consists of many very expensive instruments, the use of which involves much time and training, for the purpose of estimating the anatomical deviations of the

eye which come under the head of errors of refraction and which may or may not have something to do with what the patient is complaining of and the correction of which, if resulting in relief to the patient, does so only by concurrently establishing a better accommodation or convergence, or a more harmonious relation between these functions, for the measurement of which he has practically no equipment.

Having in mind that we are not a nation of star-gazers, and that 90 per cent of the average individual's eye work is done somewhere inside of twenty feet, it will be my endeavor in this article to discuss not only the importance of functional tests, but to set forth in a very simple manner how these measurements may be accomplished.

Subnormal accommodation from any source at any age, whether due to hyperopia or presbyopia, pathological or induced cycloplegia, or the participation of the ciliaries in a generally neurasthenic condition, is indicated by recession of the near point. Mathematical estimation of accommodation requires simply a knowledge of the amount of divergence present from any given distance.

Light radiates from all luminous objects and enters the eye divergently from all finite distances, and the less the distance the greater the divergence.

Whereas, the emmetropic eye is physically adjusted to all infinite distances, all eyes are obliged to adjust themselves to finite distances by the action of the ciliary muscle on the crystalline lens in order to overcome the difference between parallel and divergent rays of light. Accommodation is the power of the eye to adjust itself to finite distances, each different distance requiring a different adjustment.

In order to comprehend the measurement of accommodation, it is necessary to refer to the relation between dioptries and inches.

Originally, the power of lenses was indicated only by their focal length, but there soon became apparent the necessity of a double standard or system of measurements, which was accomplished by adopting a lens whose focal length is forty inches as the standard unit of measurement and designating it one dioptry. The name dioptry was taken from the French word meter, which so nearly approximates forty inches that for all practical purposes it may be considered on this basis.

Now, a lens which focuses light at twenty inches has obviously double the power of one which focuses at forty inches and therefore contains two dioptries of power, and it is equally obvious that whenever we cut the distance in half we must double the power of the lens in order to hold the focus. Conversely, when we double the distance we must reduce the power of the lens one-half for the same reason.

With the foregoing in mind, I have, for the purpose of transposing inches to dioptries or dioptries to inches, formulated the following simple rule: "Divide 40 by the given number." If the given number is inches, the answer is in dioptries; and if the given number is in dioptries, the answer will occur in inches.

We will now undertake to show the practical application of the foregoing to the measurement of accommodation.

Light in its natural course travels in straight parallel lines called rays. Whenever we depart from parallelism we involve two angles, convergent or positive, and divergent or negative. These angles are always equal whether acute, right angle or obtuse. In other words, the angle of convergence from any plane to any point is exactly equaled by an angle of divergence from that point back to the same plane.

As the evolution of this principle we have only to apply the rule for transposing inches to dioptries or dioptries to inches to the measurement of accommodation, i. e., to find the amount of accommodation necessary for an emmetropic eye at any distance, "divide 40 by the given distance", and to find the total accommodation divide 40 by the nearest point an eye can distinguish the proper sized type.

As an example, if the eye is emmetropic and the distance so found is five inches, the total accommodation equals eight dioptries, i. e., the patient, in order to read the type at this distance, is obliged to dynamically add to the static power of his eye an additional curvature equivalent to the eight dioptrie plus spherical lens of your trial case, and, this being his near point, therefore represents his total accommodative power.

To find the amount of accommodation necessary for an ametropic eye at any distance "divide 40 by the given distance, and algebraically add the amount and sign of the error."

Now, we are fully aware that if we possessed just enough and no more than enough accommodation to make the proper focal adjustment for the purpose of reading at the average distance of thirteen inches, we could not prolong the act ten seconds without straining—hence the necessity of measuring the total accommodation in order to estimate the proper amount of reserve necessary to prolong the act of accommodation without undue loss of nervous energy.

To find the reserve accommodation, we now apply this formula: "Subtract the working distance from the near point, first reducing both to dioptries." Example: If the patient's near point is 5 inches, showing a total accommodation of 8 dioptries, and the working distance is 13 inches, which requires 3 dioptries: 8.00 D.—3.00 D. equals 5.00 D.; the last figure indicating the reserve accommodation. With the foregoing in view, it will be seen that all the apparatus necessary to diagnose and properly correct accommodative strain is to have available a thirteen inch ruler, together with a knowledge of what constitutes a normal accommodation at any given age.

Some of our pioneer refractionists formulated some tables of average accommodation at various ages, but their usefulness from a clinical standpoint was more or less impaired by the fact that the surplus above the average in one individual is not available for one whose accommodation is subnormal.

During the year 1903, with the aid of my assistants, I recorded and tabulated more than one thousand cases of patients of different ages and occupations, together with their subsequent histories, in order to determine the minimum of accommodation necessary to insure freedom from strain. The result of these findings was communicated for confirmation to some five hundred oculists then in active practice. As the result of these clinical findings, I later caused to be published what, in the light of subsequent events, proved to be a practical, workable

Table of Normal Accommodation

Age 10,	Normal Accom. 13 D.	Near Point =	3″
Age 15,	Normal Accom. 12 D.	Near Point =	3 1/3″
Age 20,	Normal Accom. 11 D.	Near Point =	3 7/11″
Age 25,	Normal Accom. 10 D.	Near Point =	4″
Age 30,	Normal Accom. 9 D.	Near Point =	4 4/9″
Age 35,	Normal Accom. 8 D.	Near Point =	5″
Age 40,	Normal Accom. 7 D.	Near Point =	5 5/7″
Age 45,	Normal Accom. 6 D.	Near Point =	6 2/3″
Age 50,	Normal Accom. 5 D.	Near Point =	8″
Age 55,	Normal Accom. 4 D.	Near Point =	10″
Age 60,	Normal Accom. 3 D.	Near Point =	13″

I will now briefly consider the subject of convergence, which is the power of the eyes to maintain binocular near vision. The demand for convergence, in common with accommodation, increases in exact proportion to the proximity of the object, and I want to place special emphasis on the fact that a normal reserve convergence is just as essential to our well-being as a normal reserve accommodation, and though binocular insufficiencies are less common than those of accommodation, correct diagnosis and intelligent prognosis must include the measurement of convergence, and that the acceptance or rejection of our refractive corrections, from a clinical standpoint, is more dependent upon the previously existing relations between these functions than to anything else. Practically all of our so-called anomalies and idiosyncrasies are due to a nervous irritation arising from lack of harmony and proper coordination of the elements of functional vision. Weak convergence may co-exist with a normal distant coördination or even with esophoria, hence the measurement of convergence must not be confounded with tests for muscle balance at infinity.

The measurement of convergence is very simple and requires no other apparatus than the aforementioned thirteen-inch ruler, supplemented by a red and black line bisecting each other at right angles on the reverse side of the card bearing the type used for the measurement of accommodation. With an eight degree prism held before either eye with the base apex line of the prism vertical and the card presented with the black line in a vertical position at the patient's near point, there will be a purposely induced vertical diplopia. If convergence is normal the patient will see two red lines bisecting one black line.

If, however, the patient sees two black lines, convergence is subnormal and the measure of the insufficiency is found by the weakest prism base in which will fuse the black lines.

The amount of artificial convergence indicated can usually be obtained by decentering and should be incorporated with our other findings in order to establish a normal convergence.

Prisms bases in constitute an artificial convergence in the same sense that plus lenses constitute an artificial accommodation and have the same clinical value.

Using the term asthenopia broadly to indicate any form of eye strain we may use the following synopsis: Asthenopia is due to excessive effort. The essential efforts are accommodation and convergence. The essential remedies are artificial accommodation and artificial convergence; therefore the most scientific and at the same time the simplest method of relieving eye strain consists in restoring the near point of both accommodation and convergence, thereby establishing a normal functionability.

SMALLPOX*

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In view of the prevalence of smallpox in this state and adjoining states and in view of the fact that antivaccinationists have been issuing propaganda against vaccination for smallpox,[1] it has seemed worth while to briefly summarize a few available facts concerning smallpox, its prevalence, the value of vaccination and the legal authority for compulsory vaccination when this course becomes necessary. The primary purpose of this article is to present a few current facts which may be readily verified and may be used by physicians and laymen in conversation upon this subject.

PREVALENCE

The disease of smallpox which derives its name of "smallpox" as compared with "large pox" of syphilis, is a disease which has afflicted the human race for at least 1200 years before the Christian era,[2] and prophylactic inoculation against the disease is said to have been practiced for this length of time in India and China. It is probably a safe statement to make that from this early date up until the present day the world has never been completely free from this disease which has from time to time caused terrible and devastating epidemics and in the meantime has smoldered in some out of the way corner of the world only to break out anew when the opportunity presented itself. At the present time smallpox has become quite widespread throughout the United States and in other parts of the world, particularly in England. The Ministry of Health of England states,[3] 2,750 cases reported from January 1, 1924 to September 2, 1924, as compared with 1,840 for the same period of 1923. In this country, reports[4] from 678 cities of the United States and Canada show 18,811 in the first six months of 1924, as compared with 7170 cases for the same period of 1923. Cities having the highest death rates were Detroit; Windsor, Canada; Pittsburg, and New Britain, Connecticut. The states which have had the leading number of cases[5] are Montana, Minnesota, North Carolina, Washington, and Oregon. In the neighboring state of Minnesota, 1613 cases have been reported[6] from January 1, 1924 to August 16, 1924. The virulence has varied in different localities. In Windsor, Canada, Adams reports[7] 71 per cent of those unvaccinated died, whereas, in a small outbreak in this state at Wheatland no deaths have occurred. There have been virulent cases in this state, however, and the mayor of one of our cities has recently died from smallpox.[8] With respect to the prevalence of smallpox, it is interesting to note countries where smallpox is scarce or absent. The epidemiological report of the League of Nations June 15, 1924, states Scandinavia and Central Europe are free or practically so, as usual, from smallpox. Breger states only fourteen cases were reported in Germany in 1923. In an editorial in the December number of the American Journal of Public Health entitled, "Shall the United States Lead the World in the Prevalence of Smallpox?" we learn that only three countries exceeded the United States in smallpox in 1923; namely, Switzerland, Russia and Greece; while South Africa, Egypt, Algeria, Finland and Hungary had better records than we.

EFFICACY OF VACCINATION

The history of vaccination is interesting but will not be related in this article.[10] Suffice it to say that inoculation, as mentioned above, is said to have been practiced as a prophylactic measure against smallpox since 1200 B. C. Lady Mary Wortley Montagu introduced inoculation into England in 1718 and Jenner performed vaccination somewhat similar to the way it is now performed in 1796. Instead of drawing upon the wealth of evidence that has accumulated since that date until the present time to show the value of vaccination, recent facts and figures only will be presented. In the recent epidemic of virulent smallpox in Windsor, Canada, Adams[8] states that no one who had been vaccinated successfully within twelve years contracted the disease and no one who had been vaccinated, no matter how long before, died from the disease. Furthermore, of those who contracted the disease and who had not been vaccinated, 71 per cent died. And lastly, vaccination of almost the whole population stopped the epidemic completely and abruptly.

In Minnesota[6] in 193 cases since January 1, 1924 of malignant smallpox there were forty deaths; 34 of these had never been vaccinated; the remaining 6 had not been vaccinated within seven years. Another interesting point is that two who died had had smallpox in childhood. In 11 deaths out of 1420 cases of ordinarily milder type of smallpox, none had been vaccinated.

In an epidemic in Wheatland of this state where the community had been thoroughly exposed, no one took the disease who had been vaccinated during an epidemic of nine years ago.

In Detroit[16] in the recent epidemic there were 124 cases of hemorrhagic smallpox with 123 deaths. Of 268 persons who were known to be exposed and had been vaccinated over five years

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before, 16 developed smallpox. From 146 who were known to be exposed to this severe type and who had been vaccinated less than five years before, no one contracted the disease. During this epidemic a minister who had delivered a scathing sermon against vaccination, took smallpox and died. An employer who had his employes vaccinated but was not vaccinated himself contracted the disease while none of his vaccinated employes were affected.

In an article on "The Menace of the Unvaccinated", Heiser[17] notes that before American occupation of the Philippines there were 40,000 deaths annually from smallpox which number was reduced to practically none by vaccination. Later the vaccination requirements became lax and there occurred in 1918 an epidemic with 50,000 deaths, which was only curbed by vaccination. He also mentions control of smallpox in Porto Rico, Cuba and Jamaica.

Guilford[18] mentions an outbreak of smallpox in Hometon, England, where 98 out of 100 attendants were vaccinated and did not contract the disease. The remaining two unvaccinated attendants contracted the disease.

Breger states[9] because of compulsory vaccination in Germany only 14 cases were reported in 1923. Czecho-Slovakian law of compulsory vaccination reduced the number of cases in 1919 of 11,209 to 84 in 1922. In France during the entire period of the war up to June, 1917, because of the careful vaccination of the French soldiers, not one case of smallpox occurred in the French Army.

It is more or less commonly believed by the laity that one attack of smallpox confers immunity for life, but such is not the case, as is well known by medical men. As mentioned above,[6] two deaths occurred in Minnesota in persons who had had smallpox in childhood. An immunity is conferred by having had smallpox, which immediately after recovery is complete or absolute but which slowly diminishes over a period of years. In a similar way the immunity conferred by vaccination slowly diminishes until after a period of time the individual again becomes susceptible to smallpox. The immunity is variable in degree and depends upon several factors, for example; the time elapsed since vaccination, the degree of exposure to smallpox (whether intimate or slight) and the virulence of the case to which exposure has occurred. In view of these facts, interest is taken in the length of time for which vaccination has positively proven to protect against the disease. In Windsor, Canada,[7] where the type of smallpox was quite virulent no one contracted it who had been vaccinated within twelve years. In Detroit no one vaccinated within five years took smallpox and 146 were known to have been exposed to smallpox in its virulent form. In Wheatland, Iowa, no one vaccinated within nine years had smallpox. In Minnesota have occurred six deaths in persons vaccinated over seven years before. From the experiences of these localities it appears that successful vaccination may be depended upon to protect against smallpox for at least five years. After this time the degree of immunity is variable and should not be relied upon for complete protection.

Attitude to Take Toward Strict Vaccination Requirement

From time to time a physician becomes impatient and discouraged with certain portions of the public who so strenuously object to vaccination. He feels that perhaps if all quarantine signs were removed and only those vaccinated who desire it, the problem would soon solve itself by those not vaccinated contracting the disease and that without argument those who now object would then come willingly and desire vaccination. Two such letters [11], [12] have appeared in the last few months in the Journal of the American Medical Association. Following the second mentioned letter is a comment by the editor of the Journal showing the fallacy of this reasoning. He says, in substance, that the vaccination laws of Minnesota have been lax and remarks upon the bitter anti-vaccination fight. Furthermore, from 1913 to 1921 the average number of cases of smallpox per 100,000 population was 106 there as compared with one for Massachusetts, two for New Jersey and three for New York. In North Carolina, where the vaccination laws are also lax, the number has been 94 per 100,000 population for this period. And again, some states in the northwest claim their high morbidity rate for smallpox is due to the laxity of Minnesota laws.

An interesting abstract of Dinguizli's article in the Bulletin de l' Academie de Medicine appeared in the Journal of the American Medical Association[13] showing the attitude taken by the Mohammedans toward vaccination. The decision of the local highest authorities, the Ulemas of the Great Mosque at Tunis was in favor of vaccination. Although the Prophet said, "There is no contagion, no disease" and their religion forbids treatment by the "unclean" yet the Mohammedan law states "Of two evils, the lesser is to be chosen." Vaccination must be performed by a physician who is held guiltless even if there should be a fatal result, if he has followed the rules of his art, by the saying: "One must regard only frequent

cases and not one, two or three persons in a hundred." As a result of this ruling the Mohammedans of Tunis submit willingly to vaccination and only a few Europeans try to escape it.

LEGAL STATUS OF COMPULSORY VACCINATION

From the foregoing statements, it appears the adequate method of protection of a community against smallpox is to enforce strict vaccination laws. The question then arises whether or not a school board, a local board of health or a state board of health can legally require vaccination. James H. Tobey, administrative secretary of the National Health Council, has written a brief article upon this subject for the Journal of the American Medical Association.[14] It contains a list of sixty-seven court decisions from twenty-eight different states between the years of 1830 and 1924. The gist of his article is that it is first the function of the legislature to determine whether vaccination is a proper and efficacious remedy for the prevention of smallpox and enact laws upon the subject which may then be interpreted by the courts. The United States Supreme Court has upheld the power of the state legislature to enact compulsory vaccination laws. It has also upheld the right of the state legislature to delegate to a municipality the power to exclude an unvaccinated child from school. The essential requirements of a valid law is that it be reasonable. To require anyone to be seized at any time and vaccinated would not be considered reasonable by most courts. But they would consider vaccination or quarantine of persons suspected of being exposed to smallpox as reasonable. With regard to the exclusion of unvaccinated children from school, there has been some conflict of decision but the weight of authority upholds the requirement that children be vaccinated or excluded from school. During an emergency these requirements will usually be upheld when expressly or even impliedly authorized by legislature. Decisions to this effect have been rendered in Arkansas, Indiana, Michigan, Minnesota, Missouri, North Carolina, Pennsylvania, South Dakota, Texas, Utah, Vermont and Washington. Tobey quotes Professor Freund as saying, "If the protection of the public health allows quarantine, it is difficult to see why it should not justify compulsory vaccination." In Michigan[15] the court upheld the authority of the board of health to require vaccination of school children before permitting them to return to school (during an epidemic) notwithstanding the fact that the school board had directed the admission of children to school without vaccination.

ABSENCE OF UNTOWARD EFFECTS FROM VACCINATION

During the early history of vaccination there occurred, at times, very severe reactions from vaccination. These severe results have always been seized upon by antivaccinationists and thoroughly broadcasted until even today the public mind has not been completely cleared of the idea that vaccination is a very serious and harmful procedure. As a matter of fact the methods of production of vaccine and the methods of testing its strength before using it for the vaccination of human beings has so improved that the ill results to be expected from vaccination are practically nil. In earlier days when people were vaccinated directly from a case having the smallpox, there were many chances for ill effects to occur. The virus transferred may have been especially virulent and caused a severe reaction, or in the transfer of the smallpox virus, other diseases might also be transferred, as syphilis. Furthermore, during this period when the knowledge of infection was small, many wounds became infected and caused severe results. But today under the present method of preparing vaccine and of diluting it and aging it to reduce its strength, and finally testing it, the chance of untoward reaction is small. In former times, there were various products upon the market which were unstandardized and of variable strength and value. Today all these products are inspected and must bear the approval of the United States Government inspectors before being sold to the public. This insures a stable, reliable product. Because of our increased knowledge of the care of wounds, we no longer have infections accompanying the vaccination. Within the last few weeks over 1000 vaccinations have come under my observation and there has been not a single ill result among them. This figure is small, however, in comparison with the figure given by Heiser.[17] He states that in 10,000,000 vaccinations in the Philippines, no injury to the health by vaccination was demonstrable.

CONCLUSION

The attempt has been made to present the current status of smallpox avoiding the technicalities of etiology, pathology and present research work, and using only material which can be readily understood by non-medical readers. We have seen smallpox is quite prevalent in the United States at the present time. Vaccination has been shown to have checked epidemics in different localities and has absolutely protected the individual from the disease if successfully per-

formed within five years previous to the exposure. Strict vaccination laws have been shown to be more efficacious than lax ones in the control of smallpox. The United States Supreme Court has given decisions to the effect that a state can enact and enforce compulsory vaccination laws. Experience has shown that present ill effects from vaccination are nil. In spite of all these facts, statistics show that in 1923 the United States with its supposed enlightened civilization was the third country of the world in the prevalence of smallpox and probably will show that in 1924 it heads the list.

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MEMORY DEFECT OF KORSAKOFF TYPE, OBSERVED IN MULTIPLE NEURITIS FOLLOWING TOXEMIA OF PREGNANCY*

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It has long been recognized that alcoholic multiple neuritis is frequently accompanied by an interesting type of psychosis which is now popularly designated as Korsakoff's psychosis. Impairment of immediate memory, mild mental clouding, confusion and fabrication, comprise the salient features of the syndrome. For a considerable period of time, after the acceptance of the Korsakoff syndrome, little reference was made in the literature to its occurrence in the multiple neuritides having their etiologic basis in toxemias other than alcohol. Recently however, our attention has been called to the presence of memory defects associated with carbon monoxid poisoning, and it has been observed that not infrequently such defects have been of long duration, if not permanent in character.

Sometime in April, 1914, I was afforded the opportunity of examining Mrs. B. W. T. who had recently been admitted to the Iowa Methodist Hospital. Mrs. T. was at that time, suffering from a well marked attack of multiple neuritis, which had followed shortly after a therapeutic abortion, necessitated by pernicious vomiting of pregnancy. In this case, aside from the ordinary polyneuritic symptoms, the point of chief clinical interest was the memory defect which she then exhibited, and which immediately made me think of its similarity to the amnesia observed in alcoholic neuritis. I was therefore, much interested in following up the subsequent course of the malady. It did not occur to me then that such cases are relatively infrequent; therefore I had no thought of publishing a clinical report at the time the case was under observation. It was not long after, however, that I saw a similar case which also followed pernicious vomiting of pregnancy, and during the past two years, two others have come to my attention.

I regret that in making this report, much of the minutiæ and clinical detail may have to be omitted owing to the fact that three of the patients were examined during hurried consultations in the rural districts, but I trust that I shall bring out sufficient data in each case, to establish beyond a reasonable doubt, the diagnosis and the associated memory defect which makes this report justifiable.

In looking over the text-books on neurology, psychiatry and obstetrics, I find few helpful references pertaining to this subject, which is frequently dismissed with a statement to the effect that multiple neuritis due to puerperal infection is an occasional complication of the puerperium. The whole subject of toxemia of pregnancy is as yet, in a chaotic state. It is to be hoped that modern methods of research in the field of blood chemistry may clear up some of the theoretic speculation which pertains to it, but at the present time we only know positively, that certain toxins, apparently of endogenous origin, are frequently manufactured in the body of the pregnant woman and do lead to eclampsia, pernicious vomiting, and other toxic phenomena.

Before presenting my case reports I would like to refresh the reader's memory on a few points pertaining to the subject of multiple neuritis,

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making special reference to the so-called puerperal type, and to those forms in which marked morbid psychic phenomena have been most prone to occur. It is a well established conclusion that local or multiple neuritides may be caused by a great variety of infectious diseases and poisons, that the infections which are most prone to generate tenacious toxins are most frequently followed by neuritis, and that the neuritides following metallic poisoning usually manifest themselves as subacute or chronic sequelæ, no matter whether the intoxication be acute or chronic. We are much more apt to have multiple neuritis following diphtheria, scarlatina and typhoid, than we are the lighter infections observed in the more mild and evanescent exanthemata. This is undoubtedly due to the fact that in the former diseases, the nervous system is more persistently saturated with chemical poisons generated or incited by the microorganisms which have invaded the body. In other words, it seems apparent that the causative agents of these more grave disorders produce toxins in greater abundance, and that said toxins are more freely distributed throughout the body by way of the circulatory system and lymphatics.

Among other forms of multiple neuritis the alcoholic type has possibly afforded the greatest opportunity for clinical study, since the charity hospitals in our large cities have heretofore always harbored a large contingent of liquor saturated, human derelicts. In 1887, Korsakoff[1] described a form of mental disturbance which he found to be a very frequent complication or symptom, of alcoholic multiple neuritis. This psychosis presents as its outstanding features, a defect in immediate memory, retroactive amnesia and fabrication, with almost normal retention of past memory. At the present time the literature teems with case reports confirming his observations.

Since the advent of the automobile, and the more extensive use of coal gas, quite a few cases of Korsakoff's psychosis have been reported as occurring in the carbon monoxid neuritides, and it has been observed that the defect in immediate memory in these cases, has been very marked and prolonged—so prolonged, in fact, that it is thought that in many instances it is permanent. It was not until I had the opportunity to observe the clinical course in the case of Mrs. B. W. T., whose history subsequently appears in this report as case 1, that I knew that the Korsakoff syndrome might appear in the multiple neuritides having their etiologic origin in the other forms of toxemia.

It will be of interest to note that in a very extensive and detailed contribution to this subject by Von Hosslin[2] the statement is made that the Korsakoff syndrome is reported as having been observed in the multiple neuritis following toxemia of pregnancy, long before Korsakoff placed his syndrome before the scientific world. In addition to this, the same contributor states that pro rata, the incidence of this psychosis is much more frequent in the neuritides following gestational toxemia than in alcoholic neuritis. (The same old story—"There is nothing new under the sun.") Von Hosslin is further responsible for the following reliable conclusions pertaining to this subject: that there is a form of multiple neuritis which takes its origin in the toxemia of pregnancy, which is wholly independent of any infection; that this malady may have its onset either before or after, delivery; that when recognized, therapeutic abortion should be resorted to; that the termination of pregnancy hastens recovery; that convalescence is protracted; it having been four years before the patellar reflexes returned in one case which came under his observation, and that isolated neuritides may occur in place of the disseminated type, their location being determined frequently by intercurrent circumstances, such as slight trauma and stretching of the nerve trunks during the violent physical activities incident to delivery, or as the result of pressure of the foetal head in the mother's pelvis. This rather lengthy reference to Von Hosslin's article is prompted by the fact that as far as I have been able to find, it is the most comprehensive and exhaustive treatise obtainable, on this subject.

In making a study of the effect of various toxic substances on the nervous system, it has probably occurred to us all that although their baneful effect most frequently seems to confine itself to the peripheral nerves, it is reasonable to doubt whether this dividing anatomical line can safely be drawn. One has only to ponder upon the protean manifestations of epidemic encephalitis, the various forms of myelitis, and the nervous sequelæ of the flu, to convince himself that it is far oftener a "happen so" than otherwise, that one nervous structure becomes involved, and another remains intact. At this point the mental disorders which accompany such toxic processes as the one under consideration, tend to bridge over the gap, and give us a clinical foundation for the belief that in many, and possibly in all cases of profound toxemia resulting in multiple neuritis, the central as well as the peripheral nervous structures, are involved.

In two of the cases to be subsequently reported, a temporary loss of sphincter control was observed, and while this was attributed at the time, to mental clouding, I have never been fully satisfied that this explanation is adequate. Then too, in case 2, also to be subsequently reported, the muscular atrophies which were pronounced during the third month of the illness, tended to be irregular in their distribution, suggesting a nuclear origin with preponderance of marked tissue reactions in certain spinal segmental areas. Apropos of this phase of the subject, we are indebted to Stuart[3] who in an article entitled "Puerperal Neuritis and Poliomyelitis", recites the clinical history of a typical fatal case of multiple neuritis originating in the toxemia of pregnancy, in which an autopsy was performed, followed by a complete systematic microscopic study of representative portions of the whole central nervous system. As a result of this investigation, it was found that in addition to the classical changes in the nerve trunks which characterize multiple neuritis, there were also extensive degenerative changes in the posterior and lateral tracts of the cord, and of its ganglionic cells as well, the cells of the anterior horns in the cervical region seeming to have suffered most.

Case 1. Mrs. B. W. T. entered the Iowa Methodist Hospital, March 9, 1914, with an admission diagnosis of pernicious vomiting of pregnancy, and the following history was obtained from her attending physician, the husband, and the patient herself: female, age twenty-nine, married five years; one living child aged two; no previous miscarriages; vomited rather persistently for three months during the first pregnancy.

Family history negative, with the exception that one sister has twice been confined in a sanitorium for a brief period, on account of some mental disorder.

Previous history: At the age of ten within a period of three months, patient suffered from measles, pneumonia, and typhoid fever, but made an uneventful recovery from all; has had a few attacks of tonsillitis; at age of eighteen had a fall which she says produced some uterine prolapse; otherwise, previous history, negative.

Present history: Became pregnant about December 15, 1913; about February 1, 1914, began to suffer from severe incessant vomiting which continued for approximately six weeks, during the first month of which she was cared for in her home by her family physician. On admission to the hospital March 9, the attending physician on whose service she was admitted, made the following clinical notes; "has been vomiting on an average of ten times a day, more in the morning, but also has severe attacks late in the evening; some blood has recently been observed in the vomitis; yesterday had some abdominal pain and a slight bloody vaginal discharge; thinks she has lost twenty pounds in weight since the beginning of illness; patient brought to hospital on cot; very weak; pulse 116; temperature 99; respiration 24; tongue moist and clean; cranial nerves negative; thyroid gland normal; heart and lungs negative; abdomen retracted; uterus enlarged and palpable; extremities normal. March 13, after restriction of food, and enemata containing large doses of bromide, the vomiting has been much relieved; uterine pains have increased and the hemorrhagic vaginal discharge has become more profuse; therapeutic abortion deemed necessary. March 13, uterus emptied; patient in critical state for several hours following the operation; required considerable stimulation; now much improved; no vomiting." After the last notation, patient gradually improved, grew somewhat stronger, and up to April 1, it was thought that convalescence had been thoroughly established. A clinical notation dated April 1, indicates an unexplainable attack of vomiting, necessitating restriction of food. A pelvic examination at this time revealed no abnormality, and it was thought that patient was developing a neurosis. At this stage of the illness, urine analyses were negative, but a blood count revealed a mild degree of secondary anemia. Shortly after this, Mrs. T. noticed that her lower extremities felt very heavy, that they tingled and were painful. This rapidly increased until the numbness was very pronounced. The power of voluntary movement was lost in the lower extremities and the pain became very severe. Within a few hours the same sequence of symptoms developed in the upper extremities and it was only a short time until voluntary movement was impossible in all four extremities. About this time there occurred a very marked diminution in visual acuity. When the multiple neuritic symptoms became well established, it was noted that some mental confusion developed, the most remarkable feature of which, was a loss of memory for recent events. There was no distinct tendency to fabrication, but the memory defect was identical with that observed in cases of alcoholic neuritis or carbon monoxid poisoning. At one time patient thought that the noises in the hospital were the result of a reception being held.

At the time I was permitted to see the patient, the multiple neuritis syndrome had been established for about two weeks. I found her very dull and apathetic. She responded to questions fairly well, but could not remember events which had transpired ten or fifteen minutes before. There was a marked flaccid paralysis of all four extremities; the deep reflexes were abolished; the nerve trunks were very sensitive to pressure, and the peripheral portions of the extremities were anesthetic and analgesic. The muscles of the extremities, and some of the trunk muscles were atrophic. The pupils responded normally to light and distance. At this time a loss of sphincter control tended to confuse the diagnosis, but it was subsequently determined that the incontinence of bladder and bowel was due to her cloudy

mental state, and not to spinal cord involvement. A blood Wassermann made at this time was entirely negative. After suffering for over a month from the neuritic symptoms, during which time the stomach and eye symptoms completely cleared up, Mrs. T. was discharged from the hospital, and returned to her home. The subsequent history pertaining to her convalescence I have recently obtained from the patient herself. She makes the following statement: "My hands and upper extremities improved first; the sensibility came back first, then the muscular action began to improve, but it was late in August, 1914, before I could hold my hands on a level with my forearms (on account of wrist drop); I was unable to get about on my feet until February, 1915; the return of sensibility here as in the upper extremities, preceded that of motion; one thing which delayed walking, was the fact that my legs and thighs had become drawn up during the period of their disability, and it took considerable massaging and manipulation to get my knees straightened out; my memory had pretty much returned by the time I began to walk, but even now (December 5, 1920), it is a little bad for recent events." At the time Mrs. T. gave me the history of her convalescence, I made a brief neurological examination for the purpose of ruling out any cord disease, such as tabes, and the only abnormality I could detect was a slight weakness in the anterior tibial group of muscles, absence of the Achilles jerks, and a little tendency to steppage gait. The pupils were prompt to light and distance, and there were no indications of any nervous trouble that could not well be explained by her previous attack of multiple toxic neuritis.

Case 2. Mrs. H. P. female, age twenty-six; married five years; no living children; husband living and well.

Family history negative, except that the mother of the patient is somewhat neurotic, and vomited a great deal throughout her pregnancies. Previous history, negative.

Sometime in July, 1916, patient became pregnant; at about the end of the sixth week began to be very nauseated and vomited frequently; vomiting rapidly increased in severity and reached its acme about the middle of October; every effort to control the trouble seemed to be fruitless; on November 1, it was decided that a therapeutic abortion was advisable, and this procedure was resorted to at once; patient states that she has no recollection of entering the hospital, three days prior to the abortion; within a very short time after the uterus was emptied, probably a matter of two or three days, a marked weakness developed in the lower extremities; little pain was complained of, aside from what the patient designated as, cramps in her legs; at the time when the lower extremities became disabled, there were a few occasions on which the bladder and bowel were evacuated involuntarily.

On November 19, I was permitted to see Mrs. P. in consultation with her family physician, and the following observations were made and noted; patient is in fair state of nutrition; pulse 110; temperature 99 2/5; respiration 24; heart and lungs negative; pupils prompt to light and in accommodation; abdomen and pelvis negative; ocular fundi negative; hearing normal; speech normal; complains of some dimness of vision; facial movements normal, as is facial sensibility; tongue protrudes straight; palate normal; olfactory and gustatory functions normal. There is a marked flaccid paralysis of both lower extremities, with bilateral absence of both patellar and Achilles reflexes. There is a slight bilateral and symmetrical diminution of sensibility to pin prick and cotton wool, most marked in the feet and gradually shading off into normal as the knees are approached. The posterior tibial and sciatic nerve trunks are hypersensitive to pressure; plantar reflexes normal; the lower extremities exhibit hyperhydrosis; there is some weakness and clumsiness of the upper extremities with a slight suggestion of parasthesia.

The patient's mental state is of great interest. She is somewhat confused at times, highly emotional, and her memory for immediate happenings is extremely poor. She does not remember from one moment to another what has happened. She is disoriented as to time, but not as to person or place. There is no distinct tendency to fabrication, although her confusion as to the lapse of time, occasionally causes her to make misstatements. A urine analysis reveals a faint trace of albumen with a few hyalin casts, but is otherwise negative. After having examined Mrs. T. a short time previously, it was not at all difficult to arrive at a diagnosis in this case. I was particularly interested to note that same memory defect occurring in both cases.

In January, 1917, I made a trip to the home of Mrs. P. and made a second examination, with a view to determining the progress or degree of improvement which she had made, and I here present the following memorandum: Mrs. P. presents no abnormalities of the cranial nerves; she has full control of the upper extremities, and there are no sensory changes to be made out, save for a little hypesthesia of the cutaneous surfaces of both feet. She is now able to flex both thighs on the abdomen, can move both feet and all the toes quite freely, but cannot extend the legs on the thighs. Dorsal flexion of the feet is still accomplished with great difficulty. The muscles of the lower extremities are uniformly and markedly atrophic, and there is even some atrophy of the lumbar muscles. The nerve trunks in the thighs and legs are still very sensitive to pressure. The sphincters have been under complete control since the time of my first examination. The memory defect has almost disappeared, though there is still some difficulty in remembering recent happenings."

In a recent letter from Mrs. P. in answer to one of inquiry sent her before starting to complete this report, she states that she was unable to be about and use her lower extremities until June, 1917, seven months after the onset of her illness, and she states that her memory was very noticeably impaired for a

year after the initiation of her illness, and is, she thinks, still somewhat defective.

In this case, as in the previous one, a diagnosis of multiple neuritis with memory defect, following toxemia of pregnancy, was I think, wholly justified, and in this case as in the former, there was at no time any convincing evidence of puerperal or gestational infection.

Case 3. Mrs. E. K. E., formerly a nurse, became pregnant some time in August or September, 1918. During the second month of gestation she developed hyperemesis which reached its greatest severity during the third month, at which time her attending physician considered the advisability of terminating the pregnancy. Being exceedingly desirous of giving birth to a living child, she herself determined to brave the dangers and attempt to continue to full term. During the fourth month of the pregnancy, the vomiting became less severe, but about this time she suffered from an attack of the flu, which contributed greatly to her exhaustion. Very shortly after her recovery from the flu, in association with a residuum of the vomiting, she developed rather abruptly, a symmetrical, flaccid paralysis in all four extremities, accompanied by extreme pain, and acute sensitiveness of the nerve trunks. While these symptoms were manifest in the upper extremities, they were much more aggravated in the lower, and the peripheral portions were more involved than the proximal. There was some blurring of vision, slight diplopia, mild delirium, loss of immediate memory, but no tendency to fabrication.

I was permitted to examine this patient at the beginning of the seventh month of gestation. The essential features of the examination were as follows: temperature 99⅘; pulse 120; blood-pressure, systolic 110, diastolic 80; heart negative, with the exception of a very faint first sound at the apex; abdomen enlarged, the uterus easily palpable, with its fundus extending to a point two inches above the umbilicus; there was no evidence of involvement of the cranial nerves, save for unequal, slightly irregular, fixed pupils, which were unresponsive both to light and in accommodation; there was a marked weakness of the musculature of the upper extremities; this was perhaps more marked in the extensors of the wrists; sensibility to cotton wool and pin prick was diminished in the hands; the deep reflexes in both upper extremities were present, but diminished; there was slight atrophy of the small muscles of the hands; in the lower extremities a like condition was revealed, only in a more marked degree, the anesthesia and analgesia being very pronounced in the feet; there was great muscular weakness with foot drop; the posterior, tibial nerves were exceedingly hyperesthetic to pressure and a moderate degree of muscular atrophy was noticeable; the patellar and Achilles jerks were absent and complaint was made of subjective, deep seated, aching leg pain; the patient's most characteristic mental abnormality was a diminished immediate memory; in this case, this feature was not so pronounced, but was sufficiently so, to be readily observed on examination, and to attract the attention of her relatives and bedside companions; a blood count was not made; the urine was at no time of diagnostic interest, though on one or two occasions it contained a slight trace of albumen, with a few casts; the blood Wassermann was entirely negative.

Aside from confirming the diagnosis of the family physician, the principal reason for my having been called in consultation was to determine the advisability of terminating the pregnancy, or allowing the patient to go to full term. Inasmuch as I did not see her until the seventh month of pregnancy, at which time the vomiting had ceased and all the symptoms of the neuritis were receding, and inasmuch as we felt that delivery at full term would not be attached with much more strain than at seven months, we felt that the chances were about equal, whichever course was taken. We therefore allowed the patient to cast the deciding vote and permitted her to proceed without premature delivery. On March 28, 1919, some time during the eighth month of gestation, she was delivered of a slightly premature child, and died twenty-four hours later. I have been unable to gain any satisfactory information as to the exact cause of death, and am obliged to assume that it was the result of either heart failure or exhaustion.

The points of greatest interest in this case are: (1) the multiple neuritis with memory defect; (2) the fact that she had apparently weathered the storm of gestational toxemia, and an attack of flu as well; (3) that premature delivery did not take place until the eighth month of the gestational period.

Case 4. Mrs. E. W., age thirty-six, married fifteen years. Three previous pregnancies which went to full term; considerable vomiting in the early months of each.

Family history negative.

Previous history: the patient had one attack of a psychoneurotic character, at the age of thirty, which lasted three and one-half months. Otherwise, previous history negative.

The pregnancy which seems to have been the exciting factor of the present illness is thought to have begun June 6, 1920. About June 28, patient began to suffer from hyperemesis which increased in severity, reaching its acme about July 15. She was unable to retain anything except a very small amount of nourishment up to the time of therapeutic abortion, which was resorted to August 21, 1920. There was a slight elevation of temperature for a few days subsequent to the curettage, the highest point reached being 102° F. There were however, no other indications of sepsis. On or about September 1, 1920, patient became disoriented—thought she was in some place other than her home; complained of pain in her lower extremities, especially in the posterior tibial region; within an hour after eating would forget the articles which composed the meal; was also disoriented as to time—could not remember persons who had been in to see her, a half hour after they

had made their visits, but her memory for past events seemed to be perfectly normal.

At the time of my examination which was incident to a consultation with the attending physician, on October 19, 1920, I had occasion to verify the mental peculiarities just given. In addition, I found the cranial nerves to be normal; heart and lungs negative; pulse 110; temperature 99⅘; the movements and sensibility of the upper extremities normal; marked weakness of the muscles in the lower extremities, especially from the knees down; subjective and objective anesthesia most pronounced in the feet, shading off into normal in the vicinity of the knees; extreme tenderness of the calf muscles and pronounced hyperesthesia of the posterior tibial nerves on pressure. Owing to a lack of facilities, a blood count was not made. The urine analysis made by the attending physician just prior to my examination, revealed no abnormalities, save a slight trace of albumen.

Basing my opinion upon the clinical history and its sequence of events, together with the unquestionable evidence of neuritis in the lower extremities, and the characteristic mental disturbance, the diagnosis of puerperal multiple neuritis accompanied by a Korsakoff's psychosis, was made. In a communication received from her family physician, dated January 12, 1921, he states that all mental symptoms seemed to have passed away by November 20, 1920, and the patient was able to walk with assistance December 1, 1920. Her memory at the present time seems to be perfectly normal, but there still remains in the lower extremities, some atrophy and reduction of muscular power.

For the sake of clarity, it may be well to emphasize the outstanding features in the foregoing case reports. In all four cases there existed in the early months of pregnancy, hyperemesis. In cases 1 and 4, therapeutic abortion was performed at the end of the third month, and in case 2, during the fourth month. In case 3, the patient went to the eighth month and was delivered spontaneously. In cases 1, 2 and 4, although there was abundance of evidence of profound toxemia before abortion, the symptoms of neuritis did not occur until a short time after the uterus was emptied. In case 3 the patient struggled through the state of hyperemesis and just prior to spontaneous delivery during the eighth month, seemed to be recovering from her neuritis. In all four cases the clinical evidences of multiple neuritis were sufficiently classical to place the diagnosis beyond reasonable doubt. Cases 1 and 2, because of temporary sphincter incontinence, suggested the possibility of spinal cord involvement, and in case 2, the irregular distribution of the muscular atrophies much more strongly suggested cord disease. In all the cases a loss of recent memory and unreliability of statement, were very pronounced symptoms. In case 2, retroactive amnesia was a prominent feature. In case 3, death occurred after delivery, while in case 4, sufficient time has not yet elapsed to make a report possible. She is however, convalescent. In cases 1 and 2, both patients feel that they have never fully regained their orginal powers of immediate memory, seven and five years respectively, after the onset of their illnesses. Mrs. T. (case 1) still has absence of the patellar reflexes and a slight tendency to foot drop.

In conclusion I wish to emphasize the following salient clinical facts:

1. That toxic multiple neuritis is a frequent sequel to hyperemesis gravidarum.
2. That multiple neuritis may develop during gestation or in the puerperium without any dependable evidence of underlying infection.
3. That a mild psychosis of the Korsakoff type is very prone to occur in this type of multiple neuritis.
4. That therapeutic abortion is perhaps too long deferred in many cases of hyperemesis and is the best remedial measure, and the most sure means of preventing multiple neuritis.
5. That the Korsakoff psychosis was recognized as a very common accompaniment of multiple neuritis following hyperemesis gravidarum, long before Korsakoff affixed his name to the same syndrome which he observed in alcoholic neuritis.

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THE TREATMENT OF INFECTIONS BY MEANS OF BLOOD TRANSFUSION*

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The indications for blood transfusion may be said to exist in any diseased condition where such qualitative and quantitative changes have taken place in the circulation, so as to render it unfit to perform its physiological functions in a normal manner. First applied to restore the losses due to hemorrhage and the anemias produced by diseases specifically affecting the blood itself, its usefulness in other pathological conditions very soon become apparent, so that at present the operation of blood transfusion is finding a wide clinical application.

The apparent success when the blood of an

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ordinary healthy donor was used, quickly suggested that the usefulness of this form of therapy might be extended by employing blood from donors especially immunized against the infection which was to be combatted. "A quantity of blood taken from a vigorously reacting man and given to a debilitated patient should theoretically supply him with a large amount of the antibodies of which he stands in need. During the war it was found that transfusion enabled an exsanguinated patient better to withstand the attacks of pyogenic and putrefactive organisms in his wounds, but this was probably due to improvement in the general circulation which resulted rather than to any bactericidal properties in the transfused blood. It is known that outside the body blood has considerable powers of inhibiting the growth of bacteria, but ordinarily it does not possess bactericidal properties. It has been claimed, on the other hand, that the best criterion of the degree of immunity in an immunized animal is the measurement of the bactericidal power of its blood. There is justification, therefore, for attempting to combat a pyogenic infection by the transfusion of immunized blood."[7]

One of the earliest attempts of this kind was made by Hooker,[5]who, in January, 1914, reported a case where an eleven year old boy was treated for a general staphylococcus septicemia by the transfusion of blood from his uncle who had been previously immunized by vaccines derived from the organism infecting the patient. At the time of transfusion the patient's hemoglobin was 30 per cent; ten days later it was 80 per cent, the temperature was normal and the local condition—osteomyelitis of the femur—was much improved.

Encouraged by this result, three years later Hooker reported five more cases of transfusion for septic conditions, in four of which the donors had been previously immunized. "There were two hospital cases, both chronic staphylococcus infections accompanying a longstanding condition of multiple suppurative osteomyelitis and resulting in general sepsis, progressive anemia and failing resistance. The other three cases were all seen in private practice and were general bacteremias developing rapidly from localized acute suppurative processes. In all five of these cases the patients were so ill at the time transfusion was proposed that the outlook was considered well-nigh hopeless, and transfusion was resorted to as the only possible chance of avoiding a fatal issue. The two chronic cases made a complete recovery. One of the acute cases—an osteomyelitis of the tibia and radius—made an immediate and uneventful recovery; the other two acute cases—both affections of the face with bony involvement, improved in a most striking manner but died suddenly, while seemingly convalescent, from cerebral embolism, on the eighth and eighteenth days respectively, following their last transfusion."

A more extended trial was given the method by Fray,[3] an English medical officer working in France during the summer of 1918. He later reported nine cases, but his results were not especially brilliant. He remarks, however, that when the cases are carefully analyzed it will be observed that in all but two the condition of the patients was absolutely hopeless before the transfusion—that they were indeed, practically moribund. Yet "in the first case, which appeared equally desperate, a completely successful result * * * which alone was worth the trouble and justified the trial of the method" was achieved. "In the previous experience of none of the observers of the case has a patient in such a condition recovered.

Some of the practical points which suggested themselves to this author were: the advisability of early treatment; the necessity of doing the transfusion very slowly to prevent a sudden overfilling of the venous system and consequent transudation into the serous cavities which may be "rapidly converted into purulent fluids owing to the presence of circulating pyogenic organisms", and the avoidance of any clotting, which may later lead to the formation of septic emboli.

As long ago as 1915 Ottenberg and Linmann reported the treatment of ten pyogenic infections by blood transfusion, and felt that the four patients who recovered owed their lives to the transfusions, but when other treatment is also being applied it is impossible for even the most exact observer to be positive just what factor served to turn the balance of the scale. Little[8] has put on record a case of most extensive "septicopyemia", following "massive influenzal pneumonia", where transfusion from immunized donors was used when the patient's condition was so desperate that the reaction from an autogenous vaccine would undoubtedly have proved fatal, and though some twenty-four surgical incisions were made, and many other measures applied, the author is confident that the child's life was saved only by the four transfusions of immunized blood.

The value of transfusion in combatting the complications and sequelæ of post-influenzal pneumonia, is also attested by Rose and Hund,[13] who used the treatment in twenty-eight cases during the epidemic of 1918. Many of these patients were practically dying when the transfusions were attempted, so that their results, six deaths, making a mortality rate of 22.4 per cent, can be

regarded as fairly encouraging. Of twenty-one patients who were not transfused, nine or 47.7 per cent, died, and while the comparison of such small groups is in no way conclusive, it should serve as a basis for further investigation.

Attempts have been made to employ transfusion in such bacterial infections as tuberculosis, typhoid fever and measles. Several French physicians have used it in measles with satisfactory results. Terrien[14] reports the case of a baby of thirteen months suffering from *rougeole maligne* (malignant measles), whose condition on the sixth day did not offer the slightest hope of recovery. A subcutaneous injection of 20 c.c. of whole blood from an older brother who had had measles six months before, brought about immediate improvement and prompt recovery. The author states that venous transfusion was impossible because of the age of the child and the small caliber of its veins; puncture of the longitudinal sinus was evidently not considered. Especial attention is called to the length of time which has elapsed since the donor had recovered from the infection, as bearing witness to the persistence of the bactericidal powers of his serum.

The few reports regarding the use of transfusion in typhoid infections bear witness to its value, though so little work has been done along these lines that accurate deductions are impossible. McClure and Dunn[9] in 1917 gave immunized blood transfusions to a typhoid patient whose recovery they attributed entirely to this therapy and of the five typhoid cases in which Ottenberg and Libmann employed the same treatment—all practically moribund patients—there were two recoveries.

In tuberculosis the results have not been encouraging, but I have been unable to find any records of the use of supposedly immune blood. At the Chicago Municipal Tuberculosis Sanitarium carefully controlled observations were made in 1920, advanced cases with unfavorable prognosis being transfused with the blood of normal donors who had proved negative to all the usual blood tests. "The clinical course in this series of cases was not appreciably altered" and the conclusion was reached "that normal blood is devoid of that specific element which will arrest the progress of the disease".

To ascertain the value of transfusion in the toxemic stage of diphtheria, Dr. Esther Harding of London carried out an extensive series of animal experiments. She states that "the results of the experiments show definitely that a certain proportion of animals suffering from diphtherial intoxication of such severity that if treated with antitoxin alone they would surely die, will, if treated also with blood transfusions, recover. It is", she adds, "safe to conclude that in clinical diphtheria treatment along these lines will probably reduce the risk of death—i. e., will increase the chance of survival, and by safeguarding the suprarenals will shorten the illness and lighten its severity. If blood transfusions served merely to protect the suprarenals the indication for their use in all very severe cases would be strong".

One case of nephritis has received the blood transfusion treatment, so far as my search of the literature has revealed. This patient was treated by Jeffrey Ramsay, a British medical officer during the summer of 1918, at a casualty clearing station in France, but was not reported until after W. Blair Bell published the account of a case where transfusion had been successfully used upon an eclamptic patient who was at the point of death. In Ramsay's nephritic case vomiting was incessant and the low blood-pressure and symptoms that complete suppression of urine was imminent suggested the employment of transfusion. Immediately after 1,140 c.c.m. of fresh blood had been injected, systolic pressure rose to 100 mm. and diastolic to 50 mm., vomiting abated and 24 ounces of urine were passed in the ensuing twenty-four hours. As the patient afterwards received alkali medication both by vein and by mouth it does not seem to be conclusively demonstrated that recovery was due to blood transfusion alone, but the fact of immediate abatement of the gravest symptoms following the introduction of fresh blood, is certainly highly suggestive.

Other conditions where blood transfusion has given satisfactory results, but because but one case, or at least a very small group has been reported, can only be mentioned as encouraging sign-posts pointing along the way of further study and investigation, are erysipelas and pellagra. Of the first, so far as I know, but a single case has been reported, that of Kaier, who used the blood of a convalescent adult for an eleven year old girl for whom all hope of recovery had been abandoned. This author comments upon the difficulty which would doubtless be encountered in most instances—especially outside of hospital practice—in procuring an immunized donor, but this does not, of course, detract in any way from the evident value of the treatment.

Regarding transfusion in pellegra, H. P. Cole of Mobile, Alabama, reported twenty cases more than twelve years ago.[1] I have not been able to find any further reports concerning this therapy, and as the author remarks at the close of his article that "without careful selection of cases and unprejudiced conclusions this procedure will fall

into unmerited disfavor, it may very well be that before the new and safer methods of transfusion were adopted his success was not attained by other workers. He had 60 per cent, of recoveries, which—inasmuch as all those transfused were in the last stages of the disease—can only be regarded as a most encouraging showing. In several cases there was an astonishing improvement in the mental condition and in all "there was a rapid increase in the patient's hemoglobin index, a rapid return of body strength, a return of digestive faculties, and an increase of body weight". No advantage was noted "in the employment of a donor who has recovered from pellegra as compared with a donor who has never had pellegra".

In this hasty and superficial survey of the subject of transfusion I have sought to show—first, the widespread interest this procedure has awakened in the profession, and secondly, the wide range of its application to almost the whole field of infections.

Viewed from the standpoint of its more restricted use in the treatment of the frank pyogenic infections—we find much evidence to attest its value.

I wish to cite briefly, two cases I have recently observed that embody features and results that I am sure coincide with the experience of many of my colleagues with similar cases similarly treated—and therefore present nothing new and startling.

E. C.—Underwent a double mastoid operation on January 5 and shortly following developed septic arthritis of the left hip. On January 11, a blood count showed reds 4,360,000, whites 14,400. On January 12, with temperature of 106, rapid running pulse, delirium and other symptoms of profound toxemia, the patient received his first blood transfusion.

Marked improvement followed within a few hours. Two days later his temperature was normal and his general condition was greatly improved. Following a period of quiescence of about ten days he again developed a septic temperature, which on February 6, registered 104. His blood count at this time showed reds 3,600,000, whites 12,500. On February 7, he received a second transfusion followed again by return to normal temperature and general improvement in his condition. By this time an abscess had become localized in the region of the left hip which was opened and drained, the pus showing a mixed culture of strepto- and staphylococci plus a few diplococci. On February 21, a blood count showed reds 4,130,000, whites 28,000.

He made an uneventful recovery, his body resistance being maintained by subsequent transfusions given from time to time as conditions seemed to indicate.

My second case I will review briefly:

F. K.—On December 20, met with an auto accident; result, a compound comminuted fracture of the right femur. Infection followed and he was brought to the hospital in a profoundly septic condition. On January 7, his blood count showed reds 1,920,000, whites 7,500.

Transfusion was done on January 7, and repeated on January 12, and 18, and again on February 2, and 5. The indication in each case was exacerbation of septic symptoms, rigors, followed by high temperature, dry tongue, rapid, running pulse and other characteristic symptoms of grave sepsis. After each transfusion there was a striking abatement of all these symptoms extending over a variable period. On February 7, the blood count showed reds 3,920,000, whites 12,500. After this date there was a gradual subsidence of septic symptoms and he was able to leave the hospital at the end of twelve weeks.

I feel satisfied in this case that the repeated transfusions enabled this patient to weather what in all probability would have proved an overwhelming toxemia; and by building up his resistance – hastened what would otherwise have been an extremely tedious and protracted convalescence.

In this rapid review of certain infections which have been successfully overcome by transfusion of both immune and normal blood, I make no pretense to have covered a field which is still but partially explored and awaiting tillage by patient and enthusiastic experimenters. Enough has been presented however, to demonstrate the undoubted usefulness of blood transfusion in septic conditions, and, I may venture to hope, to stimulate endeavors to extend its application.

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Discussion

Dr. Coral R. Armentrout, Keokuk—I think an author is always to be commended for bringing up a subject that is comparatively new. The use of transfusion as a therapeutic measure in the treatment of infections is one that a great many of us know something about, but which we all must know more about judging from the reports presented by the essayist. Theoretically from a bacteriological standpoint the doctor should have immunized blood for use in making transfusion, he certainly would be very much better off than in using blood from a donor who was not immunized. As always in transfusion cases, it is a good idea for us to think of some of the points in regard to which we must be especially careful: (1) To have the right sort of a donor, one whose blood is going to mix satisfactorily with that of the patient. (2) The question of technic. A couple of years ago I was at the Boston City Hospital where there has been developed the most perfect technic in blood transfusions I have ever seen anywhere, and they have used it a very great deal. And these points in technic must be developed if we are to use transfusion as a therapeutic measure in those conditions in which it is indicated. First, then, we must be sure we have the right donor, and then we must be certain of our technic, that we are absolutely perfect in so far as asepsis is concerned. (3) Then do not think that the donor is to be lightly dismissed as soon as you have taken from his veins the required amount of blood. If you do not use the donor carefully he is liable to develop serious trouble within the first few hours, therefore you should keep him quiet for a time after the blood has been drawn. This factor was mentioned at the Boston clinic often enough so that one must remember it. Ordinarily we do not hear anything about the donor, we take for granted that he will get along all right. But this point in the technic was brought out there so clearly that it made an impression on me and I give it for what it is worth. It would be very unfortunate to have the donor develop serious trouble within the first few hours because you allowed him to get up from the table and walk away. Keep him quiet. Then again, do not use the donor too often. Give him something to replenish the blood before you draw more from his veins. This is an interesting subject and one to which we will have to pay serious attention, because these severe cases of infection need everything we can give them. And if these multiple blood transfusions are going to be of great advantage we must be prepared to administer them.

Dr. Charles H. Magee, Burlington—I wish to say just a few words on this subject. I am here rather in favor of conservatism. I do not say that I condemn the newer things that are being brought up, but let us be just a little cautious. Yesterday we heard a young man read a paper wherein it was stated that in injuries to the skull under certain circumstances he would tap the lateral ventricle. Now, if I get my skull broken so that it is necessary to tap the ventricle I prefer to let the tail go with the hide. I warrant you this: That there are not ten men in this audience right now that can tap the lateral ventricle and do it right. Then another thing: Some one spoke about tapping the spinal cord and going into the spinal canal—spoke about it as though it was just as easy as opening a boil. Now we who in our work lay open the spinal canal and see that beautiful mechanism, feel like saying, "Boy, be a little bit careful with your trocar." Operators have not only invaded the brain, but the spinal column, and now they are going into the vein. The gentleman spoke of a couple of cases which after being transfused did awfully well, but they died. Let me call attention to the words of an old philosopher and surgeon, Dr. D. Hayes Agnew: "Many a time when I have been harassed with doubts by a case I have imitated the old mariner while approaching a strange coast in the night—I have cast out an anchor and waited for the day." Don't you think that is good? So instead of hopping up and pumping something into a man's back or brain or vein, just cast out an anchor and wait for the day.

Dr. Emil C. Junger, Soldier—At every one of these meetings I always get all puffed up because of the fact that I belong to a scientific body of men that can present a paper scientifically and can discuss it scientifically, and I go home and every case that comes in my office or that I see from this time till this time next year I tell them what I heard at the State Medical meeting, "That we have a case just like that and know just what to do!" That helps me immensely. But when I discuss these papers I am very willing to leave the scientific side to my brethren and discuss the other side. My discussions are generally like the kimona that covers everything and touches nothing. I am in sympathy with Dr. Magee, because we are out in the country and our constituents cannot be put together in a pen like so many guinea pigs and have them all immunized in order that we may be ready to get the various kinds of blood needed for all the infections that might come up. My people and patients out there will not let me stick anything into them unless they are actually sick. These infections that we speak of are acute, subacute and chronic. When acute you cannot do anything for the patient, he is dead in a day or two. When chronic you have pretty good drainage and these patients generally get over it themselves. In subacute infections you may be able to do something. But the thing that spoils it for me is that while so much can be done by the men who are specially prepared and have adequate facilities, in the wind-up they tell us that, if we don't get results then we come back and find fault with the treatment, adding, "you have to use brains with this treatment," and that lets us out. I just go home, do the best I can, and am always glad that I have been here.

ABDOMINAL EMERGENCIES*

John F. Studebaker, M.D., Ft. Dodge

This group of cases includes conditions which if unaided by an early operation frequently result in a needless fatality. These are divided into two classes, those due, first, to contusions and penetrating wounds and, second, to such diseases as perforation of ulcers, intestinal obstructions and certain acute abdominal inflammations. To successfully manage the treatment requires careful examinations, early diagnosis and prompt decision. To delay operation in some cases on account of the uncertainty of diagnosis may mean the sacrifice of life. For instance, to wait for the signs of a peritonitis to confirm the diagnosis of a ruptured intestine would court a disaster.

Contusions

Observation of a number of abdominal emergencies and perusal of the literature have taught me that the history of a contusion to the abdomen, as from a hoof, a flying board, or a fall demands that the injury be considered serious until you can prove it otherwise. Remember the dangers that may be present, first, hemorrhage and, second, the effusion of fluids from a hollow viscus which are chemical in action, in the early hours, and infectious later on. No matter how minor the symptoms may be, the case is a major one until you know what the lesion is and many times you do not know until you have explored.

The literature is legion with reports of many cases expectantly treated and later died because the physicians did not find external evidence of injury and a complete picture of shock, pain, local tenderness, rigidity, leucocytosis, rising pulse, fever and restlessness. Severe injuries, as a torn small intestine, have been reported when no early findings were present except slight nausea and a mild degree of pain near the umbilicus. The history and nature of injury are not thoroughly considered. A. J. Ochsner[1] is definite on the treatment of these abdominal contusions when he quotes from Jonas as follows: "Taking into consideration the locality of the blow from a small and hard object with existent rigidity and local tenderness, regardless of other symptoms, indications make intervention imperative." I examined a middle aged man in 1922, who received a sharp blow, in mid-abdomen, from a horse's hoof. He had localized pain and tenderness two inches to the left and above the umbilicus and moderate muscular defense. He had no shock and no evidence of hemorrhage. His pulse was normal and full. It was argued that the character of injury, local tenderness, and rigidity were reasons enough for surgical intervention. He was examined at frequent intervals during the next four hours by a number of physicians. After consultation we all thought best to wait since there was no rising pulse. Early in the evening the patient collapsed while at stool. His pulse became rapid and almost imperceptible; skin white, clammy and cold; and the left side of the abdomen filled with fluid. Now there was no doubt about a profuse hemorrhage in the abdomen, most probably from a splenic rupture, such as would come from any solid organ as the spleen, liver or kidney, if severely injured. Operation could not be done. Laparotomy, one week later, revealed a large amount of blood in the abdomen and a ruptured spleen.

Another case was that of a male patient, age twenty-eight, who was kicked, in mid-abdomen, by a horse. The early symptoms seemed minor. There was slight shock but no evidence of hemorrhage. Since there were present a history of a sharp blow to the abdomen, local tenderness near the umbilicus, and perceptible muscular defense, since an exploratory laparotomy produces only a short period of inconvenience and no harm and may save a life, and since operation offers the only hope of recovery, if an intestine is ruptured, surgical intervention was advised. Exploration revealed a ruptured ileum near the cecum which was carefully repaired. Recovery was uneventful.

The results were different in a boy eight years old who was also kicked in the abdomen by a horse and operated the next day. There were temporary shock and collapse which were followed by so much comfort that no operation was deemed necessary by the attending physician until the following day when the temperature and pulse came up with a rising leucocytosis. The general condition continued good and the abdominal findings were not suggestive. A consulting physician, without the history, declared on examination that there was nothing wrong in the abdomen. Laparotomy, twenty-four hours after the accident, revealed a torn, small intestine which was quickly repaired. The patient died of peritonitis forty-eight hours after the injury.

I want to repeat that all abdominal contusions should be considered serious until proved otherwise, and should receive the constant observation of the attending physician or his associates until a definite procedure is determined. There should be no hesitation in doing an exploratory laparotomy if the extent of damage cannot be learned without it. Clinical experience is convincing that

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it is the height of folly to wait for a leucocytosis, and greater still, to wait for tympany and general tenderness. This history of a blow, tenderness, rigidity, and a rising pulse rate are sufficient to indicate laparotomy. An ordinary surgeon with poor surroundings will have a greater number of recoveries if he operates within the first six or eight hours, than the most skillful surgeon who operates after twelve hours.

PENETRATING WOUNDS

It is absolutely urgent to explore at once if there has been a stab or a gun shot wound through the lower chest or in the abdomen. The location of an entrance wound in an anterior or lateral position is the most certain sign of an intraabdominal lesion. If it is lumbar, thoracic, sacral or pelvic, we must rely upon such general symptoms as pain, vomiting, rigidity, tenderness and pulse rate increasing with temperature. Winslow[2] says that "in all bullet wounds, no matter how remote the point of entrance, when abdominal symptoms arise the abdominal viscera should be inspected."

Webb[3] declares that the time of operation in penetrating wounds plays an important role in the prognosis shown by his cases as follows: "Nine cases operated within three hours after injury showed an uneventful recovery except the one in which the bleeding mesocolic vessel was overlooked. Six cases operated after three hours following injury and before ten hours, showed only three recoveries with an equal number of deaths from hemorrhage and peritonitis. Five cases operated ten hours after injury showed a recovery in but one case." Of the series he found ruptured bowel in twelve cases, liver two, ruptured bladder in three, kidney in two and spleen one. He advises that no time be lost in expectant treatment. Open the abdomen if you believe there is the slightest chance of rupture of any of its viscera or vessels. McGuire[4] reports 98 recoveries after 150 consecutive operations for penetrating gun shot wounds. The average time of operation after the injury was eight and one-half hours.

PERFORATIONS

The early recognition of perforations of stomach and duodenal ulcers is so imperative that any symptom suggesting them should absorb the clinical interest until the diagnosis is made. The sudden onset of intense, severe pain, board-like rigidity with transverse line retraction, general tenderness, full pulse of about normal rate in a man with a history of digestive disturbances, especially marked by periodicity and relief from food intake, point unmistakably to a perforation. Twenty-five per cent of perforations have no previous history of indigestion. But the violent onset of pain in a perfectly healthy man which is not intermittent as in acute indigestion, pancreatitis, cholecystitis and intestinal obstruction clearly visualize the true condition. The pain stops the patient immediately from work. If he is in a stooped position it is impossible to straighten him out for an examination. He splints his diaphragm, and he is afraid to move for fear of increasing the intolerable pain. Right here there is a great temptation to give morphine, but it is positively contraindicated in all abdominal emergencies until the diagnosis is made.

The onset of pain is so sudden and atrocious, that the examiner must differentiate acute hemorrhagic pancreatitis and other abdominal crises. Pancreatitis is marked by sudden agonizing pain, collapse, weak pulse and distention. Opening the abdomen discloses blood or prune colored fluid and fat necrosis. A gastric crisis of tabes may confuse but the stationary pupils, lightening pains, bladder symptoms, lost knee jerks and Rhomberg certainly remove all doubt. Angina abdominis and pectoris with sudden vice-like pains, especially after meals, must be recognized by the history of preceding shock and excitement in arteriosclerotic, short, stout individuals who have precordial distress on exertion and who respond to the therapeutic test of nitroglycerine. Acute pericarditis or other heart affections accompanied by epigastric pain or vomiting should also be kept in mind. These are usually free from the abdominal rigidity and tenderness associated with perforations.

If the diagnosis is perforation, prompt intervention is demanded for the safety of the patient. The greater responsibility rests with the physician first seeing the case, and he deserves just as much credit for saving the patient's life as the surgeon who does the operation. Early diagnosis, prompt decision and surgical intervention within the first six hours produce nearly 100 per cent cure. The mortality should be as low as in appendicitis. The success of the operation varies inversely with the time after perforation occurs. When operation is omitted the result is tragic for the mortality is practically 100 per cent, which is proved by many series of reported cases. Quervain[5] says "of those cases operated upon after twenty-four hours, only 25 per cent survive. Recovery may take place without operation but often at the expense of a perigastric or subphrenic abscess."

Intestinal Obstruction

In the hands of surgeons of large experience the mortality of acute intestinal obstruction is over 40 per cent which was about the same in the big hospitals twenty years ago. Moynihan tersely states that anything over 10 per cent is the mortality of delay. Sir Wm. Taylor asserts that if operations could be done within the first twenty-four hours it should not exceed one or two per cent. Andresen[6] states that McKenty had in forty-three cases an average mortality of 44 per cent and an operative mortality of only 11 per cent in operations done within twenty-four hours after onset of symptoms, 22 per cent within twenty-four to forty-eight hours, 50 per cent within forty-eight to seventy-two hours and 69.2 per cent after seventy-two hours. Andresen points out the reasons for delay, (1) the lack of knowledge on the part of the patients who give self-medication in the first twenty-four to forty-eight hours with purgatives, enemas and hot-water bottles and (2) the inability of the average medical man to make an early diagnosis or if made the failure to realize its significance to give the patient the benefit of the low mortality rate attendant upon an early operation. He insists that it is better to operate and find no obstruction than to delay and have a dead patient.

Dean Lewis[7] said in a recent address that pain, vomiting, constipation and tympanites always mean ileus and that the ladder pattern or intestinal loops on the abdomen are frequently overlooked in mechanical ileus. He especially emphasized the importance of early recognition of obstruction high up on account of early death from rapid absorption of destructive poisons in the high intestinal loops. Fraser[8] states that this sudden flooding of the system with powerful toxins is more marked in the abdominal emergencies of childhood than adult life, that these emergencies are confined to the distribution of the large and small intestines in the form of acute appendicitis, intussusception, pneumococcic peritonitis, intestinal obstruction, volvulus and strangulated hernia. He bears down on the time factor particularly in intussusception, acute appendicitis and intestinal obstruction which may speedily lead to a fatal termination. Always consider intussusception when there is a history of paroxysms of pain with apparent comfort in the intervals in a normal child, usually a boy. If blood and mucus are found in the rectum the clinical picture is complete and calls for an immediate operation. The complacent attitude or belief of parents that the child can't be very sick often makes early intervention impossible. If by careful explanation of the meaning of the emergency you fail to convince of the dangers of delay it is well to advise the parents of their right to assume all responsibility which is invariably declined.

Acute Inflammatory Conditions

Appendicitis is the most common abdominal emergency. Typically it is easily recognized by the usual syndrome of general pain in the upper abdomen, nausea or vomiting, fever, local tenderness and rigidity, occurring in the order given. In a child with pain or tenderness in right side especially, with a record of stomach upsets, start with a working diagnosis of appendicitis. Many physicians think it is a surgical disease at all times. We all agree that operation is urgent in the first twenty-four to thirty-six hours, and reduces the mortality at least 15 per cent over the expectant treatment. The complications of a late appendicitis as peritonitis, subphrenic abscess, multiple abscesses, and adhesions with partial or complete intestinal obstruction are often most difficult to handle and too frequently result in death.

With reference to the differential diagnosis of acute abdominal conditions, Ochsner writes that R. Morrison reminds us that abdominal pain may depend upon conditions not strictly surgical. Morrison divides them into three classes: 1. Irritating of the lower six intercostal nerves, resulting from pneumonia, pleurisy, pericarditis, herpes zoster, growths or caries of the vertebrae, tabes and hysteria, may produce abdominal pain and rigidity of the muscles and sometimes vomiting. 2. General toxic conditions such as arise from kidney disease, diabetes, Addisons disease, Henoch's purpura, ptomaine poisoning, typhoid, lead poisoning may cause acute abdominal pain. 3. Abdominal conditions such as pyelitis, kidney and ureter stones, tuberculous nodes and especially acute dilitation of stomach may simulate peritonitis. Therefore, every apparently acute abdomen calls for a painstaking general physical examination.

There are other abdominal emergencies which are much less frequent than those we have discussed such as gall-bladder perforations, superior mesenteric thrombosis, diverticulitis, torsions and post-operative acute dilatation.

Summary

Careful examinations, early diagnosis of the intraabdominal injury or crisis, and prompt decision are imperative to give the patient every advantage of surgical intervention. "Promptness of its performance consistent with thoroughness will save many more lives" than expectant treatment. Never give morphine until the diagnosis is made.

Abdominal contusions should always be considered serious until proved otherwise. A penetrating wound being present the abdomen should be explored without delay.

Early recognition and proper management of perforations keep the mortality down to that of appendicitis. Operation omitted, results in about 100 per cent mortality.

The fatal outcome of intestinal obstructions above 10 per cent is the mortality of delay. The public should realize that the present 40 per cent loss is largely due to palliative treatment in the first twenty-four to forty-eight hours. Powerful toxins will destroy life unless the emergency is promptly met.

To reduce mortality of abdominal emergencies, it is important that knowledge of early findings, rather than the late complete picture, be more strongly impressed upon medical students and physicians through our medical schools, journals, and societies and that the laity be taught the significance of certain symptoms the same as in tuberculosis and cancer in recent years. Very frequently a timely diagnosis is the major part of the management of the case, and the operation the minor part of the service.

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Discussion

Dr. S. A. Spilman, Ottumwa—It seems to me that this is one of the very important contingencies for all of us to bear in mind. I remember the case of a man who was injured in an automobile accident. He was standing behind his automobile and some one ran up suddenly and injured him. He had a very severe fracture of the thigh, and that was his only complaint in the beginning. He was brought to the hospital and the fracture reduced. Some hours later he began to complain of abdominal pain. I could not find any marks of trauma on his abdomen, but decided to do an exploratory operation and found that the bladder was ruptured. We might easily have overlooked this complication because of the other injuries. In another case I lost the patient because I did not realize that he had received a severe injury of the abdomen in an automobile accident. His pulse was only 80, he did not seem to have any shock and did not complain of much pain. I called for counsel, we all agreed to wait, and we waited too long.

Dr. Charles Ryan, Des Moines—I would like to emphasize two or three points on this subject, which has been so splendidly presented by Doctor Studebaker. When confronted with a case of abdominal emergency, the decision as to whether radical operation for cure, or whether a drainage or bridging operation is to be performed (this to be followed by radical operation later, when the case is in condition), is the first problem to be solved. The decision as to how far to go and when to stop, many times contributes largely for or against success. Many of these cases are seen late, after much damage has been done, and as a consequence they are poor surgical risks. In the supportive treatment, too much emphasis cannot be laid on (1) the necessity of the introduction of fluids into the body, through all avenues possible, and (2) maintaining the body heat while on the operating table, as well as after the patient has been placed in bed; (3) the administration of a sufficient amount of opiates to relieve pain and restlessness, and to insure rest until the crisis is past. In my experience, these three measures in pre- and post-operative treatment have proven of tremendous importance.

Dr. Charles H. Magee, Burlington—In regard to the essayist's fanciful statistics on early operation in the case of the ileum, in my humble opinion there is one slight drawback to these statistics—they are not so. I do not know what percentage of successes prevails in operation on the ileum, but in my own cases, taking them as they come, if I have one out of five I consider myself extremely lucky.

Dr. Emil C. Junger, Soldier—We have had two very valuable papers this morning, but they are both depressing, they both discuss conditions that are serious and dangerous and which may even cause sudden death. However, Dr. Woods' paper was so ably discussed by Dr. Billings that I experienced a little bit of hope springing up in me while the Doctor was talking. I have had symptoms of angina pectoris for a long time and also have had my gall-bladder removed. And if the worst comes to the worst I want to say good-bye to you now. I feel very much like the young chap who came into the doctor's office suffering with a pain in the region of the heart, and the doctor, who knew the circumstances and the girl, said, "You evidently had some trouble with angina pectoris last night, didn't you?" "Angina pectoris?—yes, doctor, I did, we had a few words between us, but how did you know her name?" Not every heart flutter or chest pain is due to organic heart disease. In regard to abdominal emergencies, I believe we should look to prevention as our chief aim in studying these conditions. There is some hope in being able to prevent a lot of these things that happen. The general practitioner who really knows his people can often explain functional disturbances that puzzle the specialist.

Dr. Studebaker—I appreciate the discussion even if some of the doctors do not agree with me. The

statistics which I looked up may not be correct, but at any rate I accepted them as correct. For a long time I have been impressed with the idea that it is up to the man who first sees the case to make an early diagnosis, and when he does this we should give him full credit for it. When the physician meets an emergency case he should stay on the job until the course of treatment is determined, and if he cannot stay he should put the patient where he can be kept under constant supervision. In cases of injury to the abdomen the patient should be sent to the hospital where he can be closely observed and ready for any emergency that may arise.

INDICATIONS FOR THE MASTOID OPERATION IN ACUTE OTITIS MEDIA*

Edwin Cobb, M.D., Marshalltown

In presenting this topic for your consideration, it is not that we should have the surgical aspects of an acute otitis media uppermost in our minds, but that in the present day conservative treatment of these cases, we are not led astray in allowing a pathological condition to progress and endanger the life of our patient or a chronic otorrhea develop. The eradication of the pathological conditions of the nose and throat, and their consequent danger of middle ear infection, have been one of the more potent factors in preventing mastoiditis and its possible surgical intervention.

To the layman, the involvement of the mastoid is fraught with great anxiety. But if we would explain to our patients that the mastoid cavity is only a continuation or a part of the middle ear, and that in practically every case of acute otitis media of any severity, there is an accompanying mastoiditis, this apprehension would be, to a great extent, relieved. It is important that in each patient presenting an acute otitis media, we determine the type of organism present and be fully aware of the topography of the mastoid in each individual case.

In a case of acute otitis media, where a wide paracentesis has been performed early, the recovery is usually spontaneous. These are the cases which recover with the minimum amount of surgical interference. If this drainage is not sufficient to relieve the existing symptoms, then it is usually necessary to drain the middle ear by the removal of the mastoid cortex.

Dr. White,[1] of Boston believes that in border line cases, it is perfectly proper to do an exploratory operation. In every case in which the mastoid was opened, the pathology justified the surgical interference. In considering further, the indications for the simple mastoid operation in the acute otitis media, let us assume that the nose, naso-pharynx and throat have all been placed as nearly as possible in a normal physiological condition.

Dr. Emerson[2] has come to the conclusion that the "Indications for opening the Mastoid", should be considered under three heads. First, the removal of the pyogenic infection; second, the conservation of the hearing and, third, the prevention of a chronic mastoiditis. Any or all of these indications may be present in a single case.

From the patient's viewpoint, the symptom uppermost in his mind, that leads him to seek relief for a mastoid infection, is the pain which is present. Practically every case of acute otitis will show some pain over the mastoid at the very onsent of the trouble. After free drainage is established by thorough incision of the drum, this pain usually subsides. I can recall similar cases, where the tip of the mastoid was very tender, which, with free drainage established, returned to a normal condition. Following the establishment of free drainage, should there be a recurrence of the pain, spontaneous in character, either in the ear or over the mastoid, that would not abate with the usual ice applications, and is sufficient to require the administration of an opiate, then posterior drainage should be established at once.

Dr. Dench[3] states that this spontaneous pain is found in many of the hemorrhagic types and he feels that this is an indication that the mastoid cells are very extensively involved.

Your attention is called to cases of mastoidalgia, which you have all seen at various times, several of which have been reported in the literature. They are usually of dental origin, with a negative history, blood count and otoscopic findings.

In cases where repeated incisions are necessary to establish the required drainage, it is better in most cases, to resort to posterior drainage. Each of you, I am certain, has seen cases where the history has shown repeated incisions continuing off and on for four or five weeks duration, which have not improved. It is in these cases that I am convinced we are unable to drain perfectly the infection and can only do so through the posterior wound. If one stops to consider how small the middle ear cavity really is, that where an infection is present, one good incision of the drum should drain this area, and the moment it is necessary to do two or more incisions of the

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drum, the indication is at hand for removing the mastoid cortex.

The temporary relief that is established in repeated incisions is really a menace to the patient, because the main symptoms of pain and temperature are concealed. The patient and doctor as well, are lead to believe the case is progressing well, whereas, the infection may be spreading to deeper and more vital tissues.

Local tenderness, if it can be judged rightly and interpreted soundly, is one of the most important symptoms. It must be remembered, however, that in acute cases, where the mastoid is well developed and particularly of a pneumatic type, where the cells are situated near the surface, that we may have a mastoid which is very tender, ten to fourteen hours following the onset of the acute otitis. This tenderness should not lead one astray, because it is usually found to disappear readily upon free incision of the drum. The antrum tenderness is of real significance and should be differentiated from the tenderness over the mastoid proper. In the latter, the pain is due to the periostitis present. A swelling and pain over the emissary vein, developing with the subsidence of this periostitis, generally means deep bone destruction. Even the absence of pain after the third day, does not mean all is well, because the breaking down of the cells is unaccompanied by pain. With recurring tenderness over the tip of the mastoid and then its disappearance and again in a few days this pain appearing over the antrum proper, this ordinarily indicates a mastoid involvement, which can only be relieved by surgical intetrvention.

In atypical cases, as pointed out by MacKenzie,[4] we may find a cortex so thick and resistant that the periosteum is not inflamed and consequently there will be no tenderness present. It is in these cases that complications may arise. In June, 1922, Phillips and Friesnor[5] published reports of five cases of acute otitis media followed by invasion of the mastoid and subsequent operation, in which the histories show no discharge at any time. Rae[6] of New York, states that close attention should be given the quiet cases and that we should always ignore the negative symptoms and concentrate on those which are positive.

Direct inspection of the canal and drum membrane, reveals to us the presence or absence of important symptoms; of these probably the most significant is the sagging of the postero-superior canal wall. This is an edema at the junction of the canal wall and drum membrane. The fold is absent and it is impossible to denote the place where the canal wall terminates and the drum begins. In some cases this picture may be obscured by the presence of an external otitis, rendering the direct inspection of the canal wall and drum membrane difficult. The edema that sometimes spreads over the mastoid cortex from an external otitis, must not be confused with the true involvement of the mastoid cells lying underneath.

The information given us by the temperature picture is not to be relied upon; that is, many cases may run an afebrile course. In fact, in some of the most extensively involved cases, the temperature was practically normal. In infants and young children there is usually an elevation of the temperature, high at the onset and then subsiding to 100 or 101 degrees. In some it may be recurrent. If during the course of an acute middle ear inflammation, there is an elevation of temperature accompanied by nausea, vomiting and tense headache, an immediate opening of the mastoid cortex is indicated. In cases where complications arise we may see the steeple-like temperature charts. The absence of temperature is no indication that the mastoid is not involved. Either a high temperature or a remittent temperature, persisting over many days, accompanied by a profuse purulent discharge with the tenderness over the antrum, calls for posterior drainage to be established.

Lillie[7] calls our attention to two general systemic infections, namely: pyelitis and pneumonia, which may be present during an acute otitis media. The temperature pictures in these cases might lead us into thinking a sinus thrombosis was forming.

Dr. Schwartze has well said that few cases of acute otitis media need to be opened until the eighth day after the onset of the middle ear infection. Most cases of acute otitis media where ample drainage is established, usually recover spontaneously. I prefer to treat acute otitis media cases conservatively, as long as there is no marked diminution in hearing, and as long as the discharge remains serous in character, and the patient is not becoming septic. Most active treatment must be instituted in the nose and throat, even to the extent of removing the tonsils and adenoids in certain cases. If, after a thorough paracentesis has been performed and the discharge at first is serous in character, changing later, in a few days, to thick greenish in type, with accompanying diminution in hearing, and the patient assuming a toxic appearance, posterior drainage should be established at once.

A few years ago, Dr. S. H. Large[8] of Cleveland sent out the following questionnaire to the various otologists—"In an uncomplicated case of acute otitis media, how long would you treat it

conservatively before opening the antrum?" Various time limits were given. Drs. Barnhill, Beck and Dench stated that they would treat these cases from ten days to three weeks, depending upon the symptoms present. Kerrson, Blake, Ray, Pierce and Ingersol came to the conclusion that they would treat them as long as four to six weeks, depending, of course, upon the symptoms present. In the discussion of the above paper mentioned, Dr. Stukey emphasized these three points: In the treatment of this condition, he would strive, first to prevent the case from becoming chronic; second, to prevent serious complications, and third, to conserve the hearing.

We all know that a discharging ear, which continues for weeks at a time, results in a thickened and crippled drum membrane and a certain possible ankylosis of the ossicular chain. A copious discharge occurring for weeks indicates that more than the middle ear is involved. If no improvement takes place by conservative methods, then the sooner posterior drainage is established, the better for the patient. In these cases, I am convinced that no definite time limit can be stated. If the hearing improves, corresponding to a diminution in the discharge, it means that the case is clearing up. If there is a sudden stoppage of the discharge and the canal shows signs of an interference with drainage, an immediate operation is necessary. Mastoidectomy in certain cases is as essential for the preservation of hearing as for avoidance of a fatal termination.

An acute infection of the middle ear, which is going to get well after the incision of the drum, will do so in most cases, within ten days or two weeks, or at the utmost three weeks. It is true that many cases of prolonged aural discharge will dry up in time with treatment, but these cases are not all cured and in a few it is necessary to resort to the mastoid operation for a complete recovery.

An ear which does not clear up after an acute otitis media is a focus of infection from which a general absorption may occur. A careful history, with the otoscopic findings, will usually clear up the diagnosis even though the drum membrane may be healed. Patients with good hearing whose ears continue to discharge despite conscientious and persistent treatment over a reasonable length of time, will cause a diminution of hearing in the affected ear.

Newhart[9] calls to our attention, one class of cases, which he thinks have been overlooked, in which the simple mastoid operation is early indicated and that is, in those cases of mastoiditis arising during the course of scarlet fever or measles. The early operation here will prevent the probable need of a radical operation later.

A smear should be made of every case, so that the character of infection may be known. Many cases are of a mixed variety and while there is always danger of a contamination from the canal wall, yet we are usually able to find the prevailing organism in each individual instance. The pneumococcus and streptococcus infections of the middle ear are very prone to invade the mastoid cavity. Repeated examinations should be made in order that we may keep ourselves informed as to the prevailing organisms.

Another important observation is this: In cases where we have to resort to surgical interference, that we allow nature's forces time to wall off the infection by a leucocytic barrier. These patients do better in thus waiting. If an operation is undertaken too early, the initial infection in the naso-pharynx may not have quieted down and the middle ear may again become infected.

In the virulent types of acute otitis media, especially during convalescence, the inability of the patient to sleep at night is usually an indication of involvement of the deeper structures of the mastoid and in some cases a sign of an extra dural abscess.

The blood count aids us to a certain degree. Especially is it an indication of the patient's ability to resist the infection. The white cells may run up to sixteen or eighteen thousand. Any sudden increase informs us of an impending complication usually that of sinus thrombosis. The polys may go to 80 or 85 per cent and in some cases as high as 90. In complicated cases of sudden dropping in the poly count usually is interpreted as meaning a lower resistance. As a rule the blood cultures are only necessary in complicated cases.

In the course of an acute otitis media where symptoms of labyrinthitis appear, such as vertigo, spontaneous nystagmus and sudden deafness, and an immediate operation is called for. Again at any sign of beginning meningitis such as intense headache, increasing irritability with positive findings in the spinal fluid, a thorough operation should be performed.

The x-ray is a valuable adjunct to the findings, especially so in the late cases where the cells are broken down. During the course of an acute otitis media, where there is any suspicion of involvement of the mastoid, a series of radiograms should be taken every four or five days to reveal the progress of the infection. The resulting pictures not only inform the attending physician of the character of infection and the destruction of

the cells, but it also is a means whereby, the intelligent patient can be shown his real condition.

Not only is it well for this subject to be brought to the attention of otologists and the general men who really see these cases early, but it should be brought home to the minds of the laity, the importance of early attention to these trivial infections that occur in the ear, so that we may prevent serious complications, preserve the hearing as well as prevent these cases from becoming chronic.

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Discussion

Dr. F. L. Wahrer, Marshalltown—I wish to compliment the doctor on his very excellent paper concerning the classical indications for opening the mastoid. I cannot help but feel, however that we are paying too much attention to the operative cure of mastoiditis, and not enough to the prevention. I believe that if more care and attention was given to the treatment of acute otorrhea, and more effort directed to the exciting causes in the nose and throat, the number of mastoid operations would be greatly reduced. Practically every case of acute otitis media purulent is secondary to infection in the nose and throat. It is this infection which must be cleared up if we are to deal successfully with the existing ear condition. The details of this procedure were presented by my partner Dr. Wolfe before the State Medical Society at the last meeting at Ottumwa and before the Academy of Ophthalmology and Oto-Laryngology at Washington, D. C., last October. It is essential that drainage shall be established where pus is present, but this drainage can be secured in a large majority of cases without mastoid surgery. I feel that practically every case of acute purulent otitis media is also a mastoiditis in some degree. It is simply a matter of judgment as to when it reaches the operative stage. We have many cases which present signs of mastoid involvement, viz.; high temperature, leucocytosis, swelling, redness and tenderness over the mastoid region and in many instances the x-ray shows cloudiness of the mastoid cells. However, if treatment is instituted early, and the nose and throat infection checked, these so-called indications for mastoidectomy subside in from twenty-four to seventy-two hours in practically every case. Such men as Emerson and Kerrison are laying special stress on the eradication of foci infection in the nose and throat, in all forms of ear conditions. I have heard the objection raised that valuable time was lost by instituting treatment when clinical evidence of mastoiditis was present. If the case is under careful observation this danger is slight. On the other hand if the treatment is successful and we find it to be so, many of the dangerous complications, particularly sinus thrombosis so often co-incident with mastoidectomy, can be avoided, as well as much suffering and loss of time. Also, in dealing with an acute purulent otitis media, we must look further than local ear conditions. Not only must the nose and throat be taken care of but the general condition as well. A large majority of these cases, especially in children, have varying degrees of malnutrition with lowered resistance. This condition must receive the same careful attention given to the ear itself. I wish to emphasize that to successfully treat these conditions, we must remember, that we are physicians, not just aurists.

Dr. Edwin Cobb, Marshalltown—I wish to thank Dr. Dean and Dr. Wahrer for their remarks on this subject. The main point that I wish to emphasize in the treatment of the acute otitis media cases is that after we have been very conservative in the treatment and if there is no indication that they are improving over a given length of time, then I feel that the sooner posterior drains are established, the better it would be for the patient in the end. We must always remember that we are assuming a great responsibility in the management of these cases.

ACUTE ENDOCARDITIS*

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In the classification of the different forms of heart disease two main distinctions should be made, namely, acute diseases of the heart, such as endocarditis and pericarditis, and the chronic or organic lesion. The former is always associated with the acute infection of the heart, while the latter represents the group of cases with valvular lesions, associated with degenerative diseases of the myocardium. In the discussion of the latter we will, of course, naturally have to exclude such degenerative changes of later life as arterio sclerosis and angina pectoris. During the last quarter of a century, remarkable work has been done through the entire country in the way of eradicating acute infectious diseases, some of which were common. For instance, typhoid fever is almost unknown of, at least through this part of the country. The death rate from tuberculosis is about one-half of what it was twenty-five years ago, but during this period the mortality from heart diseases has increased to an alarming extent. It is therefore time that a sound

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of warning is made, that something be done to stimulate more and better research work, which will enable us to better protect the hearts of children and young adults.

Libman has classified acute endocarditis as follows: rheumatic, syphilitic, acute bacterial, sub-acute bacterial, and undeterminate. Rheumatism holds first place and causes more heart valve destruction than all other forms combined. According to St. Lawerence, between 80 and 90 per cent of all cases of heart trouble in children and young adults are closely associated with rheumatic fever. Holt reports one hundred seventeen cases of endocarditis of which 90 per cent gave a history of rheumatism. Poynton reports one hundred seventy-two cases of rheumatism, of which 66 per cent had organic heart disease, 22 per cent died, and 38 per cent became complete invalids. A few years ago a survey was made of some of the large cities of the east in regard to the health of industrial laborers. It was found that rheumatism disables more than all other diseases combined, the average being 164.4 out of one hundred thousand population. While no specific bacteria has ever been isolated, we feel quite sure that it is an infectious disease, and a contagious one, and I believe that it should be handled as such. We know that it rapidly attacks heart valves, and that commonly more than one person is infected in the same house. St. Lawerence studied one hundred families, all of which had children, the entire number being six hundred twenty-six individuals. In fifty of these families two or more persons were found to have some form of rheumatism or endocarditis; in thirty-three families, two were found; in thirteen families, three were found; in two families, four were found; and in one family, five. Organic heart affection was found in two or more members of 29 per cent of the families in which some form of rheumatism was discovered. A very interesting feature existing in this group of families was that a limited number of children, who did not have rheumatism, did have some form of heart trouble. These children were always members of a family where rheumatism had existed. St. Lawerence thinks that these cases were rheumatic hearts and had been transmitted through intimate family relations.

Poynton and Payne, have probably done as much work in the research line in rheumatism as anyone. They have isolated a diplococcus, which, when injected into a rabbit give symptoms similar to those of rheumatism. Rosenau isolated a streptococcus discovered by Poynton and Payne. Other investigators have found streptococci which gave symptoms found in rheumatic fever. Most prominent among them are Wassermann and Westfal. We have every reason to believe that a specific bacteria exists, and probably, it is one of the bacteria mentioned. From a clinical standpoint it has the picture of a septic infection, running its course of fever, arthritis, relapse, sweats, anemia, and leukocytosis. Osler says that rheumatism sometimes presents itself in an epidemic form.

The Syphilitic Form

Syphilitic endocarditis is common, especially in the younger and middle ages. It most always affects the aortic valve, may cause a localized process at the root of the aorta with involvement of the valve or dilatation of the ring.

The Bacterial Form

The cases of bacterial endocarditis which interest us most are the hemolytic-streptococcus, pneumococcus, staphylococcus, and goncoccus. Of these, the most discouraging but not very common, is caused by the streptococcus viridins, a disease commonly spoken of in medical literature. Many of our best clinicians, such as Osler and Libman, have made a uniform description of its clinical course. It is a fatal disease, and very few of its victims live two years from the time of the primary infection. I have had a little of this experience, and without going into detail or making complete reports of some of the cases I have had, I can state safely that it is one of the most discouraging diseases we have to treat. The infection is very violent, accompanied by fever, great prostration, hemorrhages in the kidneys, and embolisms in the internal organs.

In reviewing literature I find that Capps reports four hundred nineteen cases, of which twelve recovered, less than 3 per cent. Among one hundred cases seen at the Johns Hopkins' Clinic during a period of ten years, no one recovered. All of these cases ran a perfect clinical course and their blood cultures confirmed the diagnosis. The diagnosis of these cases is not always easy because the clinical picture very much resembles that of typhoid fever, septicemia, and miliary tuberculosis. Chills and sweats are common associates.

In a series of seven hundred ninety-eight cases in the Lewis Clinic, 8 per cent or in round numbers, sixty-three, had clubbing of the fingers, a point which is strongly emphasized by Dr. Cotton in his discussion. Dr. Theo. Janeway called our attention to this in 1914, and we have since then had many occasions to note this condition. Hemiplegia is often present. In a case reported by Drs. Roger and Rosacoix the first symptom was hemi-

plegia, which was followed by a severe heart condition in two weeks with cultures of streptococcus viridins in the blood. Dr. Roger points out that hemiplegia in young children is commonly caused by embolism arising from a diseased heart valve of the sub-acute form of infection, while it is very rarely found in rheumatic cases. Lampe believes that the disease has changed a trifle from its former clinical picture, but in the nineteen cases he describes, I see little difference in either the clinical picture or the outcome.

THE GONOCOCCUS FORM

Gonococcus endocarditis, I wish to mention, because it will occasionally occur. During my entire period of practice I have had one case. A young man, who developed endocarditis and pericarditis following an infection of gonorrhea, had a fatal ending. Lion and Levi Brule report a case where the gonococcus was cultivated from the vegative of the heart. Thayer reports three cases that he has seen in two years. He also states that arthritis may not be present, that the blood cultures may be negative, and that cardiac infection may involve both endo and myocardium, and occasionally the pericardium. Most cases are fatal.

We have here a brief outline of the acute infections of the heart. As I said before, very little research work has been done up to now. Some of this research work has been accomplished by Kinsella and Sherburne. They have found that there are two factors in the causation of streptococcus endocarditis, first, injury to the valve, and later, infection. The injury is usually represented by congenital valve heart disease or rheumatic heart disease. Their experiments performed on dogs proved the infection. By an intravenous injection of streptococcus a vegative endocarditis, identical with that from the human being, resulted. The animals lived about two weeks, and the post-mortem showed that they had typical glommerular nephritis, and while bacterial endocarditis was not present, large infarctions were common. In an animal which lived seventeen days peculiar thrombosi of the tuft were found with hyaline and hemorrhagic degeneration. We welcome more investigation. It brings us nearer to a more tangible form of prevention and subsequent cure of this disease.

According to the United States statistics the death rate from acute endocarditis is very small in comparison to the total number of deaths from all forms of heart trouble. During the year 1922 the combined death rate of acute endocarditis and pericarditis amounted to 7.2 per cent per 100,000 population. In this same year the death rate from organic heart disease was 148.4 per cent, or twenty times as great. This is a fair illustration showing that the heart will stand a great deal of abuse from infection until myocarditis exists. An acute infection upon an old valve has an entirely different effect from that upon a young heart. It is remarkable the reserve power and energy, and the amount of work the heart is capable of performing. In its seventy-two beats per minute, running day and night, it will, according to Williamson, perform work enough to equal that of raising 17,500 kilograms for a distance of one meter. In sixty years this amounts to 381,629,000 kilogram meters of work. An injury to such an organ must be quite extensive before it fails to perform its functions. Hare says that chronic valvular disease sooner or later becomes serious, especially when certain influences begin to strain upon the heart, and in no class of diseases is it so important to take account of the general in distinction from the special in local disease as in this organ.

We have in the United States today over two million crippled hearts, and in the neighborhood of 166,000 people died of heart trouble in the year 1922. This is in excess of any other disease, and greater than all forms of tuberculosis combined. In the registration area of the United States, which includes 85.3 per cent of the total population, 5,905 people died of acute endocarditis and myocarditis, 871 of pericarditis, 9,319 of angina pectoris, 138,400 of all other heart trouble combined. This makes a grand total of 154,485 deaths in 85.3 per cent of the population of the United States. We notice in the year 1900 only one hundred twenty-three deaths occurred per 100,000 population. Twenty-two years later this has increased to 165.5 per 100,000 population, including every form of heart trouble. During these years our mode of living had improved, we had better housing conditions, children were much better protected from exposure, and thousands of tonsils and adenoids, the reservoir from which most bacteria enter the body, were removed.

We are today reaping the deaths from those cases whose hearts were injured thirty or forty years ago. It is possible that in another score of years the mortality will be much reduced. What I am most interested in is, to prevent infection of the young hearts, for two reasons. First, to spare them an early death, and second, to keep them physically fit.

PROGNOSIS

All life insurance companies look unfavorably on any risk where there is some form of heart infection. Until a few years ago the Prudential

Life Insurance Co. refused to accept any risk with an impaired heart. For the last three years they have accepted a limited number at a substandard rating, but today they do not take any cases of valvular disease and hypertrophy until a lapse of at least two years from what seems to be the date of recovery from the acute illness. Neither do they consider such cases where there is a history of one attack of acute articular rheumatism, until a lapse of two years following recovery.

In the annual statement of the Metropolitan Life Insurance Co. of the death rate of 1923, it begins by making this statement: "The year 1923 was distinguished as one of the best health years in the United States and Canada." This report includes the health record of approximately 15,000,000 industrial policyholders of this insurance company. The death rate of this cross section of people in 1923 was 890 per 100,000 people. Of this number 110.2 per cent died of tuberculosis, all forms; it goes on to show that deaths from heart disease are still on the increase, and that 128.5 per cent per 100,000 died in the year 1923, which means that the death rate from heart trouble is still on the upward swing.

The New York Life probably has the most valuable statistics on the effect of valvular disease on longevity. At the meeting of the Association of Life Insurance Medical Directors of America, held in 1922, Dr. Rogers, chief medical director of the New York Life, presented a paper on "Impaired Lives" in which he gives the following data:

History of Inflammatory Rheumatism

	Number of cases	M. A. Ratio
One attack within two years	1276	160%
One attack within three to five years	766	163%
One attack more than five years ago	1667	145%
Two or more attacks within two years	1174	149%

It is understood that the cases with valvular disease are included in the preceding table. Combining the data for the four groups in the table by ages you will note that the mortality computed by the Medico-Actuarial Investigation method was higher at the younger than at the older ages, as follows:

Combined by Ages

Age	M. A. Ratio
15-39	163%
40 and over	142%

The mortality shown in the first table for two or more attacks within two years is decidedly better than for one attack within two years. The apparently more favorable mortality is without doubt due to a much more rigid selection of this class of cases. It is difficult to think that it could possibly be better. Dr. Rogers also gives a table for rheumatism and mitral regurgitation.

Rheumatism and Mitral Regurgitation

	Number of cases	M. A. Ratio
One attack	1426	263%
Two or more attacks	612	350%

Mitral Regurgitation With Moderate Hypertrophy With History of Inflammatory Rheumatism

	Number of cases	M. A. Ratio
One attack	346	343%
Two or more attacks	154	396%

The hazard involved in mitral regurgitation with a history of articular rheumatism is much greater than the sum of the separate ratings. The result of hypertrophy of moderate degree is well illustrated here, the mortality being 343 per cent for one attack of rheumatism with mitral regurgitation and moderate hypertrophy as against 263 per cent where there is little or no hypertrophy.

Public Health Problem

There is no question today but that rheumatism, chorea, and heart infection are problems of interest to everybody the same as other infectious diseases. If suitable information was brought to the attention of health officers, if the public was better educated in prevention, if it was brought to the attention of parents that infected tonsils and adenoids must be removed, that teeth must be kept in a healthy condition, in other words, that children must have clean, healthy mouths, thousands of hearts could be saved.

Pioneer work has been done in New York City by the Burke Relief Foundation, which, through the Sturgis Relief Fund, has taken steps to assist in the foundation of a National Cardia Association. In its convalescent homes over three hundred beds are devoted to patients with cardiac infection. During the last nine years they have treated thousands of patients by a specialized method of recuperation, and have set up a vocational guidance for sufferers from heart disease. This institution includes in its regime rest and moderate exercise, a continuous school on well regulated recreation, occupational therapy, and usually some mental and nerve re-adjustment.

Treatment

The great treatment is prevention. Not alone is it necessary to give our attention to the patient,

but to prevent others being infected, is just as important. In the fight against tuberculosis, which in the last twenty-five years has dropped from a mortality of two hundred per 100,000 to 110 per 100,000, we made a great many laws. For example; the abolishing of the public drinking cup, and the spitting nuisance. In other words, we tried to prevent infected people from spreading the disease. We know the green streptococcus is commonly found in the mouths of individuals, and we have a right to ask that the public be instructed that the secretions from the mouth of an individual infected with endocarditis is infectious to those coming in contact with it.

PREVENTION

Some of its main points:

1. Treat rheumatism as an infectious and contagious disease.
2. Better prophylaxis of the mouth, especially of the teeth and tonsils.
3. Searching for, and obliterating all forms of focal infection.
4. Most heart disease is caused by rheumatism.
5. Chorea and St. Vitus dance are rheumatism of a nerve center and are commonly associated with heart involvement.
6. Growing pains and frequent sore throat are usually symptoms of rheumatism.
7. Enlarged tonsils and adenoids must be removed.
8. The heart is most frequently damaged during childhood and often disabled, in later life.
9. The nervous child should be carefully examined for heart trouble, and if such is found, should receive special school-work with graded rest periods.
10. The greatest harm is done by neglectful and ignorant physicians failing to recognize and properly care for the disease in its initial stage.

SUMMARIZING

Endocarditis may be caused by any of the many different forms of bacteria, of which, rheumatism is the most common. The heart will withstand the acute infection, but the re-infections, especially the organic heart diseases, are very grave. We must devote greater attention to the prevention, and special care for the acute infections when they occur. It must not be forgotten that in the neighborhood of 2,000,000 persons in the United States today are suffering with crippled hearts, and that more people die in this country of heart trouble than from all forms of tuberculosis combined. We, therefore need a greater and a better public education for the parent, and the child to bring home to them the importance of rheumatism, chorea, and growing pains, what they do to the heart, and what they do in later life.

Discussion

Dr. Walter L. Bierring, Des Moines—In listening to this interesting discussion on the subject of acute endocarditis, it seemed to me that the main point the essayist was trying to emphasize was, in one way, the prevention of heart disease, and in the other the proper care of those individuals who were already afflicted with some form of heart lesion. We might differ somewhat from Dr. Meis' classification of endocarditis. There seems to be a tendency to group together the various forms of acute endocarditis, and place in another group those cases which subsequently develop and are not strictly acute forms of endocarditis, but have been properly classified as either subacute bacterial, chronic infectious, or chronic endocarditis. I feel that the only way to prevent acute endocarditis is to consider two main infectious causes, acute rheumatism and lues. The latter we may not be able to control, but the former certainly can be better controlled if we recognize the many milder infections that lead up to what is usually known as acute rheumatic fever. Once a heart has become damaged it is constantly in danger of becoming reinfected, particularly during the younger years. Therefore every person who is afflicted with a chronic valvular lesion should be specially guarded against any subsequent acute infection, because it is upon the damaged valve that these subacute or marked chronic infections gain their foothold. Up to the present time we have very little that exerts a real curative influence in these cases. We have occasionally known isolated instances of so-called cure. Certainly marked remissions are possible and a few have been experienced here in our service. There is much said for mercurochrome and cacodylate of soda, but when once this condition is established it runs a fatal course. There is widespread belief, as the essayist has emphasized, that the study of heart disease through the formation of so-called heart clinics and associations for the study of heart disease throughout the country is going to be of great benefit in the future, because it is in the more intimate study of the various phases of heart disease that we will be able to do much to ameliorate these conditions, as well as to prevent further infection and increased damage of a previous valvular affection.

Dr. Merrill M. Myers, Des Moines—The paper is indeed an excellent one, and I feel that the title might well have been "The Prevention of Heart Disease", as Dr. Bierring has already suggested. No question which confronts physicians in this particular line of medicine is of more importance than the prevention of diseases of the heart. Within recent times the classification of heart diseases has been changed from that which formerly prevailed. In the past we were content to say that the patient had a "bad heart" or "hypertrophy" or "mitral insuffi-

ciency" or a "myocarditis", leaving the diagnosis at that point. But recently an entirely different classification of cardiac diagnosis has been devised, and it has been widely accepted by physicians and cardiac clinics. The present classification used by the New York Heart Association and the associations located in Philadelphia, Boston, Chicago and Indianapolis, is as follows: First, congenital heart disease; second, rheumatic heart disease; third, syphilitic heart disease; fourth, diphtheritic heart disease; fifth, certain other rare forms due to infections such as those types which result from tuberculosis or gonorrhea, pneumonia, influenza, or streptococcic infection. Then the arteriosclerotic type, the hypertensive type, the thyroid type, and the nervous type. There is another rare group wherein we classify the fatty heart, the "beer" heart, the "athlete's" heart, the traumatic heart, and the heart condition developing in the presence of tumors. We should be thinking in those terms and not in terms of "mitral insufficiency" or "myocarditis" or other ambiguous expressions. When we do begin to think in those terms we will be able to make more accurate diagnoses and advance the modern movement of prevention of heart disease. It is my belief that the importance of growing pains has not been impressed upon physicians and lay people deeply enough. Over and over again we see children who come with advanced types of rheumatic heart disease in whom we can find no etiological factor except growing pains. We must emphasize to the parents the importance of this factor—it is up to us, for we are responsible.

Dr. Frank M. Fuller, Keokuk—My reason for entering into this discussion is because I think that in these meetings we always get a point a little more clearly then on the day it appears in plain type. And I wish to underscore some things said in the paper and some in the discussion. Dr. Myers has referred to an extensive classification of heart diseases. If we will keep our minds on the fact Dr. Bierring has alluded to, that we are chiefly looking for rheumatic conditions or syphilitic conditions, then merely the knowledge that these other factors may enter into the etiology will keep us alert to catch the occasional case due to causes other than rheumatism or lues. It is a good deal of a presumption for me to say what I am going to say, but I enter a protest against a statement made by that eminent man in pediatrics, Helmholz, who in an article published in the Journal of the A. M. A., referred to the tendency, and in fact to the actual history, of children outgrowing these heart lesions, and you understand what he means. We do see these cases, and yet since the paper was published I have heard three men state that heart lesions in children are not necessarily dangerous and do not need to be taken so seriously. I believe, as Dr. Bierring has said, that once a heart is infected it is a subject of subsequent danger from every possible infection. Another point I want to emphasize is that we should think of the tonsils and teeth and keep the hygiene of the mouth right, but not end our observation there. In one of the most active cases of heart trouble I have seen I could not find the least cause for the condition so far as the ordinary infections were concerned, but on having the child stripped found ingrowing toe-nails with abscess, correction of which relieved the cardiac condition. I mention the case merely to emphasize the fact that we may get infection from sources other than the oral or the respiratory tract. Another point referred to was familial infection. We should keep in mind this possibility and the regularity with which we find these damaged hearts occurring in families, suggesting the possible infectious character of the disease. I have in mind the case of a man who died of chronic endocarditis of so-called rheumatic origin, and he has three children who have infected hearts and evidence of acute rheumatic arthritis. There is just one other point I want to emphasize, and that is the necessity for absolute control of these cases of children. I am speaking of children because it is during the period of childhood that we can most effectively handle these cases. If you cannot gain control of the child with heart trouble and absolutely put him to bed, it is almost useless to attempt treatment. If you have the patient in bed and almost entirely at rest you can do something to prevent the future effects of this condition.

Dr. Daniel J. Glomset, Des Moines—I believe that heart disease due to rheumatism is the only type in which we have a chance to obtain much improvement in the future. Rheumatism is apparently not caused by a streptococcus or by any other known organism. It is a specific disease producing typical lesions in the heart and other organs. It is a disease which acts, in many respects, very much like syphilis. Against this disease we have one clinical specific, the salicylates, and I do not believe we have used these salicylates sufficiently long or persistently to determine whether or not they are of any value in preventing heart complications. I believe that the salicylates should be given not only while the individual has rheumatic fever, but for years after the acute symptoms have subsided, if we are to prevent these heart complications. Just as in syphilis treatment is continued long after the acute symptoms are a thing of the past, so we should in rheumatism continue the salicylates for years before credence should be taken of the dictum that salicylates will not prevent the heart complications of rheumatic fever.

THE HEALING ART ACT OF 1925 in PENNSYLVANIA

We are informed that the above named act provides for the abolishing the present licensing board, consisting of the heads of the Departments of Public Instruction, Public Health and Public Welfare, together with two members each from the regular, the homeopathic, the eclectic and osteopathic societies respectively. The bill also fixes the qualifications of those applying for licenses.

DIPHTHERIA*

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The subject assigned me for today's paper, typifies more clearly the wonderful progress made by modern medicine, in the elimination and treatment of disease, than any other with possibly one exception. The two great scourges of the past centuries, small-pox and diphtheria, through the development of laboratory methods and modern science, have become so innocuous that today they are but a nightmare of the past. The older members of the profession still retain a vivid memory of the hopelessness with which they undertook to fight the ravages of these diseases thirty to forty years ago.

In no other disease has modern science and the laboratory provided the physician with such accurate means of diagnosis and certain means of cure; that such a large number of deaths still occur from this disease is far from complimentary to the skill and intelligence of the medical profession. With such efficient means for its prevention and cure, it would seem hardly too much to expect that diphtheria in future generations should be classed with the rarities.

It is my purpose in the limits of this paper to give a short review of the conditions which has changed a fatal scourge, wiping out 50 per cent of its victims; until today but an occasional one answers its summons. The disease has been known since the second century, continuing its ravages unchecked until the specific organism was discovered by Klebs and Loffler in 1883 and 1884, and later investigations by Park, Williams and Theobold Smith, demonstrated that these organisms grown on culture media produced a toxin. Behring and Kitasato first discovered diphtheria antitoxin in 1890, but it was not until 1895 that Park and Williams produced a more powerful toxin than had previously been obtained; this culture is used throughout the world for producing antitoxin.

A little personal experience may not be out of place in illustrating the early methods and results of the introduction of diphtheria antitoxin in this country. In 1895 while an interne at Harper Hospital, Detroit, P. D. & Co., supplied the hospital with samples to determine its efficiency in treatment. Soon after locating in Tama county in 1896 it was my fortune to run into an epidemic of the old-fashioned diphtheria; I remember with what fear and trembling the parents watched me administer the first doses to their children, and how it was necessary to hold the children by force in order to inject the 20 to 40 c.c. of the 1000 unit dose. The results were such however, that out of sixty-four cases, treated at that time I had but four deaths checked up against me. The remarkable results obtained by the early users of the serum were such that in a very few years it was recognized as the sheet anchor in the treatment of this fatal scourge.

Diphtheria is recognized today as an acute contagious disease of bacillary origin, of which the Klebs and Loffler bacilli is the predominating type. It is characterized by an inflammation of mild to severe grade, with the formation of a false membrane.

For convenience we may divide it into several clinical types: (a) faucial, (b) nasal, (c) laryngeal and the rarer forms (d) which may be either cutaneous, ocular, oral or found on wound surfaces. However, these various types may exist coincidently, or one type may at any time merge into another type. The faucial type is the most common as well as the most characteristic. The tonsils and mucous membrane of the pharynx are the sites usually selected by the bacilli.

The disease begins as an inflammation of a mild type, which can be diagnosed only by culture. The further growth of the germs develop a pseudo-membrane composed of necrotic tissue. Bacteria and fibrinous exudate occurring in patches, having smooth rounded edges with a laid on appearance, greyish white to dirty brown in color, bleeding freely, when removed, with a zone of inflammation extending from 1/8 to 1/4 inch surrounding the membrane. As the disease progresses, the membrane spreads to the surrounding mucous membrane with a corresponding increase in the inflammation and edema.

In the malignant form the progress may be so rapid that in from forty-eight to seventy-two hours the post-nasal space and larynx may be filled with the membrane causing difficulty in breathing, or sudden death from edema of the glottis, or, we may have overwhelming toxemia with paralysis of brain centers or heart. In the milder types in a few days the inflammation subsides, the membrane begins to peel around the edges and is expectorated.

In the nasal type the picture is different, instead of days it may be weeks before it has run its course, often times it is looked upon as a simple cold with a serosanguinous discharge, slight or profuse, causing an excoriation of the nostrils and upper lip, and it is only when an extension to the throat or an examination of the nose showing membrane on the septum or turbinates that a diagnosis is made.

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Laryngeal diphtheria is the most serious type, not only because of the danger of asphyxiation and pneumonia, but also because of difficulty in diagnosis, as history and physical signs are all that we can make our diagnosis on. A croupy cough, aphonia, dyspnoea, supra-sternal and infra-sternal, retraction, cyanosis, restlessness and struggling for air are the prominent symptoms.

Fortunately this type of case is rare at the present time. The other types of diphtheria are so rare that I will not take up your time in discussing them. In the differential diagnosis streptococcic sore throat is the most difficult to differentiate. A higher temperature, more severe constitutional symptoms, more intense inflammation, white membrane with feathery edge, together with microscopic examination of membrane will tell the difference. In Vincent's angina the ulcerated character of the lesion together with the smear, showing the spirochete and fusiform bacilli, will guide us aright.

Spasmodic croup may similate laryngeal diphtheria, its sudden appearance and sudden disappearance will differentiate it.

In peritonsillar abscess the pain is more severe, the temperature is higher, the inflammation more marked. The complications of diphtheria aside from the nerve injuries and cardiac paralysis are unimportant. The nerve paralyses generally appear the second or third week, and last from one to three months, are very seldom permanent, and chiefly involves the upper respiratory tract or tongue.

Post-diphtheric paralysis of the heart is the most serious. It appears during the period of convalescence when both the family and physician are unprepared for the sudden change. Death may be instantaneous. If the patient lives a week his chances for recovery are good. Probably 75 per cent of patients with this complication die.

The treatment of diphtheria may be divided into two phases: First, that of prevention; second, that of cure.

In no period of the history of medicine has as rapid advances been made in the prevention of disease as during the past few years. The various agencies for the education of the people in better hygienic and social conditions, the laboratory, the physician, all have had a hand in bringing to fruition a period we can look forward to when contagious disease will be numbered in the archives as ancient history.

A brief summary of the methods used in the eradication of diphtheria may not be out of place at this time. Following the discovery of Klebs and Loffler bacillus and the introduction of antitoxin, the exposed individual was temporarily immunized by the introduction of immunizing doses of antitoxin. This was found to render the person immune for a period of from one month to six weeks, carrying him over the period of immediate exposure.

Later the Schick test was brought out, determining who was susceptible to the invasions of the disease, and toxic-antitoxin administered to those found possessing positive reaction. Today by the administration of toxic antitoxin in small doses once a week for three weeks all children may be rendered permanently immune from the disease.

A brief resume of the progress made in the prevention of and elimination of diphtheria in the State Juvenile Home will serve to, in a measure, verify the above statement. Soon after the establishment of the home at Toledo, diphtheria became a permanent resident of the home; due to the continued entrance of children from homes where every form of contagious disease was present, we would no sooner get rid of one epidemic before another sprang up. Our method at first was the administration of immunizing doses of 1000 units to all exposed to the contagion. However, in six weeks or two months another epidemic would start up and we would have the immunizing to do over again. We finally decided to have the children Schicked and those showing positive reaction given the toxic antitoxin.

At that time, of 150 Schicked 43 showed positive reaction, these were given the toxic antitoxin. We continued this plan for nearly two years as the new children came to the home they would be Schicked, and those showing positive reaction were given the permanent immunizing doses of toxic antitoxin. This plan met with better success than the former, but still there would be an occasional cropping out of new cases. Those developing the disease being the new entrants who had not completed their toxic antitoxin injections, or those on whom the Schick test had been negative and later became positive through the wearing out of the antibodies in the system. These cases, however, developed a much milder form of the disease. It was decided to administer the permanent toxic antitoxin to all children entering the home. Since which time a period of about nine months, we have had no new cases. The specific treatment of diphtheria is with antitoxin. The amount to be given is determined by the type and severity, not the age of the patient, as it is impossible to determine the amount of toxin in the individual to be neutralized. It is preferable to give an overdose rather

than too little, as excess of antitoxin in the system does no harm.

The faucial and laryngeal types require the larger doses. At the Herman Kiefer children's hospital in Detroit (one of the largest for children in the U. S.) the initial dose is from 20,000 to 40,000 units. It may be given in three different ways, either intravenously, intermuscular or subcutaneous. In the laryngeal type where immediate action is required intravenous is the best. The neutralization of the toxins at the earliest possible moment is essential, because one has no means of determining just how much toxic damage will produce fatal cardiac paralysis or death from toxemia. The annoying urticaria which occasionally follows the treatment can be temporarily relieved by the injection of adrenalin.

The plan of treatment followed out in the Juvenile Home is: first, on the discovery of any sore throat the child is immediately isolated and carefully watched. If the case looks at all suspicious an immediate dose of 10,000 units is administered below the shoulder blade, or fleshy part of buttock, a culture is immediately taken and forwarded to laboratory for diagnosis, the child's bowels are cleaned out with either oil or calomel and a mild antiseptic throat spray or gargle given; if no improvement in twenty-four hours another 10,000 units are given. I have given to one patient as high as 80,000 units with no untoward results. The patient is kept in bed until all symptoms have disappeared, and cautioned about rising suddenly or jumping out of bed. The only case of death from diphtheria in our institution was caused by the child suddenly springing up in bed during the convalescent period, causing paralysis of the heart muscles from which he died before I could go from my office to the institution.

A liquid diet is given during the acute stages of the disease. Complications are treated as they arise. Occasionally we have a marked urticaria following administration of the antitoxin, a small injection of adrenalin, 3 or 4 drops, and local applications are about all that is necessary. The child is not released from quarantine until two negative cultures have been received. One interesting feature connected with the complication of scarlet fever with diphtheria, the administration of antitoxin affects favorably the scarlet fever. So that now when I have a case of scarlet fever with a severe septic throat I have no hesitancy in giving the antitoxin. Complications following the disease have been few and unimportant.

There have been no permanent paralysis or weakened heart condition except the one mentioned in this paper. In conclusion may I state that: first, diphtheria is a disease that can be nearly or completely eradicated. (a) By giving toxic antitoxin in 3 doses one week apart to children of the pre-school age. (b) Schick test with toxic antitoxin to those showing positive reaction to the older children. (c) Never give less than 10,000 units for the cure, unless it is a very mild case of the nasal type. (d) Cases that show bacilli three weeks following convalescence or carriers. Test for virulence; as many of these cases have bacilli, morphologilly the same in type, but are not contagious. A saturated solution of gentian violet painted on throat, or chlorozene solution 1 to 1000, or mercurocrome in solution may be tried as a spray or painted on.

NUMERICAL RELATIONS OF THE VARIOUS PROFESSIONS

The Illinois Medical Journal has gathered some interesting statistics in relation to increase and decrease in some of the professions in the period between 1910 and 1920. During the ten years the number of dentists has increased 40 per cent, trained nurses have increased 81 per cent; various healers (cults) 116 per cent increase. During the same period the number of physicians and surgeons in the United States have decreased about 8 per cent. It is said that there are 1,125 fewer doctors in 1920 than in 1910, notwithstanding the fact that osteopaths are recognized by the census bureau as physicians.

The decrease in the number of physicians is felt particularly in the rural communities. There is probably an increase in the number of physicians in the cities and larger towns.

A STATE MEDICAL LIBRARY

During the summer the medical books at the University of Minnesota were transferred to the new university library building. The medical library has been fused with the biology and dentistry libraries to form a department of about 50,000 volumes. "Minnesota Medicine" says that no provision has been made for the loan of these books to physicians throughout the state and that perhaps 50 per cent of the physicians are without the use of a first class library. Attention is called to the New York state medical library at Albany which has been maintained for years and to the medical branch of the Iowa state library, established three years ago, and to the circulating medical libraries of the Medical Society of the County of Kings in Brooklyn and that of the College of Physicians and Surgeons in Philadelphia. Minnesota maintains a library of about 90,000 volumes for the law profession and the editor believes it is time for the state to establish a state library for physicians.—Federation Bulletin.

The Journal of the Iowa State Medical Society

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BIRTH CONTROL

In 1798 Thomas Malthus published the first edition of "An Essay on the Principles of Population as it Effects the Future Improvement of Society, with Remarks on the Speculations of Mr. Goodwin M. Condorcet and other Writers."

In his treatise of 1803 he introduced the new element of preventive check. The views of Malthus brought forth a most vigorous discussion, largely unfavorable, and for more than a hundred years the Malthusian doctrine was the subject of ridicule by politicians, newspaper and magazine writers. Malthus believed that the time would come when population would increase beyond the ability of the world to supply food and would be the cause of misery, crime and wars. His first essay related to the rapid production of the unfit and the misery incident thereto, and was a social question. Later it became an economic question of food supply. Within the past few years the discussion has been revived, and economists are beginning to discover that with the rapid increase in population, the production of food will not be sufficient to feed the world's population in less than a hundred years, indeed, Professor East in his book on "Mankind at the Crossroads" claims that the margin of safety will be reached during the life time of the generation now born. This alleged fact is supported by a long argument with an abundance of figures showing the rate of increase of population and the possible increase in food production.

This is an economic problem in which the medical profession has no greater interest than people generally. There is, however, another problem in which the medical profession has a direct interest and responsibility, as sanitarians and health guides in relation to physical and mental health. Since the disappearance of plagues and since the adoption of measures to prevent the spread of infectious diseases, there has been a great reduction in the death rate of the unfit and care free, who formerly fell victims to epidemic diseases, and since the lessening of the almost constant wars, in which this class were so largely victims, there has no doubt been a large conservation of the lives of the class referred to. It may be admitted that these same measures have compensated in a degree to improve general conditions of people, but reproduction almost without limit and without control has increased undesirables to an alarming extent.

Dr. William A. Pusey in his presidential address at the recent session of the American Medical Association dwelt upon the problem of increase of population and birth control in a manner to show his real attitude, but to prevent a misconception stated, "I particularly desire that the mistaken impression should not go out that I mean to say that medicine now has any satisfactory program for birth control. It has not." This was a fortunate statement, for it safely guards against sensational controversy, but plainly indicates that there is a problem, but it is for the whole world and not for the medical profession alone. Malthus had the courage as an economist to present to the world an idea which he believed was true, but the outcome was deferred from the rapid development of industries, transportation and storage. There were deep thinkers who believed as Malthus did, and have been since.

It may be true that some great change in conditions, as in the industrial and transportation era, may alter the period of population saturation, and therefore the problem must be studied with great care, not by care-free, unthinking people, but by deep thinkers. That birth control is a present problem there can be no doubt and should be so considered, not some time in the future, but now. Our institutions are filled with defectives and criminals, there is untold misery and the burden of care and support of these defectives is enormous and constantly growing. Does any one know the remedy? It should be open to discussion. In some states there are statutes that subject one to criminal prosecution if advice and instruction is given that has for its purpose the control of births and such statutes should be repealed or amended; not to permit

abortions or in any manner to destroy the products of conception, for such measures may give license to methods of treatment far from the idea of birth control; this should be carefully guarded.

We have no program to offer, but sentimentalism should not interfere with a full discussion of a subject that will be vital in the near future. When the burden of support of defectives and criminals becomes too great, when the struggle for food leads to violence and wars, then it will be too late for the adoption of humane methods of control, but now a study of the problem from every point of view. Let us forget the riotous discussion that followed Malthus and his associates and take up the problem as it comes to us under the social and scientific methods of thought of today.

THE FULL TIME PROFESSOR IN MEDICAL COLLEGES

There is naturally differences of opinion as to the wisdom of full time professors in medical schools, particularly clinical teachers. The men who have contributed largely to the endowment of medical colleges are successful business men, men who have found that full time managers are essential to the business, and that all the men directing operations should devote all their energies to special things in order to reach the highest efficiency. It is quite natural, therefore, that they should apply the same principle to teaching in the schools and colleges to which they give money, for the very definite purpose of increasing teaching efficiency.

Those who oppose the full time professor, hold that the medical professor who is not in constant touch with private practice loses the sense of contact with patients that come up to the clinic, and that the student fails to obtain the advantages of the personal and individual contact which is so important to him in his future work.

It is also held that when the professor comes to his classes fresh from the consulting room, bedside or operating room, he brings with him a different atmosphere from that of the hospital or prepared patients.

Of course in the old days the professor depended on private practice largely for his income. No one would prefer the older method, which probably had some advantages. The teaching of medicine has greatly changed in recent years; it has become much more complicated; there are many factors in diagnosis not thought of then. It seems, therefore, that the method of teaching must conform to these changes. As it seems now the heads of departments must be full time teachers with time and energy to prepare for the class room work and the clinics, to arrange the work for his associates and assistants. We are quite of the opinion that many of the class rooms and clinical instructors should be part time, men largely engaged in private practice. The heads of departments would naturally be selected from those who had at one time served as subordinates and have reached the high place through a more or less successful private practice and thus have been saved from the dangers of the routine of the so-called bureaucratic inertia which so widely affects certain writers.

FUNCTIONS OF AN EXECUTIVE OFFICER

The New York State Journal of Medicine sets forth the duties of an executive officer of the New York State Medical Society, and inasmuch as the Iowa State Medical Society has a corresponding officer, and as there are many members who are not quite certain what he is for, or what his duties are, we are presenting the New York idea, a state larger in this work, with the assurance that it fairly represents our own views.

What may be the duties of an executive officer of the Medical Society of the State of New York is a fair question and we are ready and eager to receive any suggestions which may be helpful in making this office an effective one.

Our first impression is that he should represent the president or executive officers at the county societies, and help the county societies develop as medical factors and units of the State Society.

He should be familiar with every county society's problems and be prepared to offer from his executive experience advice and assistance in solving them.

He should be familiar with the plans and ambitions of all standing committees, and give them assistance in all matters which might be too difficult to handle individually, and to help them co-ordinate their work with the other committees of other county societies of the state.

In order to insure his greater usefulness to all committees he should not assume too much detail in the work of any committee, but should refer to its own members.

He should serve as the society's representative to keep it informed in all things medical transpiring in the state.

He or his office should at all times be available to advise those within the society who may have problems for solution, whether they be within or without the society, and to direct to the proper persons or committees, the medical profession or lay bodies who may have matters to be considered.

He should assist and cooperate with the editorial staff in increasing the value of the state journal, and

aid them in making it a medium of exchange between the county society and the State Society, and by publishing in its columns accounts of all medical activities or problems bearing upon medical practice that come within his sphere.

He should inform himself of the medical conditions in all sections of the state and should stimulate and support such measures as the State Society may adopt, or that the county society may advance for its own betterment, or the improvement of medical practice or public health within its own jurisdiction.

DECREASE IN RAILROAD MILEAGE

We are only doctors, but we are interested in railroad transportation. As an indication of the financial difficulties of railroads, we present some significant facts.

The following statement shows how the decrease in mileage owned from 1916 to 1922, was distributed among the eastern, southern and western lines:

	Mileage Owned		
	Dec. 31 1922	June 30 1916	Decrease
Eastern lines	59,912	61,243	1,331
Southern lines	50,553	51,621	1,068
Western lines	139,948	141,387	1,439
	250,413	254,251	3,838

Still another in the matter of taxes: In 1911 the taxes averaged $270 a day. In 1923 they were $909,356 a day, an increase of $639,145 a day.

In 1916 Class I railroads paid $157,113,372 in taxes. In 1923 taxes had increased to approximately $332,000,000 or by 111.4 per cent. In the present year they are approaching a million dollars a day.

February 17, 1925.

Dear Doctor Fairchild:

I wish to call your attention to decision number 3925 of the district court of Iowa in and for Worth county, January term, 1925.

Manly is located ten miles north of Mason City. During the month of December, thirteen cases of small-pox occurred in Manly, some of them among school children.

On January 1, 1925, the board of directors of the Independent School District of Manly enacted the following rule:

"All scholars, teachers and janitors are required to be vaccinated before they can attend school, said vaccination must not be over three years old. Any person who has had small-pox does not have to be vaccinated. Positive proof of vaccination or immunity from small-pox must be presented."

As a result of this order and other competent advice by local physicians, all the school children of Manly were vaccinated except one. This one child was denied admission to the schools on January 5, when school began.

A plea for a temporary injunction to restrain the school board from enforcing this order was heard by Judge Kepler of the district court. Judge Kepler heard the pleas of the anti-vaccinationists' lawyer and the facts as presented by members of the school board of the Independent District of Manly. After taking several days to consider the plea, Judge Kepler ruled, "Temporary injunction denied at the cost of the plaintiff."

Judge Kepler's decision in this matter is entirely in keeping with all state supreme court decisions in other states and the decision of the United States Supreme Court in a Texas case which was brought several years ago.

I am informed that this particular action has never been brought before the Supreme Court of Iowa. If this case is appealed it will be heard by the Supreme Court and a decision rendered which will have general application to the entire state.

This is a distinct victory and its importance cannot be over estimated. If this mode of procedure is found legally proper it certainly fulfills all the requirements of the best practice in preventive medicine and can be applied in many other communities.

Very respectfully,

Don M. Griswold,

State Epidemiologist and Assoc. Prof. Hygiene and Preventive Medicine.

POSSIBLE BAD EFFECTS FROM HEALTH EXAMINATIONS

The Atlantic Medical Journal draws attention to certain bad effects that may arise from health examinations. Dr. Frank Billings, who is one of the leading exponents of health examinations, has repeatedly called attention to the fact that special training is needed to make these examinations valuable, not that they should be placed in the hands of specialists, but rather in the hands of the family physician.

But the family physician is in duty bound to train himself for this work, particularly, to develop in county societies diagnostic clinics for this and other purposes. These clinics not only train men in diagnosis, but aids materially in stimulating an interest in health examinations by the public.

Another possible danger which has been mentioned is that the examiner may overlook some pathology and create a false sense of security by his assurance of good health. This will certainly occur at times because of the insidious onset of some diseases, but the applicant for examination, having previously believed himself to be healthy, will be no worse off. Few such situations will arise if we are thorough and painstaking in our work.

THE EPIDEMIOLOGY OF COLDS

The Journal of the American Medical Association presents an editorial on the "Epidemiology of Colds" December 13, 1924, that is entitled to careful reading and presents valuable information that is being much sought at the present time.

It is singular that until recently no systematic epidemiologic study has been made of the minor respiratory ailments known as common colds. In most parts of the temperate zone they are by far the most prevalent form of disease, and they are probably responsible for a larger loss of working time and efficiency than any other human disorder. It has not been known whether all types of cold are contagious, whether definite seasonal and geographic relations exist, or what the connection may be between colds and the more seriously regarded respiratory infections, such as influenza, tuberculosis and pneumonia. Bacteriology has thus far not made much advance in elucidating the problem of colds, and it is high time that other modes of attack were attempted. Jordan and his associates in 1920-1921 gathered data on the occurrence and nature of colds among more than 2,300 college students in three widely separated communities of Chicago, Galveston and Pasadena. The observations, while covering a relatively short period and a limited number of localities, brought out a number of interesting epidemiologic facts respecting yearly frequency per person, seasonal occurrence, and a rather surprising independence of climatic conditions.

A more comprehensive program was inaugurated by the United States Public Health Service in 1923, and a preliminary and progress report has just been published. The observations discussed were made with the continuous cooperation of about 13,000 persons in eleven different localities from Massachusetts to California, and include bi-weekly reports on the occurrence of colds in the individual reporting, together with a large number of pertinent details. The preliminary report covers the period from October, 1923, to June, 1924, and contains many suggestive data. The most noteworthy indication obtained by the analysis of this material is the remarkable synchronicity in the rise and fall of these respiratory affections in the various localities under observation. A high incident in the latter part of October was followed in all the localities (e. g., Boston, Baltimore, Chicago, New Orleans, San Francisco) by a decline, which continued until the latter part of December; then a sharp rise occurred, which in all the localities save one reached its peak in the first part of January; this was succeeded by a gradual decline in nearly all the localities until the end of the period. Another point of considerable interest bearing on the evolution of this and other collections of similar data is evidence that the conditions as reported by the individual are fairly accurate and can be depended on for statistical analysis. The morbidity rate was very high. The number of colds in one group believed to be representative during a five and one-half month period averaged about two per person.

CHIROPRACTIC DEFINITION

Dr. Rock Sleyster in his president's address before the Seventy-eighth Annual Session Wisconsin State Medical Society, has revealed the full definition as offered by the apostles of chiropractic at the New Jersey legislature.

The term chiropractic, when used in this act, shall be construed to mean and to be the name given to the study and application of a universal philosophy of biology, theology, theosophy, health, disease, death, the science of the cause of disease and art of permitting the restoration of the triune relationship between all attributes necessary to normal composite forms, to harmonious quantities and qualities by placing in juxtaposition the abnormal concrete positions of definite mechanical portions with each other by hand, thus correcting all subluxations of the articulations of the spinal column; for the purpose of permitting the recreation of all normal cyclic currents through nerves that were formerly not permitted to be transmitted, through impingement, but have now assumed their normal size and capacity for conduction as they emanate through intervertebral foramina—the expression of which there were formerly excessive or partically lacking—named disease.

Great care has been observed in making an exact presentation of this remarkable specimen of English composition, just what it means we do not know.

VOLUNTARY PARENTHOOD LEAGUE, INC.

Note to the Editor-in-Chief

The attached letter and statement of the pertinent facts concerning the still somewhat misunderstood question of the inherent right of free access to knowledge about how to control and regulate parenthood, has just been placed before every member of Congress. It is the only question involved in the Cummins-Vaile Bill now before the judiciary committees of both houses.

Will you, as an untrammeled and intelligent editor, give this statement your own fresh and candid consideration on its intrinsic merits?

You can then help mightily to lift this whole matter out of the mire of vulgar banality in which certain political-minded men still hold it, by writing an editorial in your powerful magazine that will help Congress to see the large and vital need of this corrective law, and to act at this session.

Edwin S. Potter,
Chairman of the Publicity Committee,
Voluntary Parenthood League.

December 22, 1924.

Non-controversial measures are announced as the chief business of this session. We respectfully submit that the Cummins-Vaile Bill is such, and that it should be promptly enacted. (S. 2290-H. R. 6542.)

It is the so-called "birth control" bill, which is rather a misnomer, since the Bill takes no stand on the question of birth control, either pro or con. That matter is left to individual decision, as it should be. All the Bill aims to do is to remove the statutes which make it a penalized indecency to find out what birth control information is.

Will you not give this non-controversial, non-party all party measure your fresh consideration? The pertinent facts regarding it are given on the appended sheet. We submit that these facts warrant our request that you urge the judiciary committee to report the bill favorably and speedily, for the sake of decency, justice and common-sense, and for the protection of the public against the underground stream of harm that is flowing in ever increasing volume, and which stays underground and harmful, just because of the existence of the mistaken old statutes that were carelessly passed in 1873.

Let the information come out in the open, where the medical men can take care of it adequately.

Democrats and republicans—and progressives too—can applaud the wish with which the president closed his annual address, that the American flag may be "the symbol of a government that intends no oppression at home." These old Comstock laws are oppression, and moreover they were not intended to forbid scientific birth control knowledge to normal people. The record of 1873 plainly shows that Congress was aiming to suppress obscenity, not science, yet in haste both were penalized.

Can you be counted upon to help remove this oppression at this session? Your reply will be greatly appreciated.

On behalf of the Voluntary Parenthood League,
Yours sincerely,
(Signed) Mary Ware Dennett,
Director.

Controversy about the utilization of birth control knowledge can continue as long as any one wishes, but it should be a discussion apart from the question of laws. There can hardly be controversy as to the principle that access to knowledge should be lawful. To prohibit knowledge is clearly outside the proper realm of law. It is especially so in this instance, for the utilization of birth control knowledge is perfectly lawful. To control parenthood is not a criminal act under the law, but finding out how to control it, is.

These laws have made the United States a laughing stock among nations. This is the only country in the world to treat a phase of science as criminal indecency.

As a matter of fact there is relatively little controversy by the thinking American public, as to the desirability of using this knowledge. What educated men and women think on this matter is obvious from their lives. The large majority of "our best people", including Congress, have acquired enough of this illegal knowledge, to place the average birth rate of the country at a figure which plainly indicates the widespread achievement of controlled parenthood. (The U. S. rate is 22.8 per 1000. As uncontrolled rate would run upwards of 50 per 1000.)

The people make no effort to keep these old laws, and the government makes no effort to enforce them. If they were enforced, it would put millions of our best citizens in jail.

It is bad enough for the public morale to keep admittedly unenforceable laws on the books, but, in this case, it is also bad for the public health. The retention of these old laws is working positive disaster because quantities of harmful, worthless and rubbishy contraceptives are now being circulated. No laws on earth can stop the traffic in contraceptives. The question facing Congress is how to render the traffic lawful and undetrimental. The primary remedial step to be taken is to pass the Cummins-Vaile Bill, so that the medical profession will be free to warn the public authoritatively as to methods which are bad, and to properly instruct those who want information, as to what methods are scientific.

Doctors are demanding this freedom as never before. They must have it in order to serve the public adequately. Dr. William A. Pusey, President of the American Medical Association approves the aim of the bill. Dr. Lawrence Litchfield, former President of the Pennsylvania State Medical Society, was one of the chief speakers at the hearings on the bill last spring. A recent conference of lawyers and doctors in New York City solidly urged the main point of this bill, as imperative for the freedom of the medical profession, so that it may instruct the public lawfully and decently in this matter, instead of resorting to the undignified and inefficient process of "medical boot-legging."

There have been two hearings on the bill. Practically the only opposition was from Roman Catholics. They make only one point, and that one is not germane to the bill. They do not believe in scientific birth control and do not want to utilize birth control information. But neither does the bill stand for belief in birth control, nor does it provide any means for circulating the information, nor does it make it compulsory upon any one to have or use the information. The Catholic point of view therefore has no bearing on the measure. As the bill merely establishes freedom of access to knowledge, it contains nothing to which a good Catholic could not subscribe, as a matter of principle, the same principle that makes them keen to protect their own rights to teach what they believe. It is in recognition of this principle that one of the Catholic senators stands for the bill.

GIFTS TO THE UNIVERSITY OF ROCHESTER

Gifts from George Eastman of $2,500,000 and of $1,000,000 from the General Education Board of the Rockefeller Institute are announced as part of a campaign for endowment of the University of Rochester. Alumni have nearly reached the sum of $1,000,000 required.

Who doubts the recognition of medical science by the public?

UNITED STATES CIVIL SERVICE COMMISSION

The Editor:

The Commission believes that the appended announcement will interest many of your readers who may be desirous of taking an examination for the federal civil service. Any publicity you may give this item of news will be appreciated.

U. S. Civil Service Commission.

United States Civil Service Examination

The United States Civil Service Commission announces the following open competitive examination:

Graduate Nurse
Graduate Nurse (Visiting Duty)

Applications for graduate nurse and graduate nurse (visiting duty) will be rated as received until June 30, 1925. The examinations are to fill vacancies in the United States Veterans' Bureau and in the Indian and Public Health Services, at entrance salaries ranging from $1,020 to $1,680 a year.

Applicants for the position of graduate nurse must have been graduated from a recognized school of nursing requiring a residence of at least two years in a hospital having a daily average of thirty patients or more, giving a thorough practical and theoretical training, and must show evidence of state registration.

Applicants for the position of graduate nurse (visiting duty) must meet the requirements for graduate nurse, and in addition must have had at least four months' post-graduate training in public health or visiting nursing at a school of recognized standing, or in lieu of such training, one year's experience under supervision in public health or visiting nursing.

Competitors will not be required to report for examination at any place, but will be rated on their education, training, and experience.

Dietitian

Applications for dietitian will be rated as received until June 30, 1925. The examination is to fill vacancies in the Veterans' Bureau and the Public Health Service, at entrance salaries ranging from $1,020 to $1,680 a year.

The duties of the position are to purchase the food supplies for all messes operated in the hospital; to plan all menus, both for patients on ordinary diets and diets with reference to special diseases; and to supervise the preparation and serving of all dietaries in the hospital, both to patients and personnel.

Competitors will not be required to report for examination at any place, but will be rated on their education, training, and experience.

Physiotherapy Aide
Physiotherapy Pupil Aide
Physiotherapy Assistant

Examinations for the above named positions will be held throughout the country on February 18, March 25, April 22, May 20, and June 24, 1925. They are to fill vacancies in the United States Veterans' Bureau and in the United States Public Health Service, at entrance salaries ranging from $720 to $1,320 a year.

The duties of physiotherapy aides will consist of administering physiotherapy in its several branches —massage, electrotherapy, hydrotherapy, mechanotherapy, thermotherapy; active, passive, resistive, and assistive exercises and remedial gymnastics; keeping daily record of the work and progress of each and every patient coming under direction and treatment; making the required reports of the activities of the reconstruction work in physiotherapy.

The duties of physiotherapy pupil aides will be the same as those for physiotherapy aide, except that they are pupils under the supervision and instruction of the chief aide in all the work above mentioned.

The duties of physiotherapy assistants will consist of administering to special cases the treatments of physiotherapy, as massage, electrotherapy, hydrotherapy, thermotherapy, mechanotherapy; active, passive, assistive, and resistive exercises; remedial gymnastics; keeping a daily report of the work and progress of each patient under the appointee's direction and treatment; and making the required reports of the activities of the reconstruction work in physiotherapy.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the board of United States civil service examiners at the post office or customhouse in any city.

INTER-STATE POST-GRADUATE ASSEMBLY CLINIC TOUR

Information pertaining to the Inter-State Post-Graduate Assembly clinic tour of American physicians to Canada, British Isles and France, 1925 with extension tours to the leading medical centers of Europe. Under the direction of the managing-director's office of the Inter-State Post-Graduate Assembly of America, Freeport, Illinois.

Announcement

The clinics and demonstrations connected with this tour will include all the different branches and specialties of medical science. It will be our utmost endeavor to see that every branch of medicine receives the same consideration on the program. This

announcement is only an early synopsis of the good things that are in store for the American physicians and does not in any way represent the complete program of the tour, therefore, if you do not find the branch of medicine in which you are interested represented in this report, you can rest assured that it will receive its proper importance on the program.

May 17

Tour starts from Chicago by special trains. Physicians living in territory where it will be more convenient to go direct to Toronto will be provided with transportation direct to this city in time for the clinics beginning May 18.

May 18, 19—Toronto

We spend May 18 and 19 as the guests of the teaching staff of the Toronto University Faculty of Medicine. Special clinics will be arranged covering the different branches of medical science by this institution.

May 20

Trip through the Thousand Islands and the St. Lawrence Rapids.

May 21, 22—Montreal

We spend May 21 and 22 as the guests of the teaching staff of McGill University, Faculty of Medicine. The clinics in Montreal are in charge of this institution. Those who wish to join the tour at Montreal on the evening of May 22, receive a reduction of $110 from the price of the tour.

May 23

Early A. M. sail for Liverpool, arriving in that city May 31st.

Ship Program

An intensive professional trans-Atlantic program for the benefit of the physicians who are taking advantage of the tour will take place on board ship and will be contributed to by some of America's most distinguished physicians and surgeons.

June 1 to 7—London

June 1 to 7, the time is spent in London. The clinic arrangements in this city are under the direction of the Honorary Organizer Mr. Philip Franklin, Honorary Secretary of the Laryngological section of the Royal Society of Medicine and medical director of the American Hospital, London; Sir Humphry Rolleston, Bt.; Sir John Bland Sutton, president of the Royal College of Surgeons; Sir William Arbuthnot Lane, Bt.; Sir St. Clair Thomson, president of the Royal Society of Medicine; Sir William Hale White, retiring president of the Royal Society of Medicine; Mr. H. I. Waring, vice-chancellor of the University of London and Mr. W. Girling Ball.

Special social features of the London program will include the conferring of the honorary membership of the Association upon the Duke of York at the opening ceremony, which will be held at Barnes Hall Royal Society of Medicine and the conferring of Honorary Memberships upon the Prime Minister, the Rt. Hon. Stanley Baldwin; the Minister of Foreign Affairs, Rt. Hon. Austen Chamberlain; the Minister of Health, Rt. Hon. Neville Chamberlain; Sir Auckland Geddes; the American Ambassador; the Lord Mayor of London. Sir Humphry Rolleston, Bt., President of Royal College of Physicians; Sir John Bland Sutton, President of the Royal College of Surgeons and Sir St. Clair Thomson, President of Royal Society of Medicine.

Receptions and luncheons will be given by the Lord Mayor of London, the Presidents of the Royal Societies of Medicine and Surgery, the English-Speaking Union, the Pilgrims' Society, American Chamber of Commerce and members of the British Government.

Intensive professional programs will be carried on at all the leading hospitals of London and at the headquarters of the Association, which will be at the home of the Royal College of Medicine, 1 Wimpole street.

June 8, 9, 10—Liverpool, Manchester, Leeds

June 8, 9, 10, the party is to be divided and alternated among the clinics of Liverpool, Manchester and Leeds.

At Liverpool the physicians will be the guests of the staffs of all the large hospitals of that city under the direction of Sir Robert Jones, R. E. Kelly and colleagues. Clinic arrangements are now in formation.

At Manchester the clinic group will be the guests of the staff of the Royal Infirmary. Sir William Milligan and associates are arranging the clinics.

At Leeds the physicians will be the guests of the University of Leeds. Clinic arrangements are in charge of Sir Berkeley Moynihan and associates.

June 11, 12—Dublin

The American physicians will travel to Dublin, where arrangements are under the general management of Sir William DeCourcy Wheeler, Sir William Taylor, Sir Arthur Ball, Sir Robert Woods and their colleagues. All the Irish members of the Association of Surgeons of Great Britain and Ireland will cooperate in forming the program for the American physicians.

June 13, 14, 15—Belfast

From Dublin the physicians go to Belfast. Here they are the guests of the teaching staff of Queen's University. The following committee of arrangements have been appointed and accepted to arrange clinics and demonstrations:

Prof. Andrew Fullerton, Mr. Thomas Sinclair, Prof. W. W. D. Thomas, Prof. R. J. Johnston, Prof. C. J. Lowry, Prof. J. E. MacIllwain, Dr. A. J. Craig, Dr. H. Hanna, Prof. Squimmers, Dr. Thomas Houston and Dr. S. Boyd Campbell.

In presenting the clinics and demonstrations the teaching staff of Queen's University will be associated with that of the Royal Victoria Hospital.

June 16, 17—Glasgow

From Belfast we continue to Glasgow, where the clinics are now being arranged by Mr. Farquhar Macrae, Mr. J. H. Pringle, Dr. Findlay Cowan and

Dr. John Patrick and their colleagues. On these dates excursions will be run to Ayr for families of the doctors and their friends.

June 18, 19—Edinburgh

Here the American physicians will be the guests of the Royal Infirmary of Edinburgh under the direction of Sir Harold Stiles, Sir Norman Walker, Sir Robert Philip and associates on the staff of the Royal Infirmary. A very excellent program is being arranged here.

June 20—Newcastle and University of Durham

Clinics will be held by the Honorary Staffs of the Newcastle-upon-Tyne Royal Infirmary and the Princess Mary Maternity Hospital, Pensions Hospital, Childrens' Hospital and some of the special hospitals in the city. The arrangements here will be in charge of Sir Rutherford Morrison, Mr. George Grey Turner, F.R.C.S., and other members of the staffs of the hospitals and clinics of this city.

Demonstrations will be given at the University of Durham College of Medicine (which is located in Newcastle-upon-Tyne) and probably at Armstrong College.

June 21 to 27—Paris

June 21 the entire party will leave for Paris, via London.

June 22 to 27, the time will be spent in Paris. The clinic arrangements are under the direction of a large number of the most eminent members of the profession both medical and surgical, including Professors Tuffier, Drs. De Martel, Gosset and Delbert in surgery, Drs. Sebilean de Fourmentel and Lermoye in Oto-Rhino-Laryngologie, Drs. Vidal, Chauffard, Sergent, Levaditi and Martin in Medicine and Prof. Morax and Delapersonne in ophthalmologic.

Headquarters for the American physicians will be at the Franco-American Club, Champs Elysee, where the physicians will be entertained by our hosts. General information and programs of the clinics will be given out here.

Among the numerous social functions of Paris are the following: A reception given on June 22nd by the Academy of Medicine; a large reception given in honor of the American physicians by the Municipal Council of Paris at the Hotel de Ville (City Hall); an evening reception by the Inter-Allied Assembly and a reception by Prof. Tuffier at his country home, which is located near Versailles.

Honorary memberships will be conferred upon distinguished statesmen, soldiers and citizens of France.

Besides the clinics and social features, there will be wonderful travel features.

Paris will be the end of the regular tour, but there will also be a sailing home a week later allowing the American physicians, their families and friends to stay a longer time in Paris with more extensive sightseeing and giving the physicians the opportunity to attend the clinics at Strasbourg and Lyon where elaborate clinics are now being prepared for their benefit. This part of the tour will be given at the lowest possible cost in addition to the regular tour.

PRICES	Chicago to Chicago	Montreal to Montreal or New York
(c) with first-class, high grade hotels and cabin ocean passages	$990.00	$880.00
(b) with first-class, medium grade hotels and cabin ocean passages	910.00	800.00
(a) with moderate priced hotels and third-class ocean passages	750.00	640.00

Medium grade hotels, third-class on steamers, $635.

The last classification is offered to doctors and medical students who are desirous of having the chance to avail themselves of the wonderful clinic opportunities of the tour. As this Association is purely an educational institution and is working for the medical profession as a whole, the board of trustees decided at its annual meeting that this class should be included.

Extension Tours

The opportunity will be given to the physicians subsequently to the main tour to visit practically all the main clinic centers of Europe, through extension tours, conducted by the Temple Tours of Boston under the direction of this office.

It is necessary in order to hold space for the tour to send to the office of the managing-director the sum of $65 per person. If for any reasons the applicant for space decides that he cannot take the tour, the money will be refunded immediately, if this demand is made within six weeks of sailing time. The reservations will be assigned and preference given on the ship and in the hotels in the order they are received, accompanied with check for $65 per person.

This tour is open to members of the profession who are in good standing in their state or provincial societies and their families. No restriction of territory. This invitation is understood to be extended to Canadian physicians as well as those of the United States. The Association will also be able to take care of a limited number of lay friends of the physicians. This is possible on account of their not requiring clinic space.

Members of the party who are specialists and who wish to devote their entire time abroad to their special work, will have the option of spending in London and Paris the time taken up by the tour to northern England, Ireland and Scotland.

Clinics in all the special branches are being arranged by the management of the Inter-State Post-Graduate Assembly expressly for these men to be held in London June 8 to 14 and in Paris, June 15 to 21.

For further information, write Dr. William B. Peck, Freeport, Illinois.

Officers of the Tour

President—Dr. Charles H. Mayo, Rochester, Minnesota.

Chairman of the Orientation Committee—Dr. Addison C. Page, Des Moines, Iowa.

Director of the Tour—Dr. William B. Peck, Freeport, Illinois.

Secretary—Dr. Edwin Henes, Jr., Milwaukee, Wisconsin.

American Advisory Committees on Clinic Arrangements

Dr. William J. Mayo, Mayo Clinic, President of Clinics, Rochester, Minnesota.

Dr. Edward William Archibald, Prof. of Surgery, McGill University, Faculty of Medicine, Montreal, Canada.

Dr. Walter W. Chipman, Prof. of Obstetrics and Gynecology, McGill University, Faculty of Medicine, Montreal, Canada.

Dr. George W. Crile, Prof. of Surgery, Western Reserve University, School of Medicine, Cleveland, Ohio.

Dr. John B. Deaver, Prof. of Surgery, University of Pennsylvania, School of Medicine, Philadelphia, Pennsylvania.

Dr. John M. T. Finney, Prof. of Surgery, Johns Hopkins University, Medical Department, Baltimore, Maryland.

Dr. Duncan A. L. Graham, Prof. of Medicine and Clinical Medicine, University of Toronto, Faculty of Medicine, Toronto, Canada.

Dr. Allen B. Kanavel, Prof. of Surgery, Northwestern University, School of Medicine, Chicago, Illinois.

Dr. Charles F. Martin, Prof. of Medicine, McGill University, Faculty of Medicine, Montreal, Canada.

Dr. Charles H. Mayo, Mayo Clinic, Rochester, Minnesota.

Dr. Alexander Primrose, Dean and Prof. of Clinical Surgery, University of Toronto, Faculty of Medicine, Toronto, Canada.

Dr. Clarence L. Starr, Prof. of Surgery, University of Toronto, Faculty of Medicine, Toronto, Canada.

MEDICAL NEWS NOTES

Fellow executives, department heads and representatives of the sales staff of E. R. Squibb & Sons on January 3rd at the Hotel Commodore, New York, participated in the celebration of the twentieth anniversary of the association of Vice-President Theodore Weicker with the House of Squibb. The feature of the happy event was the presentation to Mr. Weicker by President Carleton H. Palmer, on behalf of those present of a rock-crystal service set with a center piece of old English Spode ware. Although taken by surprise, Mr. Weicker who had already addressed the members of the Squibb Go-Getter Club, who had contributed the most consistent and constructive service during the year past, was quite equal to the new demand. His graceful response was another convincing demonstration of the genuine inspiration and kindly consideration he has extended to his co-workers throughout the years that he has sturdily maintained the sterling principles of the House of Squibb as established by its illustrious founder, Dr. Edward R. Squibb.

The presentation of rewards to the fifteen representatives of the sales staff who had qualified as the key Squibb Go-Getters during 1924 was another interesting feature of the program. R. D. Keim, director and general sales manager acted as toastmaster at the banquet and presided at the reception which followed.

The Medical Study Club of Des Moines had as its guest on January 12 and 13 Doctor Ethel M. Luce from London. A dinner was given in her honor and she gave an address dealing with some of her own investigations concerning certain nutritional disorders in childhood. Doctor Luce is studying in the United States as a Fellow of the British Medical Research Council, funds for which are provided by the Rockefeller Foundation. A former Des Moines physician, Doctor Clifford W. Wells, arranged her visit to Des Moines, he being in charge of all of the medical fellowships of the Rockefeller Foundation.

Dr. Charles H. Mayo of Rochester, Minnesota, will endow a lectureship in surgery at Northwestern University Medical School, it was announced by Dr. Walter Dill Scott, president of the University. Dr. Mayo received his medical education at Northwestern, graduating in 1888. He has agreed to give the first of the annual lectures and his brother, Dr. William Mayo, is to deliver the second one.

Other eminent surgeons will be invited to deliver lectures under the new endowment in subsequent years.

SOCIETY PROCEEDINGS

Blackhawk County Medical Society

The Blackhawk County Medical Society met in Waterloo, January 7.

The paper of the evening was Mayo Clinic presented by Dr. Walter E. Sistrunk on The Management of Patients with Goiter.

Officers elected—President, Dr. C. C. Bickley, Waterloo; secretary, Dr. A. J. Joint, Waterloo; treasurer, Dr. F. C. Sage, Waterloo; censor, Dr. J. G. McAlvin, Waterloo.

Dallas-Guthrie County Medical Society

The regular meeting of the Dallas-Guthrie County Medical Society was held at the Arlington Hotel, Adel, Iowa, January 15, 1925.

Program—Address by Dr. W. R. Van Duzer, Ideas of a Country Practitioner. Paper by Dr. M. M. Myers, Heart Disease.

Officers for 1925—President, Dr. W. R. Van Duzer, Casey; vice-president, Dr. R. E. Doidge, Perry; secretary and treasurer, Dr. S. J. Brown, Panora; delegate, Dr. M. N. Voldeng, Woodward;

alternate, Dr. J. W. Harrison, Guthrie Center; board of censors, Dr. C. O. Sones, Panora.

Meetings for 1925—January 15, Adel; April 16, Panora; July 16, Adel; October 15, Panora.

Decatur County Medical Society

The Decatur County Medical Society met at Leon, Iowa, December 11, 1924, at 8 o'clock. Papers were read by Dr. O. H. Peterson of Lamoni; Dr. F. A. Bowman of Leon; Dr. G. P. Reed of Davis City; Dr. J. S. Coontz of Garden Grove, and Dr. C. H. Mitchell of Leon. A general discussion followed.

The following officers were elected for the ensuing year: President, Dr. T. J. Wilkins, Garden Grove; vice-president, Dr. M. W. Rogers, Pleasanton; secretary-treasurer, Dr. B. L. Ecker, Leon; censor, Dr. J. S. Coontz, Garden Grove; delegate, Dr. J. S. Coontz, Garden Grove; alternate delegate, Dr. O. H. Petersen, Lamoni.

There were about thirty doctors in attendance, including a number of visiting doctors from adjoining counties.

T. J. Wilkin, president,
B. L. Ecker, secretary.

Des Moines County Medical Society

The Des Moines County Medical Society convened at the Hotel Burlington, Burlington, January 13, 1925. Dr. J. T. Strawn of Des Moines, read a paper on The Gastrectomized Stomach.

Jasper County Medical Society

The Jasper County Medical Society met at the Churchill Hotel, December 30, 1924.

Officers elected—President, Dr. C. R. Voorhis, Prairie City; vice-president, Dr. R. G. Anspach, Colfax; secretary, Dr. W. E. Lyon, Newton.

Lee County Medical Society

More than 100 physicians attended the annual meeting of the Lee County Medical Society which was held at the high school building December 19.

Guests were present from surrounding counties and one of the most successful meetings of the society was held.

Officers were elected for the coming year at the business meeting held in the afternoon. Following are the officers named: Dr. John H. Wilson of Keokuk, president; Dr. Frank R. Richmond of Fort Madison, vice-president, and Dr. William Rankin of Keokuk, secretary and treasurer.

A number of interesting speeches on surgery were given during the conference and at 6:30 a banquet was served by the home economics class of the high school.

Dr. George Gilhorn of St. Louis addressed the meeting on the use of radium, encouraging the use of radium in cases of tumors and cancers. Dr. Fuller of Keokuk, president of the State Medical Society gave a talk on medical legislation. Dr. Alfred Strauss, surgeon at the Michael Reese Hospital in Chicago, gave a talk on surgery of the stomach illustrated by a series of lantern slides and illustrations. Open discussion was held and a number of private cases were discussed before the meeting.

J. R. Frailey, the principal speaker of the evening, gave an address on capital punishment. He strongly encouraged the use of capital punishment in cases of premeditated murder. During the course of his speech he denounced the Leopold and Loeb case and sighted a number of other cases where medical testimony was used as an influence to keep murderers from the gallows.

Following is the program for the meeting:

Business meeting.

The Use of Radium in Gynecology—Dr. George Gelhorn, head of the department of gynecology and obstetrics, St. Louis University, St. Louis, Missouri.

The Value of Gastroenterostomy as Compared to Partial Gastrectomy in Duodenal and Gastric Ulcer—Dr. Alfred Strauss, surgeon to Michael Reese Hospital, Chicago, Illinois.

Capital Punishment as it Relates to the Medical Profession—Hon. Joseph R. Frailey.

Linn County Medical Society

Linn County Medical Society "put over" another big program on January 8 when Dr. Richard L. Sutton of Kansas City, Missouri, turned his repeater gun full of humorous and instructive phrases, loose on a herd of doctors at the Montrose Hotel, Cedar Rapids.

At 7 p. m. some twenty skin cases were presented but the Sutton rapid fire diagnosis and treatment for each case was given in less than one hour. His treatment at times was vastly different from that advised in his text-book for in one instance he advised for a tight scalp "better marry a caveman and let him drag you around by the hair".

Then he invited us all on a big game hunt to Africa, and by means of the lantern found out just how to do it. His descriptive phrases such as "let the lion approach until your hair feels like the bristles on a tooth brush" and "if you are not satisfied with your looks just let an elephant step on you and you will never look the same again" kept everyone royally entertained. A woman's version of how he killed the big game in rhyme proved the hit of the evening.

Dr. W. E. Gatewood of the Department of Internal Medicine of Iowa City then gave an illustrated talk on "Peptic Ulcers" giving the commoner forms of treatment and discussing the good and bad points of each.

Following this Dr. Sutton presented some slides showing the excellent result with the early treatment of Skin Cancers by means of curetment and radium.

The next meeting will be held on February 14.

B. L. Knight, Sec'y.

Mahaska County Medical Society

Mahaska County Medical Society met January 6. Officers elected were: President, Dr. C. J. Lukens;

vice-president, Dr. Chas. Wallace; secretary, Dr. E. Marsh Williams; treasurer, Dr. B. O. Jerrol.

Program for the first six months: January, Dr. B. G. Williams and Dr. S. W. Clark. February, Dr. M. Childress and Dr. S. W. Clark. March, Dr. F. A. Gillett and Dr. F. J. Jarvis. April, Dr. J. E. Morgan and Dr. C. N. Bos. May, Dr. K. L. Johnson and Dr. P. M. Day. June, Dr. C. J. Lukens and Dr. L. A. Rogers. July, Dr. E. Marsh Williams and Dr. W. S. Windle.

Page County Medical Society

The Page County Medical Society held their annual meeting Wednesday afternoon, December 31, 1924, at the State Hospital in Clarinda.

The meeting was called to order at two o'clock. The election of officers resulted in the relection of the former officers, who are Dr. J. F. Benning of Yorktown, president; Dr. J. F. Aldrich of Shenandoah, secretary. Dr. W. C. Phillips of Clarinda was elected as delegate to attend the state meeting in Des Moines which will be held in May. The next meeting will be held at Coin in June.

Three new members were taken into the society. Dr. H. McK. Bunch, Shenandoah; Dr. J. H. Wells, Blanchard, and Dr. W. G. Johnson of Coin.

Palo Alto County Medical Society

An interesting meeting of the Palo Alto County Medical Society was held in the city hall, Emmetsburg, on the afternoon of January 8.

The Relationship of the Local Society to the State Society, or Organization, was the principal topic of discussion.

Dr. J. Hennessy of Emmetsburg, was elected president, and Dr. H. L. Brereton of Emmetsburg, secretary.

Dr. Robert Powers has returned to resume practice with his father, Dr. H. A. Powers of Emmetsburg, after two years of graduate study at the University of Pennsylvania.

Harold L. Brereton, Sec'y.

Polk County Medical Society

The Polk County Medical Society met for its regular meeting in the Oak Room of the Fort Des Moines Hotel, Tuesday, January 27, 1925, at 7:30 p. m. The meeting was called to order by the president, Dr. W. W. Pearson, who made a few remarks in opening.

The minutes of the previous meeting were read and approved.

Dr. Thomas P. Bond presented a case of hypopituitarism of anterior lobe type. Discussed by Dr. F. A. Ely and Dr. W. L. Bierring after a cursory examination.

Program—Rheumatic Fever, D. J. Glomset, M.D. Formal discussions: dermatological aspect, H. C. Willett, M.D.; neurological aspect, Russell C. Doolittle, M.D.; pediatrical aspect, Lee F. Hill, M.D.; cardiological aspect, M. M. Myers, M.D.; head surgical aspect, F. E. V. Shore, M.D.

Dr. H. L. Saylor spoke a few words and commended the county physicians on their efforts in the general vaccination of the public.

A card of thanks from Mrs. Chas. F. Smith and family, for the floral tribute, from the society, was read by the secretary.

It was moved by Dr. D. J. Glomset that a committee of three be appointed to draw up resolutions of sympathy for Dr. Chas. F. Smith's death. Duly seconded and unanimously carried.

Dr. H. E. Ransom, chairman, Dr. H. L. Saylor and Dr. R. P. Parriott were appointed by the president to serve on this committee.

The secretary announced that guarantee bonds, for $2000, from the Physicians Collection Bureau have been deposited with the secretary of the society.

The following bills were presented: McNamara, $2.25; Alpha Floral Co., $10; Iowa Printing & Supply Co., $16; L. K. Meredith (commission), $100.

It was moved by Dr. Bierring that these bills be allowed. Duly seconded and unanimously carried.

Dr. W. L. Bierring spoke in regard to the proposed hospital for contagious diseases.

Fourteen members had dinner at the Polk County table, and seventy-nine members were present at the meeting.

L. K. Meredith, Sec'y.

Taylor County Medical Society

The Taylor County Medical Society met in Bedford in the Community Club rooms. New officers were elected, as follows: Dr. J. W. Beauchamp, Bedford, president; Dr. B. M. Little, Clearfield, vice-president; Dr. G. W. Rimel, Bedford, secretary-treasurer. The board of censors are: Drs. Maloy, Bedford; Reed, Clearfield, and Claybaugh, Gravity.

Union County Medical Society

The Union County Medical Society met at the Greater Community Hospital, Creston, January 2, 1925.

Officers elected: President, Dr. J. C. Parsons; vice-president, Dr. A. Fred Watts; secretary-treasurer, Dr. H. A. Childs; delegate State Medical Society, Dr. Edward Schifferie; alternate, Dr. T. V. Golden.

Webster County Medical Society

The Webster County Medical Society has continued to hold its Tuesday night meetings from September to May. For the new year there are six new members bringing the total membership up to forty-six. Interest and attendance at the meetings has been good. The program for January to June, 1925, is announced. All members of the State Society are invited.

The one hundred and fifty thousand dollar addition to the St. Joseph's Mercy Hospital of Fort Dodge, including new isolation, maternity ward and delivery rooms, diet kitchens, and nurse's class rooms, was formally opened December 1. An operative and show clinic of more than fifty cases was held by members of the staff, December 2, at the

hospital at which there was a large attendance of physicians of this district whose patients are cared for at this hospital. In the evening there was a banquet attended by about one hundred and twenty physicians at which Dr. Edw. Evans of La Crosse, Wisconsin, delivered the address "The General Practitioner in Medicine".

The new Lutheran Hospital construction has progressed as rapidly as possible, and by the summer members of this society will have as adequate hospital facilities as any group in the state.

At the regular meeting December 9 the following officers were elected for the ensuing year: Dr. Geo. Gibson, president; Dr. S. B. Chase, vice-president; Dr. A. Graham Asher, secretary and treasurer.

Meetings of the society are held Tuesday at 8:30 p. m. at the Commercial Club Rooms, Wahkonsa Hotel.

Program, January-May, 1925

January 6, 1925—Experiences with Vaccination in Alaska, Dr. C. H. Mulroney.

January 13, 1925—The Toxemias of Pregnancy, Dr. E. C. Kepler, Pocahontas, Iowa.

January 20—No meeting.

January 27, 1925—The Diagnosis and Treatment of Puerperal Infection—Dr. L. L. Leighton.

February 3, 1925—The Doctor as a Witness—Expert Witness—Privileged Communications, Mr. Seth Thomas, LL.D., Fort Dodge, Iowa. (The second address in a series on Medico-Legal Education.)

February 10, 1925—The Diagnosis and Treatment of Shock, Dr. Robert Evans. Meeting at St. Joseph's Mercy Hospital.

February 17, 1925—The Mendelian Law, Dr. W. W. Bowen. With lantern slides. Open to the public.

February 24, 1925—Vascular Lues of the Nervous System, Dr. Clarence Van Epps. Professor of Neurology, University of Iowa. Meeting at the Wahkonsa Hotel.

March 3, 1925—Radiological Findings of Aortitis, Dr. C. J. Saunders.

March 10, 1925—Protein Milk in Infant Feeding, Dr. Walter Anneberg, Carroll, Iowa.

March 17, 1925—Local Anesthesia in Surgery, Dr. Robert E. Farr, Minneapolis, Minnesota. Meeting at the Wahkonsa Hotel.

March 24, 1925—The Control of Contagious Diseases, Dr. Don M. Griswold. Director of Laboratories, State Board of Health, Iowa City, Iowa.

March 31, 1925—Gonorrheal Ophthalmia, Dr. L. M. Martin. With lantern demonstration. Meeting at St. Joseph's Mercy Hospital.

April 7, 1925—The Different Diagnosis and Treatment of Otitis Media, Dr. R. C. Sebern.

April 14, 1925—The Modern Treatment of Pneumonia, Dr. John C. Hovenden, Laurens, Iowa.

April 21, 1925—The Treatment of Dysmenorrhea, Dr. Don McRae, Council Bluffs, Iowa. Meeting at Wahkonsa Hotel.

April 28, 1925—A Rationale of Prenatal Care, Dr. A. H. McCreight. Meeting at St. Joseph's Mercy Hospital.

May 5, 1925—Management of Crushing Injuries of the Abdomen, Dr. Guy F. McAuliffe, Webster City, Iowa.

May 12, 1925—The Use of Digitalis in Heart Disease, Dr. A. A. Schultz. Meeting at St. Joseph's Mercy Hospital.

May 19, 1925—Show Clinic in Dermatology, Dr. H. C. Willett, Des Moines, Iowa.

May 26, 1925—The Management of the Undernourished Child, Dr. E. R. Earwood.

Woodbury County Medical Society

The annual meeting of the Woodbury County Medical Society was held at the West Hotel, December 30, 1924.

Case reports from the different hospitals were presented, including the annual report of the Woodbury County Clinic and Dispensary.

Officers elected: President, Dr. L. J. Townsend; vice-president, Dr. S. E. Sibley; secretary-treasurer, Dr. William E. Cody; censor, Dr. Victor E. Brown.

Rohlf Birthday Clinic

The Rohlf Birthday Clinic was recently held in Waverly. It is reported that a considerable group of distinguished surgeons were present and that sixteen patients were operated upon, as an offering for the continued good health and vigor of Waverly's genial surgeon.

Twin Lakes District Medical Society

Forty physicians from six counties attended the third annual meeting of the Twin Lakes District Medical Society at Rockwell City, on January 15. The entire meeting was devoted to the study of prophylaxis of the more common diseases. Dr. Thomas Parran, Jr., of Springfield, Illinois, representing the U.S.P.H.S. gave an address on Public Health and Preventive Medicine and Don M. Griswold, director of laboratories of the State Board of Health at Iowa City addressed the meeting on Modern Methods of Communicable Disease Control.

The tentative date set for the next meeting was June, 1925.

W. J. Findley, president,
P. W. Van Metre, Sec'y-Treas.

COMING MEETINGS

State University Annual Medical Clinic

The Annual Medical Clinic of the State University Hospital will be held April 7 and 8, 1925. All physicians in the state are invited to attend.

The Alumni Clinic will be held later in the spring.

Dr. Harris P. Mosher, prof. of laryngology and associate in anatomy, Harvard Medical School, will address the visiting physicians on the first day.

Dr. James B. Herrick, prof. of medicine, Medical School University of Chicago (formerly Rush Medical College), will address the assemblage on the second day.

The heads of the various departments of the Uni-

versity Hospital will conduct clinics in their respective fields.

The evening of April 7 will be given over to a smoker and general good time.

A program will be sent out later that will particularize.

American Congress on Internal Medicine

The Ninth Annual Clinical Session of the American Congress on Internal Medicine will be held in Washington, D. C., March 9-14, 1925.

Washington clinicians and investigators of attainment will devote the entire session to amphitheatre and group clinics, ward "rounds", laboratory conferences, lectures, demonstrations of special apparatus and methods, and the exhibition of unusual scientific collections. Civilian and governmental services are united in the aim to make the week useful and memorable.

Practitioners and laboratory workers interested in the progress of scientific, clinical and research medicine are invited to take advantage of the opportunities afforded by this session.

Address enquiries to the secretary-general.

Wm. Gerry Morgan, pres.,
Washington, D. C.

Frank Smithies, secretary-general,
1002 N. Dearborn Street,
Chicago, Illinois.

American Laryngological, Rhinological and Otological Society

The American Laryngological, Rhinological and Otological Society has completed arrangements for its 1925 convention which it will hold at The Ambassador, May 22-25, Atlantic City. The American Proctologic Society and the Association for the Study of Internal Secretion will also meet at that hotel, directly following the L. R. and O.

From advance reservations already received, officers of the three societies believe that the attendance will be the largest in the history of the organizations.

HOSPITAL NOTES

Winners of Modern Hospital's Essay Contest Announced

Dr. Edward A. Fitzpatrick, dean of the graduate college and educational director of the hospital college of Marquette University, Milwaukee, Wisconsin, received first prize in the Modern Hospital Publishing Company's essay contest on "The Interrelationships of Hospital and Community", which closed November 1. Three awards of $350, $150 and $100, and three honorable mentions were made.

Second and third prizes went to Dr. Lucius R. Wilson, assistant superintendent, Barnes Hospital, St. Louis, Missouri, and to Dr. D. L. Richardson, superintendent, Providence City Hospital, Providence, R. I., respectively.

Honorable mention was given to Mr. John R. Howard, Jr., superintendent, New York Nursery and Child's Hospital, New York; Mr. H. J. Southmayd, assistant superintendent, Mount Sinai Hospital, Cleveland, Ohio; and Miss Zella Nicolas, R. N., a graduate of the nursing school, Mount Sinai Hospital, New York, N. Y., now a student at Teacher's College, Columbia University, New York, N. Y.

Announcement of the contest winners appears in the current issue of The Modern Hospital and The Nation's Health, the two magazines of The Modern Hospital Publishing Company, through which the contest was conducted. The prize essay appears in full, together with biographical sketches of the winners, and comments of the committee of award in the February issue of The Modern Hospital.

The committee of award of the contest was composed of three outstanding leaders in the hospital and public health field; Dr. Haven Emerson, professor of public health administration, Columbia University, New York, N. Y., chairman; Dr. Michael M. Davis, Jr., executive secretary, Committee on Dispensary Development of the United Hospital Fund of New York, and Dr. Willard C. Rappleye, superintendent, New Haven Hospital, New Haven, Connecticut.

Sixth District Nurses' Association held its annual meeting at the Emma Lamb Young Nurses' Home Thursday, January 15, with thirty-five present from Davenport, Muscatine and Clinton. Dr. Robert Fenlon of Clinton gave the principal address, taking for his subject, Infantile Paralysis and Its Treatment.

The annual state convention report was given by Miss Mary Fitzpatrick of Davenport.

Officers were elected as follows: President, Elizabeth Grossman of Davenport; vice-president, Grace Van Evera of Davenport; secretary, Nellie Bagley; treasurer, Mary Fitzpatrick; directors, Estella Mallette and Sister Mary Loretto of Davenport.

Davenport will entertain the next convention, the quarterly meeting in April.

The new Allen Memorial Hospital, Waterloo, will be opened for patients about the first of next month. All the furniture has been ordered and some is now being installed in the building. Several of the rooms are being furnished by individual citizens of Waterloo, the other equipment coming out of the hospital fund.

A hospital costing $800,000 at Poughkeepsie, known as the Vassar Hospital, was dedicated September 8th, George E. Vincent delivering the address.

Dr. C. L. Marston was re-elected president of the staff of Mercy Hospital, Mason City.

PERSONAL MENTION

Dr. C. S. James of Los Angeles, has been appointed consultant in bone surgery of the Pacific Veterans' Hospital of southern California, an 800 bed institution. Col. James Mattison of the regular army corps is the commander. Veterans of four wars, Mexican, Civil, Spanish-American and World War comprise the patients. Four thousand inmates of the soldiers' home come from all over the United States and territories. Dr. James had a contribution in the Journal of the Iowa State Medical Society, September issue, on "Operative Fractures."

The task of re-organizing the medical department of the United States Veterans' Bureau has been assigned to a former Cedar Rapids physician, who after serving with distinction in the medical corps of the army, continued his connection with the government's agencies for the benefit of the former service men. He is Dr. George C. Skinner, who has been transferred to Washington from the district office of the Veterans' Bureau, in which he handled many Iowa cases, so his executive ability might be used in improving the administration of the Washington headquarters for veterans' relief. Dr. Skinner is, in fact, medical director of the bureau, and is now engaged, at the direction of Gen. Frank T. Hines, the director, in the work of re-organizing the whole medical staff of the bureau so that more expeditious consideration may be given to the medical side of this big government establishment. Dr. Skinner and Col. C. B. Robbins, another Cedar Rapids man and former commander of United States troops, were entertained at luncheon recently by the Iowa delegation, which was called together by Representative Cyrenus Cole in order that they might confer with the two Iowans on soldier legislation and veteran relief.

Dr. L. O. Ulving has purchased the practice of Dr. Bertram Bersche of Elkader. Dr. Ulving is a graduate of Lund University, Sweden.

Dr. Max E. Witte, Jr., has been appointed to the Clarinda State Hospital medical staff, entering the service January 1.

Members of the Dubuque Medical Society entertained at dinner in the Elks' Club Wednesday evening, January 14, as a farewell honor for Dr. C. A. Kearney, who leaves Thursday for St. Paul, Minnesota, where he will practice. Covers were placed for about twenty-five members. Dr. Langworthy presided as the toastmaster.

Dr. Carl H. Carryer, county physician, Polk county, was awarded the contract for doing the medical and surgical work required of county patients, by the board of supervisors. The award carries a remuneration of $3,000 to Dr. Carryer. Bids for medical supplies for the county for the ensuing year still are under consideration.

Dr. Roscoe P. Carney of Davenport has been elected president of the Alumni Association of St. Ambrose College.

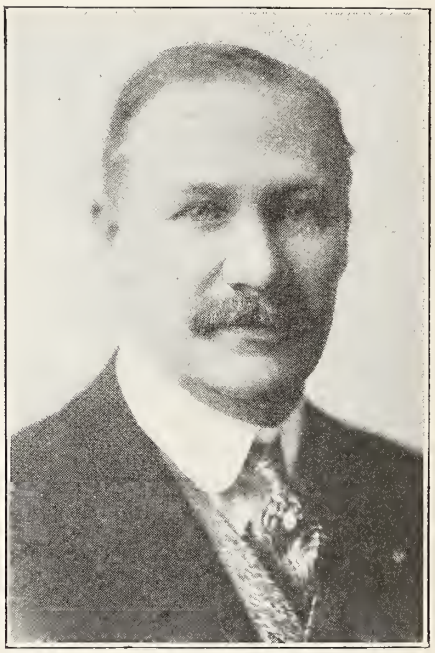
MARRIAGES

Miss Josephine Creelman, the well known superintendent of nurses of Iowa State University Hospital, was married January 1 to Judge Frederick F. Faville, Chief Justice of Iowa Supreme Court.

OBITUARY

Dr. Charles F. Smith died at his home in Des Moines, Iowa, December 29, 1924.

Dr. Smith was born on a farm now a part of the City of Des Moines, Iowa, October 10, 1872, and was the son of John C. and Emma Smith. He was educated in the public schools of Des Moines and Drake University. He was a graduate of the medical department of Drake, class of 1898.



DR. CHAS. F. SMITH

Immediately after graduation he associated himself with Dr. D. W. Smouse, which connection was maintained for several years, later he became the partner of the writer of this sketch which was maintained a little over four years, after this time he entered the practice alone and continued so until the time of his death, except for more than one year spent in the service of his country here and in France during the World War.

In 1917 he was tendered a commission as captain in the medical department, which he accepted and was ordered to Ft. Riley, Kansas, then an officer's training camp. His superior abilities as a surgeon were almost immediately recognized by the officers of that camp and he was then ordered to France, where he was at once detailed for duty with the forces of the A. E. F. at the front. He was in four major offensives and engaged almost exclusively as an operator, during which time he performed more than eight hundred operations, a large portion being

capital operations. After the Argonne offensive at the close of hostilities he was connected with the hospitals at Toule. About the time of the armistice, in recognition of his meritorious services, he was promoted to the rank of major.

While his arduous service during his thirteen months in France was telling perceptibly on his health, he nevertheless became greatly attached to army life and after his return, he organized a mobile hospital unit under the direct authorization of the surgeon general's office, and at the time of his death, held the rank of lieut.-col. in the Reserve Corps.

He was always interested in educational matters and as a member of the school board of this city, was always active in the promotion of every movement which seemed to him to mean progress and advancement in the interest of the rising generation.

He was for two years a member of the faculty of his alma mater, and while a member of the board of trustees of Drake University, he was greatly interested in all its departments, more particularly interested in athletics and his labors in that direction were of the greatest value to that department, the results being perceptible at this date.

He was a member of the First Christian Church, a Mason, a member of Capital Lodge No. 110, the Consistory, the Commandery and the Shrine.

Dr. Smith was always active in every line of work in which he engaged. He was for several years chief medical director of the Yeomen.

In the passing of Dr. Smith the profession and the community has lost a most energetic and valuable member. He was a progressive worker. As a surgeon, he was a good diagnostician and an exceptionally clever operator. He was on the staff of nearly every hospital of the city. He was a man who always held opinions of his own but was careful and considerate of the opinions of others.

None could be more loyal and devoted in his friendships and to the profession of which he will always be remembered as an ornament by those who knew him best.

He was a most indulgent and devoted husband and father and a kindly disposed neighbor.

He was most abstemious in his habits having never tasted alcoholic liquor in any form.

He married Miss Minerva Abbie Radcliffe November 10, 1898, who survives him with three children, Roswald, Thyra and Elwyn, all of this city.

Dr. Louis Schooler.

Warren Henry Young, the son of John and Leonora Merchant Young, was born January 11, 1848, in Troy, New York, and passed away at his home in Eldora, Iowa, January 8, 1925, being at the time of his death within three days of his seven-seventh birthday.

In the years of his youth his parents came to Wisconsin, moving in 1852 from that state to Janesville, Iowa. At the age of ten, Dr. Young began his first work for the government, riding horseback about thirty miles every day carrying mail.

The family moved to Waterloo, Iowa, about the time of the Indian uprising at New Ulm, Minnesota. Dr. Young went into the army from Waterloo. At the close of the war, having been honorably discharged, he returned to Waterloo, there studying and learning a trade.

On September 12, 1870 he was united in marriage with Cornelia E. Edwards. To this union no children were born. Dr. Young worked at his trade and studied medicine with Dr. Cantwell of Davenport, Iowa, in the late seventies. He continued in seasons working for the government in the arsenal at Rock Island, Illinois. Later he attended the Missouri Medical College at St. Louis.

After attending college he began the practice of medicine in Reinbeck and Morrison, Grundy county, Iowa, in 1882. In the latter part of 1883 he moved to Eldora, and practiced his profession strenuously until his health failed. In 1889 he went to Colorado for his health, returning to Eldora in 1902. He maintained an office in Eldora until within a year of his death.

Alexander W. Trout, one of Perry's pioneer physicians and surgeons died January 8, 1925, at the home of his daughter, Mrs. F. C. Hamlin, at 1624 Willis avenue. The immediate cause of his death was due to dropsy. Dr. Trout had been in failing health for the past six months and had been confined to his home during the last three months of that time. He was eighty-one years of age.

For fifty-eight years Dr. Trout has been in the practice of medicine, the last forty-one of which has been spent in Perry, where he maintained offices until September of last year at which time it was necessary for him to give up active practice because of ill health.

Dr. Trout was born in Tazewell county, Illinois, September 11, 1844, and was the eldest of three children. His father was a farmer and breeder and one of the pioneer agriculturists of that state. Reared in the county of his birth Dr. Trout decided upon the practice of medicine for his life work and he entered the Rush Medical College of Chicago from which he graduated on the 25th of January, 1867. Five days later he entered the practice of medicine at Pekin, Illinois, being associated with Dr. Samuel Wigenseller. In a short time he moved to Quasqueton, Buchanan county, Iowa, where he remained until 1882, and then went to Nebraska. He spent twenty months in that state and then removed to Perry in 1884 where he has since lived. He opened an office here and achieved extreme success in the practice of medicine and surgery. By reading and investigation he kept in touch with the advanced thought of the profession and his labors were attended with excellent results. He maintained memberships in the State Medical Association and the Dallas-Guthrie Medical Society.

On Christmas day, 1870, Dr. Trout was married to Miss Martha McDonough, who passed away on July 30, 1900. Two children were born to Dr. and Mrs.

Trout, Mrs. F. C. Hamlin of this city and Shelly of Tacoma, Washington, who was here at the time of his father's death.

Dr. Trout was always interested in community affairs. He served two terms as a member of the city council and has done effective welfare work in the city besides having been city health physician for many years.

He was prominent in Masonic circles and at the time of his death was the oldest Mason in the city, having been raised in Empire Lodge No. 26, A. F. & A. M. while yet a resident of Pekin, Illinois. He also took the Royal Arch degree at that place. Later he transferred his membership to Otley Lodge and to Palmyra Chapter of this city. He likewise belonged to Gerard Commandery No. 56 K. T. in Perry and to Za-Ga-Zig Temple of the Mystic Shrine in Des Moines. He has been a past worthy master of a blue lodge, a past high priest of a chapter, a past commander of the Knight Templars and was always active in Masonic work of all branches.

In March, 1862, when but seventeen years of age, Dr. Trout offered his services to the government and for one year was a member of Company H, Seventieth Regiment of Illinois Volunteers. He was then discharged on account of disability, but in November, 1863, he re-enlisted in Company D, One Hundred and Forty-fifth Regiment of Illinois Volunteers, with which he remained until discharged late in 1864. He was twice elected lieutenant but would not accept the office.

Dr. W. B. Kibbey, one of the early practitioners of Marshalltown, died in a sanatorium at Kansas City, Thursday, December 25. His death was due to a complication of diseases due to severe cold which he contracted while in Marshalltown. He had not been in his usual robust health for several weeks, and went to Kansas City for treatment preparatory to going to California to spend the winter.

Dr. Kibbey took a prominent part in the development of Marshalltown from forty years ago till about 1900 when he gave up his practice and for a greater part of the time was out of the community, retiring from active practice. In 1888 he was elected councilman from his ward, and in 1893 was elected mayor of Marshalltown. Much of the paving and other improvements that are still in existence were made during his administration.

He was a man who won and retained friendships as very few men do, a gentleman at all times, considerate and watchful of the rights of others he was one who made life more pleasant for those with whom he came in contact, and his influence will long be felt.

William Beckford Kibbey was born in Maryland in 1856. He was educated in the schools of the east, graduating in 1882 from the medical department of Harvard University. He was married to Miss Mary Gertrude Federhen of Boston in March, 1882. To them were born six children, who survive: William Beckford, Jr., of Sonora, Mexico; Richard Carroll of Rocky Ford, Colorado; Briscoe Albertson of Sacramento, California; Harold of Lakeside, California; Gerald of Minneapolis, Minnesota, and Gladys Gertrude Horne of Tuscon, Arizona.

Funeral services were held at the Episcopal church December 29, in charge of the rector, Rev. C. P. Drew. Interment was at Riverside, services at the grave being in charge of the Masonic fraternity.

Dr. M. A. Beach of Stratford passed away at the Webster City Hospital Wednesday morning, December 31, after an illness of but a few days. Dr. Beach spent a happy day with his family Christmas, enjoying the day immensely. In the evening he was called to the home of a sick patient and while there began to feel badly. By morning it was realized that his condition had become serious. It was not until Saturday, however, that he was hastened to the hospital at Webster City.

His brother, H. E. Beach of Des Moines, and his sister, Dr. Lena Beach of Sauk Center, Minnesota, hastened to his bedside and were with him at the time of his death. His wife and two sons were also constantly at his bedside during his illness.

"Gus" Beach, as he was known in this city, was born in Glidden, April 18, 1867, the son of Mr. and Mrs. M. W. Beach. When he was a young boy his parents moved to this city, where he attended the public schools and grew to young manhood.

Later he attended the University of Iowa, graduating in medicine in June, 1901. In September of that year he opened his office in Stratford, Iowa, where he became one of the most influential men of the town. He was married shortly after locating there to Miss Adah Cheasbro of this city, who with their two sons, John Myron, and Chester, survive.

Dr. Elliott A. Cobb of Harlan, died at his home January 12, 1925.

Dr. Cobb was born in Wayne county, Pennsylvania, July 16, 1842. When he was six years old the family moved to Sandusky county, Ohio, where he grew to manhood and received his education. At the breaking out of the Civil War, young Cobb was a student in the medical department of the University of Michigan. He then enlisted in the 55th Ohio Volunteer Infantry and served from June, 1861 to the spring of 1865. At the close of the war he resumed his medical studies by entering the office of Dr. John Rice of Fremont, Ohio. Dr. Cobb completed his medical course at the Western Reserve Medical College at Cleveland, Ohio, from which school he graduated in 1869.

Following his graduation he located in Washington county, Iowa. In 1879 he took an additional course of medical study at Bellevue Hospital Medical College and then located in Harlan, where he practiced until retirement, death coming at the age of eighty-three years.

Dr. Cobb was married first, to Martha Foster, Washington county, Ohio, in May, 1873; she died in

1875. His second wife was Miss Nellie Cunningham of Wisconsin, married March 7, 1882.

Dr. Cobb was a member of his county and state medical societies. In addition he was active in local civic affairs, as is common with successful country doctors.

Dr. Jefferson David Griffith of Kansas City died August 29, 1924, at the age of seventy-four years. As a testimonial of personal regard, we present a brief biographical notice, of a man whom we had admired for many years for his independent, straight-forward way of dealing with medical problems.

Dr. Griffith was born in Jackson county, Mississippi, in 1850, graduated from the medical department of the City of New York in 1871, came to Kansas City in 1870 and became early identified with all important medical activities as they arose in Kansas City, in a leading way. He was a member of the American Medical Association and of the Pan-American Medical Congress. It was at the never-to-be-forgotten session of the Congress at Havana, when Major Reed read his full report on the yellow fever investigations that the writer first met Dr. Griffith.

Dr. Griffith was much interested in military affairs and served in the Spanish American War and was active in the Military Surgeons' Association and in all other surgical associations of a national character. For forty-nine years he was on the staff of St. Joseph's Hospital, Kansas City, where he died.

To the Editor:

You may be interested in publishing some of the details regarding the death of Dr. John Hunter of Sydney, Australia, who, with Dr. N. D. Royle, came to America at the invitation of Dr. William J. Mayo and Dr. Franklin H. Martin to deliver the John B. Murphy Oration in Surgery at the meeting of the Clinical Congress of the American College of Surgeons, held in New York, October 20, 1924. The work of Dr. Hunter and Dr. Royle in connection with Spastic Paralysis created unusual interest among the surgeons, orthopedists, and neurologists of the world.

After the New York meeting, Dr. Hunter went to London, and the following letter from Dr. G. Elliot Smith, Professor of Anatomy, University of London, University College, gives the details of Dr. Hunter's visit in London, of his illness, and of his death:

"December 16, 1924.

Dear Dr. Franklin Martin:

In reply to your cablegram which has just reached me, I can tell you in a few words of the little there is to say about the terrible tragedy of poor Hunter's death. He arrived in London on November 22, apparently in exceptionally good health and full of energy. He threw himself at once into the business of demonstrating his work to the Physiologists and Clinicians in London, and gave a number of lectures, and was going to start a more formal course on December 8. On December 3 he went up to Cambridge, and was very busy there with informal discussions as well as public lectures. He returned to London on December 6 because he was not well. On the following day, December 7, it was found that he had a temperature of 104.6 and I got our best physician, Dr. Charles Bolton, to see him, and he sent him into hospital suffering from the most virulent form of enteric that Dr. Bolton had ever seen. His temperature remained at about 105 until December 10, when signs of cardiac failure showed themselves, and he died on that day. He was delirious a good part of the time and almost unceasingly talked about his experimental work. It appears that he had been ill from December 1, but took no notice of it; as he was so absorbed in the task of convincing people here of the truth of his results that he went about for six days after the onset of the illness without realizing that he was seriously ill. He must have got the infection soon after leaving Quebec on November 14. The whole business is unspeakably tragic, because he was certainly the most promising anatomist that we had, and I feel convinced that if he had been spared, he would have been perhaps the biggest figure in scientific medicine of the present generation.

Yours very truly,

(Signed) G. Elliot Smith,
Professor of Anatomy."

Amplifed biographical sketches of Dr. Hunter may be found in the December 20th issues of The Lancet of London, and The British Medical Journal.

Franklin H. Martin,
Director-General.

After long weeks of patient suffering, Dr. Eliza Ellen Leonard of the North China Mission passed into eternal peace in a Peking Hospital, October 17. Dr. Leonard had been ill with cancer for several years, and in 1922 underwent an operation which relieved her for a short time. After a visit to this country in 1923, she returned to China to do what she could in the brief span of life left her. For six months she worked ceaselessly, but this past summer the old symptoms reappeared, and although her indomitable spirit carried her on for some weeks longer, she finally had to yield. Dr. Leonard was a graduate of Parsons College and the University of Michigan. She was appointed to China in 1895, and was for some time connected with the Dow Hospital for Women at Peking. Later she became dean of the North China Medical School for Women, remaining in that position until the school was removed to Tsinan and amalgamated with the school of medicine of Shantung Christian University. Just before her own death, Dr. Leonard's aged mother passed away. Her father, two sisters and two brothers survive.

BOOK REVIEWS

LIFE INSURANCE EXAMINATION

Edited by Frank W. Foxworthy, Ph.B., M.D., Indianapolis, Indiana; 156 Illustrations. C. V. Mosby Company, St. Louis, Missouri, 1924. Price, $9.00.

The editor, Dr. F. W. Foxworthy, has been associated with several hospitals and insurance associations and activities, and can speak with considerable authority on the problem of medical examination of applicants for insurance policies. To make the work more complete and useful, Dr. Foxworthy has invited medical officers of insurance companies and others to prepare special chapters on the various features of life insurance.

Life insurance is recognized as one of the most important business activities. Aside from its business relations, it is the greatest saving value to a vast number of people whose interest lies in the relatively small individual investment of the policy held. So wide is it in its bearing that definite policies must be adopted to determine who shall become members or policyholders, and one of the most important is medical examination. The tendency of life insurance is to extend its operation so that some form of insurance may be enjoyed by an increasing number of people.

The medical questions involved are: What tendencies toward disease or departures from a certain standard of normal health may be safely accepted as a sound business undertaking. The standard which has generally been adopted is, as set forth by the policies of different companies, a departure from this standard can be safely adopted only after a study of the vast amount of statistics accumulated by the old insurance companies. It is here that ability of medical men high in the councils of insurance companies is in demand. The second problem is to secure competent and loyal men to advise the selection of candidates for policies under the policy adopted by the particular company.

To cover the ground Dr. Foxworthy has presented a survey of the various features involved. The primary object is not to give employment to numerous doctors, but to employ certain doctors to make the business safe.

The first chapter is prepared by Henry Toulmin, M.D., medical director, Pennsylvania Mutual Life Insurance Company, on the History of Life Insurance Companies.

Chapter two: Examination and Inspection of Industrial Insurance, by Dr. Paul Fitzgerald, associate medical director, Prudential Insurance Company of America.

Chapter three: Group Insurance, by Franklin C. Wells, medical director Equitable Life Assurance Society.

Chapter four: Fraternal Insurance, by Dr. Geo. G. McConnell, Indianapolis, Indiana.

Chapter five: The Relation of the Agent to the Medical Examiner, by Harold F. Larkin, secretary Connecticut Mutual Life.

Chapter six: Organization of Medical Department, by Dr. Henry W. Cook, medical director Northwestern National Life.

Chapter seven: The Medical Director, by Franklin L. Grosvenor, medical director Travelers' Insurance Company, Hartford, Connecticut.

Chapter eight: Medical Referees, Dr. S. B. Schulz, associate medical director Massachusetts Mutual Life Insurance Company.

Chapter nine: The Medical Examiner, by W. F. Hamilton, M.D., Montreal, Canada, consulting medical referee, Sun Life Insurance Company of Canada.

Chapter ten: General Instructions to Examiners, Dr. Frank L. B. Jenney, medical director Federal Life Insurance Co., Chicago.

Chapter eleven: Etiquette of Medical Examinations, by Samuel C. Stanton, chief medical director Farmers National Life Insurance Co., Chicago.

Chapter twelve: The Examination of Women, by Rachel H. Carr, M.D., medical director Peoples Life Insurance Co., Chicago.

The twelve chapters referred to relate to the ethics of life insurance examinations, as regards the medical examiner, and often the subject of friction from lack of mutual understanding. Following are several chapters which relate to certain diseases to be carefully considered by the examiner and the attitude of insurance companies towards them, including methods of examination and diagnosis. One of the most important is Examination of the Heart and Blood-Vessels, by Eugene F. Russell, A.B., M.D., associate medical director, Mutual Life of New York. Another is The Endocrines and Visceral Nerves in Relation to Life Insurance Examination, by Francis M. Pottinger, Moravia, California. Syphilis from the Life Insurance Standpoint, by David N. Blakely, M.D., Boston, associate medical director, New England Mutual Life Insurance Company. Goiter, by George W. Crile, M.D., Cleveland and Robert L. Rowley, M.D., medical director Phoenix Mutual Life, Hartford, Connecticut. Post-Operative Risks, by Dr. Homer Gage, Worcester, Massachusetts. Malignant Epithelial Neoplasms, by Drs. James C. Masson and Albert C. Broders, Mayo Clinic, Rochester, Minnesota. Hazards of Tropical Risks, by Marion Souchous, New Orleans. Army Service as an Insurance Problem, by George S. Strathey, M.D., Toronto.

There are many other subjects of first importance which we would like to present, and many points under the various subjects we would like to discuss, but space will not permit. The excuse which may be offered for this extended notice is the great importance of the subject and the great number of doctors who are employed by insurance companies, who should have this book at hand, and read it with care and diligence in order to understand the problems of life insurance and the better to prepare themselves to meet the requirements of the companies who employ them.

A MANUAL OF DISEASES OF THE NOSE, THROAT AND EAR

By E. B. Gleason, M.D., Professor of Otology in the Medico-Chirurgical College Graduate School, University of Pennsylvania. Fifth Edition, Thoroughly Revised; 12 Mo. of 660 Pages, 212 Illustrations. Philadelphia and London: W. B. Saunders Company, 1924. Cloth, $4.00 Net.

The object of this manual is to supply students and general practitioners with the essential facts in as concise form as possible. The new edition is carefully revised, newer methods of treatment are substituted for older, when in the judgment of the author they were better. The book embraces the laryngoscope, rhinoscopy, otoscopy, sterilization of instruments, examination of patients. The diseases of the nose, pharynx, larynx, and the ear, have received very careful and comparatively lengthy description. Methods of treatment have been made as simple as possible, limited in most instances to the methods, drugs, and operations, which in the actual experience of the author have given the best result. The book closes with a collection of formulas printed in small print. Each formula or drug being followed with a description and its chief use in rhinology and oto-laryngology. Considerable is written about local anesthetics and biologic therapeutics. The author states that we may inject about eight ounces of one-half novocain supararenin solution without fear. A little later he states that for tonsillotomies a few drops are injected in several places beneath the mucous membrane and a small amount beneath the tonsil. Why use so little novocain solution for a painful operation as tonsillotomy, when it can be safely made painless by the injection of considerable more fluid? The book is very good and can be recommended to students and general practitioners.

E. P. Weih.

GOITER: NON-SURGICAL TYPES AND TREATMENT

By Israel Braum, M.D., Instructor in Clinical Medicine, Jefferson Medical College, Philadelphia, Pennsylvania; Member of the Society for Study of Internal Secretions, Etc. The Macmillan Company, N. Y., 1924.

There are many books on goiter, considered largely from a surgical point of view, but we fully agree with Dr. Braum that the time has come when the subject should be considered from a non-surgical point of view.

The author of this book has contributed much to a change in treatment from surgery to other methods. This change is due to a better understanding of the pathology of the disease. It is admitted that adenomatous and cystic types are to be considered as surgical, but the simple parenchymatous, the colloid goiter, the puberty hyperplasia, and the hyperplastic thyroid swelling of Graves' disease are non-surgical and are easily amendable to treatment other than surgery and with better results.

As a foundation for his argument Dr. Braum presents chapters on the anatomy and physiology of the thyroid, the diagnosis and classification of goiter, followed by the pathology of non-surgical goiter. Leaving the adenomatous and cystic types out of consideration, the author takes up (1) Simple Parenchymatous, (2) Colloid Goiter, (3) Puberty Hyperplasia, (4) Hyperplastic Goiter of Graves' Disease and considers them, (5) Miscellaneous pathological findings and considers them from the appropriate treatment point of view (unsurgical). The endemic simple goiter, including sporadic goiter in which iodine is the drug treatment, including a diet list. In certain cases a list of formula are given containing thyroid extract.

There are important points of differences in the types classified as non-surgical which demand special consideration and these types are taken up in order with their treatment. Many clinical cases are presented which serve to illustrate the diagnosis and the logical treatment.

Assuming that there is a growing belief that surgery must give place to other methods of treatment, it is important that the elements involved in the case must be carefully and thoroughly considered, not from an empirical view, but from scientific method of inquiry, which means that a complete revision of the subject seems necessary. When we have investigated the history of the case and have arrived at a conclusion as to the elements involved, the employment of rest, diet and iodine, with such secondary measures as seem necessary, we may avoid the dangers of surgery. For some years, influenced by the writings of Dr. Braum, we have found surgery less necessary. With this feeling we most heartily recommend Dr. Braum's book as a most valuable contribution to the study and treatment of certain forms of goiter.

MODERN METHODS OF TREATMENT

By Logan Clendening, M.D., Assistant Professor of Medicine, Lecturer on Therapeutics, Medical Department of the University of Kansas; Visiting Physician, Kansas City General Hospital; Physician to St. Luke's Hospital; Physician to St. Mary's Hospital, Kansas City, Missouri; with Chapters on Special Subjects. Drs. H. C. Anderson, J. B. Cowherd, Carl O. Richter, F. C. Neff, E. H. Skinner and E. R. De Wesse. Illustrated. C. V. Mosby Company, St. Louis, 1924. Price $9.00.

The author in writing this book had in mind the preparation of a volume for the use of students in medicine and for practitioners who desire a convenient and well balanced volume on modern treatment.

The author begins with a chapter on Rest and another chapter on Drugs. Methods of administration

for different conditions and forms of disease. Then on Biologic Therapy and Prophylaxis, followed by the use of Extracts of Ductless Glands.

The principles of Food Chemistry and Nutrition constitute a considerable part of the work. There are other chapters, as on Hydrotherapy, and several miscellaneous methods of treatment. There is an important chapter on diseases of the cardiovascular system and diseases of the kidney, especially in the treatment of these diseases.

FIRST STEPS IN ORGANIZING A HOSPITAL

An Exposition of Ideals and Principles Incident to the Inception and Organization of a Hospital. By Joseph J. Weber, Editor, The Modern Hospital. The Macmillan Company, New York, 1924.

The Macmillan Company again come before the public in another book, treating of first steps in relating to hospitals, primarily quite different from operation of hospitals. Admitting first of all the importance of small hospitals, particularly community hospitals. First a survey of the community as preliminary to construction. Ratio of beds to population. Factors to be studied. Flexibility of beds, proportion of poor people, as to wards and private rooms. Future expansion. Location of Hospital. Cost of construction and cost of maintenance. The community hospital is a citizens hospital independent of society or church control, and must be suited to the needs of a community, and controlled by community organization.

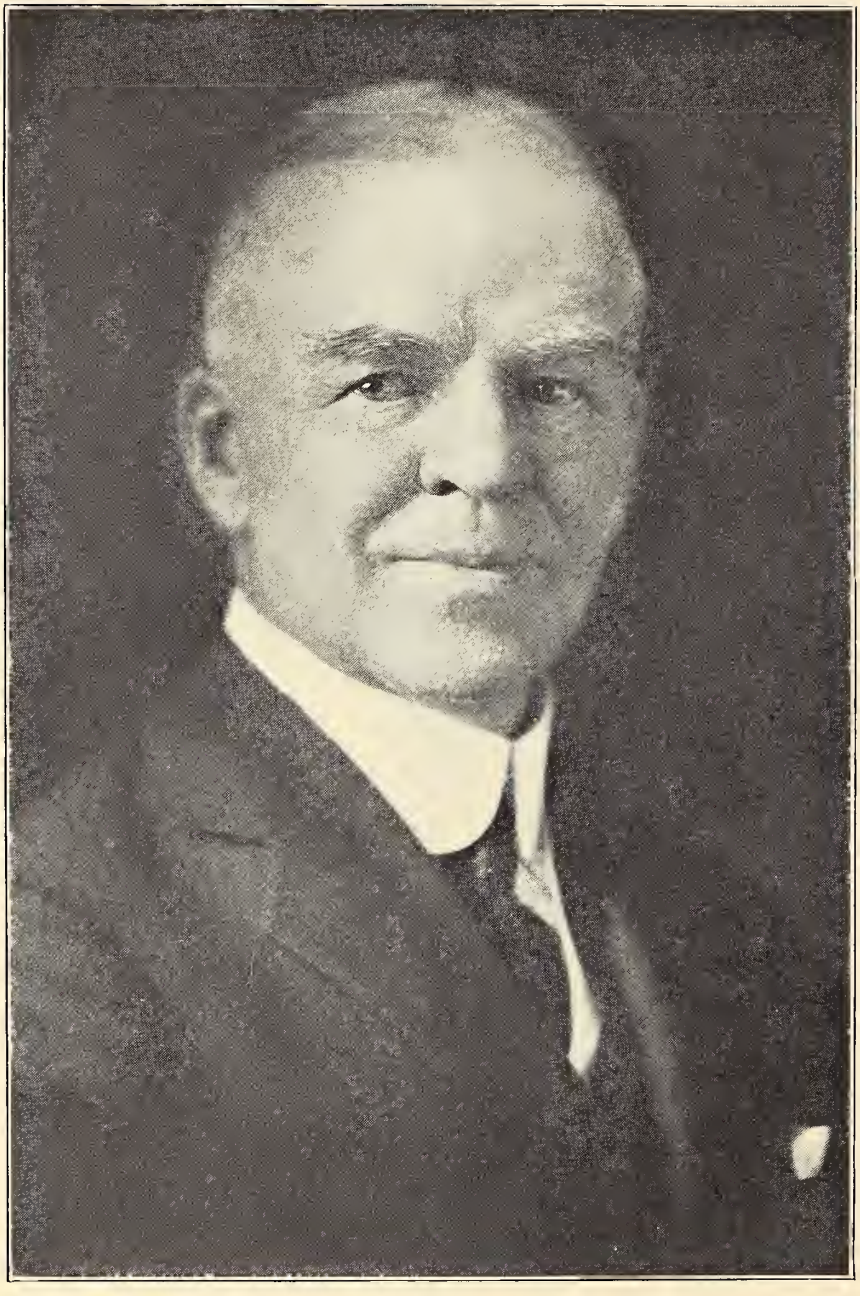
Of great importance is the selection of committees, boards of managers and superintendents. It is also of great importance in the survey, to consider the financing of the hospital construction, and to avoid the disaster which not infrequently follows from debt and failure to provide for maintenance.

There are many questions involved at the very beginning which are helpfully considered in this book. The Macmillan Company are rendering a useful service in presenting to the public and to the medical profession in the two books just published, written by men of large experience, in pointing out the way to the first steps in organizing a hospital, and hospital organization and operation.

PUBLIC HEALTH BULLETIN NO. 138—TUBERCULOSIS SURVEY OF THE ISLAND OF PORTO RICO

October 11, 1922, to April 18, 1923. By Surgeon J. G. Townsend. Government Printing Office, Washington, D. C.

To those interested in health matters in our possessions, this will be found a most interesting and valuable bulletin on the subject of tuberculosis.



Frank M. Fuller, M.D.
President
Iowa State Medical Society
1924-1925

The Journal of the Iowa State Medical Society

VOL. XV — DES MOINES, IOWA, APRIL 10, 1925 — NO. 4

IOWA STATE MEDICAL SOCIETY

SEVENTY-FOURTH ANNUAL SESSION

DES MOINES
MAY 13, 14, 15, 1925

Program

OPENING EXERCISES

Wednesday, May 13
9:00 a. m.

Call to Order by the President—
FRANK M. FULLER, M.D., Keokuk

Invocation— DR. ELMER E. HIGLEY, Ames
Pastor, Methodist Episcopal Collegiate Church

Address of Welcome for the City—
LAFE YOUNG, JR., Des Moines

Address of Welcome for the Profession—
WILLIAM W. PEARSON, M.D., Des Moines
President Polk County Medical Society

Response— JAMES F. EDWARDS, M.D., Ames

SCIENTIFIC PROGRAM

Section on Medicine—
Chairman, FREDERICK G. MURRAY, M.D., Cedar Rapids

Section on Surgery—
Chairman, PAUL A. WHITE, M.D., Davenport

Section on Ophthalmology, Otology and Rhinolaryngology—
Chairman, IRA NELSON CROW, M.D., Fairfield

Official Reporter, General Session—
MISS ADELAIDE FOLSOM, Ripon, Wisconsin

Reporter, House of Delegates—
MISS MARIE CRANK, Des Moines

Wednesday, May 13
9:15 a. m.

1. Some Observations on the Management of Cystitis—
   WILLIAM R. HORNADAY, M.D., Des Moines, *twenty minutes*
   Discussion opened by EDWARD J. HARNAGEL, M.D., Des Moines, *five minutes*
2. Aspects of Disturbed Thyroid Function—
   CONRAD R. HARKIN, M.D., Osceola, *twenty minutes*
   Discussion opened by CYREL G. FIELD, M.D., Fort Dodge, *five minutes*
3. Industrial Surgery—
   JAMES F. CHALMERS, M.D., Fort Madison, *twenty minutes*
   Discussion opened by PETER A. BENDIXEN, M.D., Davenport, *twenty minutes*
4. Interpretation of Laboratory Reports—
   DON M. GRISWOLD, M.D., Iowa City, *twenty minutes*
   Discussion opened by VERNON L. TREYNOR, M.D., Council Bluffs, *five minutes*
5. The Treatment of Compound Comminuted Fractures—
   WILLIAM C. NEWELL, M.D., Ottumwa, *twenty minutes*
   Discussion opened by CHARLES H. MCGEE, M.D., Burlington, *five minutes*

Wednesday, May 13
1:30 p. m.

Addresses of the Section Chairmen:—The Diagnostic Net

6. Medical Viewpoint—
   FREDERICK G. MURRAY, M.D., Cedar Rapids, Chairman Medical Section
7. Surgical Viewpoint—
   PAUL A. WHITE, M.D., Davenport, Chairman Surgical Section
8. Address in Medicine—
   ROBERT B. PREBLE, M.D., Professor of Medicine, Northwestern University Medical School, Chicago
9. The Early Recognition and Treatment of Arsenical Poisoning Due to the Administration of Neo-Arsphenamine—
   RAYMOND S. GROSSMAN, M.D., Marshalltown, *twenty minutes*
   Discussion opened by CLARENCE E. VAN EPPS, M.D., Iowa City, *five minutes*
10. The Hydronephrotic Kidney—
    RAYMOND L. LATCHEM, M.D., Sioux City, *twenty minutes*
11. Perinephritic Abscess—
    ROBERT H. LOTT, M.D., Carroll, *twenty minutes*
    Discussion of papers Nos. 10 and 11 opened by NATHANIEL G. ALCOCK, M.D., Iowa City, *five minutes*

3:30 p. m.

Meeting—House of Delegates
Hotel Fort Des Moines

Wednesday Evening, May 13

Social Entertainment
Banquet—Hotel Fort Des Moines
Six-thirty o'clock

Thursday, May 14
9:00 a. m.

12. Incidence of Meckels Diverticulum—
R. C. COLEMAN, M.D., Estherville, *twenty minutes*
Discussion opened by WILLIAM JEPSON, M.D., Sioux City, *five minutes*

13. Diseases of the Pancreas, with Case Reports—
ALDIS A. JOHNSON, M.D., Council Bluffs, *twenty minutes*
Discussion opened by FRED M. SMITH, M.D., Iowa City, *five minutes*

14. General Practice and its Relation to Preventive Medicine—
WALTER J. CONNELL, M.D., Dubuque, *twenty minutes*

15. Preventive Medicine in Rural Communities—
JOHN H. CHITTUM, M.D., Wapello, *twenty minutes*
Discussion of papers Nos. 14 and 15 opened by JAMES A. CRAIG, M.D., Keosauqua, *five minutes*

16. Caecal Ptosis—
KENNETH L. JOHNSON, M.D., Oskaloosa, *twenty minutes*
Discussion opened by EVAN S. EVANS, M.D., Grinnell, *five minutes*

17. Essentials in Drug Therapy—
GEORGE B. CROW, M.D., Burlington, *twenty minutes*
Discussion opened by ROBERT L. PARKER, M.D., Des Moines, *five minutes*

Thursday, May 14
1:30 p. m.

18. Report on Thirty-six Cases of Acute Poliomyelitis Treated with Rosenow's Serum—
HERBERT R. SUGG, M.D., Clinton, *twenty minutes*
Discussion opened by AUGUST R. ANNEBERG, M.D., Carroll, *five minutes*

Symposium: The Thyroid

19. Medical Considerations—
ELMER G. SENTY, M.D., Davenport, *twenty minutes*

20. Surgical Considerations—
CHARLES J. ROWAN, M.D., Iowa City, *twenty minutes*

21. Radiation Considerations—
THOMAS A. BURCHAM, M.D., Des Moines, *twenty minutes*
Discussion of paper No. 19 opened by WALTER L. BIERRING, M.D., Des Moines, *five minutes*
Discussion of paper No. 20 opened by DONALD MACRAE, M.D., Council Bluffs, *five minutes*
Discussion of paper No. 21 opened by ARTHUR W. ERSKINE, M.D., Cedar Rapids, *five minutes*

22. Address in Surgery: The Diagnosis of Brain Tumor—
WALTER E. DANDY, M.D., Associate Professor of Clinical Surgery, Johns Hopkins University, Baltimore

23. The Factor of Intra-Cranial Pressure in Head Injuries—
FRANCIS R. HOLBROOK, M.D., Des Moines, *twenty minutes*
Discussion opened by FRANK A. ELY, M.D., Des Moines, *five minutes*

24. Rabies, with Report of a Case Terminating Fatally After Pasteur Treatment—
T. A. MORAN, M.D., Melrose, *twenty minutes*
Discussion opened by SAMUEL T. GRAY, M.D., Albia, *five minutes*

Thursday Evening, May 14
8:00 p. m.

25. Address: Some Types of Intraocular Tuberculosis—
THOMAS B. HOLLOWAY, M.D., Professor of Ophthalmology, School of Medicine of the University of Pennsylvania, Philadelphia, Guest of Section on Ophthalmology, Otology and Rhinolaryngology

26. President's Address—
FRANK M. FULLER, M.D., Keokuk

Buffet Luncheon and Smoker following Scientific Program

Friday, May 15
9:00 a. m.

27. Conservation of the Uterus in Prolapse—
BUSH HOUSTON, M.D., Mason City, *twenty minutes*
Discussion opened by JOHN C. ROCKAFELLOW, M.D., Des Moines, *five minutes*

28. Cooperation in the Management of Peptic Ulcer—
WESLEY E. GATEWOOD, M.D., Iowa City, *twenty minutes*
Discussion opened by WILLIAM H. RENDLEMAN, M.D., Davenport, *five minutes*

29. Coeliac Disease—
FRED MOORE, M.D., Des Moines, *twenty minutes*
Discussion opened by PHILIP C. JEANS, M.D., Iowa, City, *five minutes*

30. The Physician's Part in the Legislation Program—
W. C. WOODWARD, M.D., LL.M., Executive Secretary, Bureau of Legal Medicine and Legislation, American Medical Association, Chicago

31. Ectopic Pregnancy—
JOHN W. BILLINGSLEY, M.D., Newton, *twenty minutes*
Discussion opened by ELBERT E. MUNGER, M.D., Spencer, *five minutes*

32. Report of the Transactions of the House of Delegates—
TOM B. THROCKMORTON, M.D., Secretary, Des Moines

OPHTHALMOLOGY, OTOLOGY AND RHINOLARYNGOLOGY

Meeting Place—Hotel Fort Des Moines
Chairman—Ira Nelson Crow, M.D., Fairfield

Thursday, May 14
9:00 a. m.

1. Chairman's Address:—
IRA NELSON CROW, M.D., Fairfield, *twenty minutes*

2. The Use of Acri-violet in Infections of the Ear—
GEO. J. PEARSON, M.D., Burlington, *twenty minutes*
Discussion opened by WILLIAM H. JOHNSTON, M.D., Muscatine, *five minutes*

3. Nonoperative Treatment of Sinusitis—
FRED W. BAILEY, M.D., Cedar Rapids, *twenty minutes*
Discussion opened by ROYAL F. FRENCH, M.D., Marshalltown, *five minutes*

4. Perforations of Frontal Sinus Wall in Chronic Empyema—
   Lloyd G. Howard, M.D., Council Bluffs, *twenty minutes*
   Discussion opened by Sumner B. Chase, M.D., Fort Dodge, *five minutes*

5. End Results in Submucous Resection—
   Charlie E. Chenoweth, M.D., Mason City, *twenty minutes*
   Discussion opened by John K. von Lackum, M.D., Cedar Rapids, *five minutes*

6. Foreign Bodies in the Air and Food Passages—A Report of Forty-one Cases—
   (Lantern Demonstration)
   Thomas R. Gittens, M.D., Sioux City, *twenty minutes*
   Discussion opened by Wayne J. Foster, M.D., Cedar Rapids, *five minutes*

Thursday, May 14
1:30 p. m.

7. Laryngeal Tuberculosis—
   Cecil C. Jones, M.D., Des Moines, *twenty minutes*
   Discussion opened by James A. Downing, M.D., Des Moines, *five minutes*

8. A Study of the Nervous System with a View to Understanding Otitic Pain—
   Chas. B. Taylor, M.D., Ottumwa, *twenty minutes*
   Discussion opened by Harvey B. Gratiot, M.D., Dubuque, *five minutes*

9. Treatment of Chronic Otitic Brain Abscess—
   (Lantern Demonstration)
   Lee W. Dean, M.D., Iowa City, *twenty minutes*
   Discussion opened by William W. Pearson, M.D., Des Moines, *five minutes*

10. A Treatment for Fistula Following Lacrimal Sac Extirpation—
    Sidney G. Hands, M.D., Davenport, *twenty minutes*
    Discussion opened by Elmer P. Weih, M.D., Clinton, *five minutes*

11. Intracapsular Cataract Extraction by the Barraquer Method—
    Otis Wolfe, M.D., Marshalltown, *twenty minutes*
    Discussion opened by Gordon F. Harkness, M.D., Davenport, *five minutes*

12. High Myopia as a Degenerative Process—
    Harold J. McCoy, M.D., Des Moines, *twenty minutes*
    Discussion opened by Chas. C. Walker, M.D., Des Moines, *five minutes*

Thomas B. Holloway, M.D., Professor of Ophthalmology, School of Medicine University of Pennsylvania, Philadelphia will address the General Session Thursday Evening on: Some Types of Intra-Ocular Tuberculosis

TAKE DUE AND TIMELY NOTICE

Your 1925 membership card will be your mark of eligibility to register at the Seventy-Fourth Annual Session, Des Moines, May 13, 14 and 15. Have you paid your 1925 dues to your local secretary?

MEETING PLACES

Headquarters—Hotel Fort Des Moines, Tenth and Walnut Streets
General Meetings—Hotel Fort Des Moines, Ball Room
House of Delegates—Hotel Fort Des Moines, Eleventh Floor
Eye and Ear Section—Hotel Fort Des Moines, Oak Dining Room, Thursday
Registration and Exhibits—Hotel Fort Des Moines, Mezzanine Floor
Headquarters for Ladies—Hotel Fort Des Moines

Rules for Papers and Discussions

"No address or paper before the Society, except those of the President and Guests, shall occupy more than twenty minutes in its delivery; and no member shall speak longer than five minutes nor more than once on any subject." "All papers read before the Society shall be the property of the Society." (Excerpts from By-laws.)

Each paper should be typewritten, and deposited with the Secretary when read; if this is not done, it will not be published.

On rising to discuss a paper, the speaker will please come forward and announce his name and address plainly.

Registration

Do not fail to Register.

Please bring your membership card for presentation at Registration Desk.

IOWA STATE MEDICAL SOCIETY OFFICERS AND COMMITTEES 1924-1925

President	F. M. Fuller, Keokuk
President-Elect	S. A. Spilman, Ottumwa
First Vice-President	W. H. Rendleman, Davenport
Second Vice-President	T. U. McManus, Waterloo
Secretary	Tom B. Throckmorton, Des Moines
Treasurer	A. C. Page, Des Moines

COUNCILORS

	Term Expires
First District—R. S. Reimers, Ft. Madison	1925
Second District—D. N. Loose, Maquoketa	1927
Third District—A. G. Shellito, Independence	1926
Fourth District—Paul E. Gardner, Chairman	1929
Fifth District—George E. Crawford, Cedar Rapids	1928
Sixth District—S. T. Gray, Albia	1928
Seventh District—Channing G. Smith, Granger	1929
Eighth District—F. A. Bowman, Leon	1929
Ninth District—H. B. Jennings, Council Bluffs	1927
Tenth District—W. W. Beam, Rolfe	1926
Eleventh District—G. C. Moorhead, Ida Grove, Secretary	1925

TRUSTEES

J. W. Cokenower, Des Moines	1925
W. B. Small, Waterloo	1927
T. E. Powers, Clarinda	1926

DELEGATES TO A. M. A

Donald Macrae, Jr., Council Bluffs	1926
B. L. Eiker, Leon	1926
M. N. Voldeng, Woodward	1925

ALTERNATE DELEGATES

D. N. Loose, Maquoketa 1926
J. F. Herrick, Ottumwa 1926
J. W. Harrison, Guthrie Center 1925

COMMITTEES

Medico-Legal

D. S. Fairchild, Sr., Clinton 1927
H. B. Jennings, Council Bluffs 1925
W. B. Small, Waterloo 1926

Scientific Work

Frank M. Fuller ..... Keokuk
Tom B. Throckmorton ..... Des Moines
A. C. Page ..... Des Moines

Public Policy and Legislation

W. W. Pearson ..... Des Moines
M. J. Kenefick ..... Algona
D. J. Glomset ..... Des Moines
Frank M. Fuller ..... Keokuk
Tom B. Throckmorton ..... Des Moines

Constitution and By-Laws

V. L. Treynor ..... Council Bluffs
C. B. Taylor ..... Ottumwa
Tom B. Throckmorton ..... Des Moines

Publication

D. S. Fairchild, Sr. ..... Clinton
W. L. Bierring ..... Des Moines
C. J. Rowan ..... Iowa City

Finance

E. C. McClure ..... Bussey
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N. Schilling ..... New Hampton

Arrangements

Frank M. Fuller ..... Keokuk
Tom B. Throckmorton ..... Des Moines
A. C. Page ..... Des Moines
Willard J. Fenton ..... Des Moines
L. K. Meredith ..... Des Moines

Medical Library

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W. L. Bierring ..... Des Moines
O. J. Fay ..... Des Moines
G. H. Hill ..... Des Moines
C. E. Holloway ..... Des Moines

Field Activities Committee

Iowa State Med. Society ..... W. L. Bierring, Chrm., Des Moines
Iowa State Med. Society ..... President-Elect S. A. Spilman, Ottumwa
Iowa State Medical Society ..... B. L. Eiker, Leon
Iowa State Board of Health ..... R. P. Fagan, Des Moines
State University Med. College Faculty ..... N. G. Alcock, Iowa City
State Conference of Social Work ..... James F. Edwards, Ames
Iowa Tuberculosis Ass'n ..... Mr. T. J. Edmonds, Sec'y, Des Moines
Director ..... F. E. Sampson, Creston
Advisory Secretary ..... Tom B. Throckmorton, Des Moines

ENTERTAINMENT

Wednesday, May 13

Luncheon for Visiting Ladies at Wakonda Club. One O'clock. Ladies Meet at the Hotel Fort Des Moines for Transportation

Banquet, Hotel Fort Des Moines, physicians, their wives and guests, Six-thirty O'clock

Thursday, May 14

Matinee for Visiting Ladies, Three O'clock

Bridge Party, Visiting Ladies, Oak Room Hotel Fort Des Moines, Eight O'clock

Buffet Luncheon and Smoker following Scientific Program

SCIENTIFIC EXHIBIT

Standard Chemical Co., Des Moines, Surgical Instruments, Supplies, Chemicals. Booth No. 1 and 2.

Nujol Laboratories, Standard Oil Co., New Jersey. Booth No. 3.

The Medical Protective Company, Fort Wayne, Indiana. Booth No. 4.

Magnuson X-Ray Co., Omaha and Des Moines, X-Ray Apparatus and Intensifying Screens. Booth No. 6.

Riggs Optical Co., Omaha, Optical Goods, Surgical Instruments. Booth No. 7.

Standard X-Ray Co., Des Moines, Roentgen, Electric Medical Therapeutic Apparatus. Booth No. 8.

Victor X-Ray Co., Des Moines, X-Ray Equipment, Physiotherapy Apparatus. Booth No. 9.

The Denver Chemical Mfg. Co., Denver, Antiphlogistine. Booth No. 10.

Mead Johnson & Company, Evansville, Indiana. Booth No. 11.

O. Carliczek & Co., Chicago, Physicians' and Laboratory Supplies, Urological Instruments. Booth No. 12.

Western X-Ray Co., Des Moines and Omaha. Booth No. 13.

Lederle Antitoxin Laboratories, New York City. Booth No. 14.

The Chas. H. Phillips Chemical Co., New York City. Booth No. 15.

Radium Chemical Co., Pittsburg, Demonstration Use of Radium and Apparatus for Administration. Booth No. 17.

Horlick's Malted Milk, Racine, Horlick's Milk Products. Booth No. 18.

Deshell Laboratories Inc., Chicago, Petrolagar. Booth No. 19.

American Optical Co., (Merry Optical Co. Division), Des Moines, Optical Goods & Surgical Instruments. Booth No. 20.

Engeln Electric Co., Des Moines, Physiotherapy Equipment and X-Ray Apparatus. Booth No. 21.

Geneva Optical Co., Des Moines, Optical Goods and Specialties. Booth No. 22.

Huston Bros. Co., Chicago, Surgical and Electrical Instruments. Booth No. 23.

Iowa State Medical Library.

Iowa State Board of Health.

STATE SOCIETY IOWA MEDICAL WOMEN

TWENTY-EIGHTH ANNUAL MEETING DES MOINES

Tuesday, May 12, 1925

Headquarters—Hotel Savery Lounge

Morning Session
9:00 a. m.

Called to Order by President—
JANE MCINTOSH WRIGHT, M.D., Clear Lake

Invocation—
ETHEL VIRTUE, Secretary, Y. W. C. A., Des Moines

Greeting—
MISS CARRIE M. BELL, Secretary Department Women's Affairs, Chamber of Commerce, Des Moines

Appointment of Committees—

Secure Your Hotel Reservations Now—For Hotels See Advertising Pages VI, IX, XIV

Medical Clinic

Presentation of Cases—
Nelle S. Noble, M.D., Des Moines
Jennie M. Coleman, M.D., Des Moines
Margaret H. Nelson, M.D., Des Moines

President's Address—Pioneers in Preventive Medicine

11:30 a. m.

Annual Business Meeting

12:30 p. m.

Luncheon, Younker's Tea Room
(Guests of Des Moines Chamber of Commerce)

Afternoon Session
2:00 p. m.

Scientific Papers

The Diagnosis and Treatment of Asthma and Hay-Fever— Zella White Stewart, M.D., Iowa City
Discussion lead by Grace Doane, M.D.

Address— By a Guest of the Society

Report on Two Cases of Toxemia of Pregnancy—
Emma Jewel Neal, M.D., Cedar Rapids
Discussion lead by Eppie McCrea, M.D.

Psychiatry and the General Practitioner—
Pauline M. Leader, M.D., Clarinda
Discussion lead by Julia F. Hill, M.D.

Report of Committee on President's Address—

6:30 p. m.

Dinner at Mrs. Lemley's Tea Room

OFFICERS

President.....Jane McIntosh Wright, M.D., Clear Lake
Vice-President.....Grace Doane, M.D., Des Moines
Secretary.....Elinor Hutchinson, M.D., Rockwell City
Treasurer.....Helen Johnston, M.D., Des Moines

COMMITTEES

Credentials
Jeannette F. Throckmorton — Pauline M. Leader
Jennie M. Coleman

Ethics
Julia F. Hill — Sophie Hinze Scott
Mary L. Tinley

Publication
Zella White Stewart — Harriett S. Hamilton
Julia F. Hill

Federation
Mae H. Habenicht — Margaret Mills
Emma M. Ackerman

Constitution and By-Laws
Josephine W. Rust — Zenella Morris
Eppie McCrea

Arrangements
Grace Doane — Alice Humphrey Hatch
Nelle S. Noble

Districts
Rose Butterfield — Bertha Greer
Emma Jewel Neal — Emma Ackerman

THE DES MOINES SESSION

The Seventy-fourth Annual Session of the Iowa State Medical Society will convene in the Capital City for three days, beginning May 13. During the the past nine years, the Society has held its meetings in Des Moines with two exceptions, the Fort Dodge Session in 1918 and the Ottumwa Session in 1923. The ready access to Des Moines from all parts of the state makes the city an ideal place for the yearly meetings, and from year to year the attendance increases as greater interest in matters of a medical nature becomes more manifest. That the Iowa profession in general is awake to its responsibilities goes without saying, and that it is truly interested in the scientific side of its work is well known. No doubt the House of Delegates, among whose several duties it is to select a meeting place, considered just such factors in doing Des Moines the honor in selecting the city as the meeting place on these several occasions, thus affording ample opportunity for all who wished to come to do so at the least inconvenience to themselves and to assure them hospitable treatment during their sojourn.

Program

The Official Program appears in this, the current issue of the Journal. The committee, upon whom falls the responsibility for the preparation of the program, has, with the help of the Section Chairmen, endeavored to bring together a group of papers, to be presented by members of the Society and men of national and old world repute, which it is hoped will prove to be of unusual interest and of practical value to those in attendance. While it is true, the majority, if not all of the papers presented before the Society, are ultimately published in the Journal, and thus reach those who are not present at the time of their delivery, still it is generally conceded that the inspiration one gets from the essayist at the time his paper is read is far more than that which comes from reading the printed article; hence the Program Committee would especially direct the attention of the reader to the character and type of papers to be presented and urge him to make an extra effort to be in attendance at the Session and to listen to those essayists whose subjects are of attractive interest and to take part in the discussion of the same. In this way, the Society will have an enthusiastic crowd of listeners which will in turn prove to be an inspiration to those who have so carefully wrought with pen that their productions might savor of the best now known in scientific medicine.

The Address in Medicine will be delivered by Dr. Robert B. Preble of Chicago. Doctor Preble is the senior Professor of Medicine in the Northwestern University Medical School, having been first appointed in 1895. He is a Director in the American Heart Association, and has been specially active in promoting the aims and purposes of this organization. He was commissioned Major M. R. C. in April, 1917, and discharged with the rank of Lieutenant

Colonel in 1919. He served as medical chief of the hospital center at Mars sur Alliers, France. For his services he received an American citation and the French Legion of Honor. His work on pneumonia and pneumococcus infections was published in 1905, and he has written extensively since on different phases of this subject, particularly as related to changes in the circulation.

The Address in Surgery will be delivered by Doctor Walter E. Dandy, Associate Professor of Clinical Surgery in the Johns Hopkins University, Medical Department, Baltimore. Doctor Dandy, although a comparatively young man, has made tremendous strides in his professional work, and his original investigation and experimentation in the field of ventriculography has brought about many changes concerning the rather heretofore meager knowledge surrounding the nature of cerebral neoplasms and their diagnosis.

Doctor Thomas B. Holloway will deliver the Address for the Section on Ophthalmology, Otology and Rhinolaryngology. Long continued service in various hospitals in the great medical center, Philadelphia, as a clinician and teacher, as well as his association with the distinguished and far-famed authority on his specialty—Professor George E. de Schweinitz—preeminently fits this guest for the task he has so cheerfully and cordially accepted to perform. Those who were so fortunate as to hear Professor de Schweinitz's classical presentation before the Society some years ago will recall the rare literary treat which was theirs; and it may be stated without fear of contradiction that just as rare a treat awaits those who are fortunate enough to hear his protege—Doctor Holloway.

Through special arrangements with the home office of the American Medical Association, the services of Doctor W. C. Woodward, Executive Secretary of the Bureau of Legal Medicine and Legislation, were obtained. Doctor Woodward, who has has been of invaluable help to the Association for years, is well qualified for this particular line of work, being not alone a physician, but a lawyer as well; and his active participation in the program is a valuable asset not heretofore had in Iowa medicine.

Headquarters and Meeting Place

As has been customary for the past several years, the Hotel Fort Des Moines, has been selected by the Arrangements Committee as the General Headquarters and Meeting Place of all the scientific assemblies, the special meeting place of the Eye, Ear, Nose and Throat Section, the House of Delegates and the Scientific Exhibit. The Hotel Management has assured the Committee of its appreciation in the making of its selection, and will endeavor to the best of its ability to make the attending physicians, their guests and friends, comfortable during their stay.

Commercial and Scientific Exhibits

From year to year it has been a well recognized fact that much good, of a mutual character, comes from frequent contact between physicians and those firms who supply them with their professional necessities. Recognizing this mutual benefit, reputable firms are encouraged to send representatives each year to be in attendance at the time of the Annual Sessions thus enabling the members of the State Society to mingle with them and to have an opportunity of gaining first-hand such information as desired concerning the various commodities of special interest and use to physicians in general. Accordingly, space has been reserved in the rooms adjoining the meeting place of the General Sessions for reputable and reliable firms, and it is hoped that the renewal of acquaintanceship between exhibiters and physicians will be of mutual and profitable interest to both.

Hotel Reservation

To those who are accustomed to making the annual pilgrimage to attend the Annual Sessions, no word of warning need be sounded concerning the advisability of making hotel reservations in advance. To be without a sleeping place is usually no one's fault but the fellow who finds he has no place to lay his head. Physicians are probably no more prone to procrastinate than are other professional members belonging to the genus homo; nevertheless, they are notorious according to hotel managers for doing their share of procrastinating when it comes to making reservations. Just surprise the local hostelries by sending in for such reservations as you may need, and in so doing save annoyance and disappointment which so often results from neglecting this important item.

Registration Cards

For some years past, the growing necessity for a more speedy registration of members in attendance at the Annual Sessions has presented itself to those entrusted with this important duty. Members who attend the meetings of the American Medical Association know full well the rapidity and ease with which they are handled at the registration bureau, providing they present their membership cards. Kindly bear this point in mind, and bring your card showing your membership in the Iowa State Medical Society for the current year, and you will help yourself, and also those at the registration desk, in facilitating matters of interest to you and to those waiting to register. Don't forget to bring your card. Remember it cost you $5; so why be ashamed to bring it?

Tom B. Throckmorton, M.D., Sec'y.

ANNOUNCEMENT

The Des Moines Academy of Ophthalmology and Oto-Laryngology will entertain the Head Specialties Section at dinner May 14, 6 p. m., at the Des Moines Club.

Cecil C. Jones, M.D., Sec'y.

(Through the courtesy of the Editor, the following paper is republished, the same having been first presented at the annual meeting of the Iowa State Medical Society, Creston, April 17, 18, 19, 1895. The author has added a few comments, appropriate with the passing of thirty years.)

THE MODERN TREATMENT OF DIPHTHERIA WITH DEMONSTRATION OF METHOD OF PREPARING ANTITOXIN

Walter L. Bierring, M.D., Iowa City
Professor of Pathology and Bacteriology, State University of Iowa

Among the entire list of infectious diseases there is perhaps not one more dreaded by the average physician or one in which a favorable response to the treatment excites a more grateful appreciation than that of diphtheria. It is not to be wondered at that any marked advance in its therapy should arouse the attention of the medical world.

The development of the modern treatment of diphtheria is but the result of the progress of our knowledge of the disease and its etiology. The time is no doubt fresh in the memory of many a colleague when diphtheria was one of the most vague and indefinite of diseases, when a positive diagnosis was an impossibility and uncertain therapy wandered from one remedy to another with no degree of reliability.

Compare this with the status of today when we have a disease clearly defined, an etiology definitely established, with a ready means of recognition and a therapy certainly more definite and scientific. As this was all brought about during the last decade, the rapid advance that has marked our knowledge is plainly apparent. Bacteriological research has played a role in this development and probably demonstrated in this particular more than in any other way that it has risen above the domain of purely theoretical investigation and become indelibly linked with practical advance in medicine.

The etiological significance of the Klebs-Loeffler bacillus has been fully established. The fact that in post-mortem examinations of diphtheria cases, and in those experimentally produced in the lower animal, the bacilli were only found present at the point of inoculation in the pseudo membranes, and not in the blood or the internal organs, led to the conclusion that the systemic disturbances which accompany the disease were not due to the direct presence of the bacilli themselves, but more to the absorption of some toxic substance generated by the bacilli at the point of inoculation.

This toxic substance or toxin of diphtheria is likewise produced in artificial culture media, especially in cultures prepared in bouillon, from which it can be separated by means of filtration through a Pasteur-Chamberland filter, the bacilli

DR. WALTER L. BIERRING

remaining in the filter and the filtrate containing a large quantity of the toxin.

The characteristics of the diphtheria toxin were first published in the classic contribution by Roux and Yersin in 1888. It is classed with the toxalbumins and its pathogenic characteristics are similar to those of the Klebs-Loeffler bacillus. Inoculation experiments have shown that it is capable of producing the typical changes of the disease, even to the extent of the post-diphtheritic paralysis, without the formation of a false membrane. This more thoroughly establishes the etiological connection between the Klebs-Loeffler bacillus and the disease, as both by inoculation with the bacilli themselves and the toxins generated by them in an albuminous medium, the typical changes can be produced in the lower ani-

mal. In the resulting study of this toxin, it was developed that its attenuation is possible by various reagents. By successive inoculations of gradually increasing doses of strength of the toxin, an animal could be rendered accustomed to the same, i. e., be rendered immune against its action, and also against any following inoculation with the Klebs-Loeffler bacillus; furthermore the blood of an animal thus immunized by the use of the diphtheria toxin contains antitoxic principles, and this, when introduced into another animal body that has previously been inoculated with the toxin, has the property of antagonizing the same, or preventing its action. It was the researches in this direction by Behring and Kitasato, of Berlin, on the properties of the serum from animals rendered immune against diphtheria and tetanus, and published in 1890, that gave to the serum therapy its advent into medicine and formed the foundation of our present treatment of diphtheria—one that promises to be attended by such beneficial results.

In considering the modern treatment of diphtheria, the use of anti-diphtheritic serum, or antitoxin will certainly form an important part of the same.

Formerly the attention of the physician was attracted mainly towards the local lesion, devising some means to remove or dissolve the false membranes or prevent their formation; later, when a better explanation was offered for the systemic disturbance—stimulants and supportive treatment became an important part of the therapy, yet with all our antiseptic gargles and sprays, combined with internal treatment, the rate of mortality tended to be greater than the percentage of cures. Hence, when the therapeutical value of the anti-diphtheritic serum was announced, it struck a responsive chord in the medical world that bordered on enthusiasm, although the memory of the unfortunate fate of Koch's tuberculin rather interfered with its adoption for a time.

The thorough investigations regarding the preventive and curative properties of antitoxin in the lower animals have received a most marked corroboration in its use in the human person. The first results being published by Ehrlich, Wassermann and Kossel in May, 1894, of the treatment of 225 cases in the Berlin hospitals, with a mortality rate of 24.5 per cent.

Then followed the report of Katz and Aronson of 178 cases with a death rate of 12.5 per cent, and following these came the report of 300 cases treated at the Hospital des Enfants Malades, in Paris, by Roux and Martin of Pasteur Institute, during the time from February 1 to July 24, 1894, with a mortality rate of 25 per cent in comparison with the average rate of 51.71 per cent of the four preceding years. The last named cases are of increased interest to me on account of having enjoyed the privilege of being a personal observer of a great number of the same. Another interesting feature about them being the constant comparison that could be made with the Hospital Trousseau in which the antitoxin was not used, the statistics for the corresponding time showing a record of 520 cases with a mortality rate of 60 per cent, demonstrating at the same time that the epidemic was not of a benign character.

Since then it has come into more general use in the hospitals of Europe, and to a limited extent in our eastern hospitals with a marked lowering of the death rate. In private practice it has also withstood the test. The rather high expectations that were entertained for it has been to a great extent at least fulfilled. Thus far we have a record of its use in about 2300 authenticated cases, with a lowering in the mortality rate of at least 50 per cent over corresponding time of previous years.

I should like to report the result of its use in a certain number of cases in eastern Iowa. Davenport can furnish a case of diphtheria during any month of the year, and the cases are generally of a virulent character.

Through the kindness of Dr. H. Braunlich I am able to report the results of its use in sixteen cases treated by him, five of which in consultation with Dr. Henry Matthey, the patients ranging in age from thirteen months to thirty-one years, comprising twelve cases of pharyngeal, two of nasopharyngeal, one of pharyngeal with extension into larynx, and one of pure laryngeal diphtheria. Antitoxin was applied in the first case (and this was also its first application in eastern Iowa) on February 12, 1895, only one dose of Behring's serum No. 2, being applied, on account of the limited supply, yet the improvement was very noticeable from this one injection, and although a fatal prognosis was determined upon by both attending physicians at the first visit, the case was discharged as cured on the ninth day. In twelve cases the Aronson serum was used in doses of 5 c.c.m., and in the remaining four the Behring No. 2 was injected in doses of 10 c.c.m. Fourteen cases received only one injection, one received two, and one case requiring three injections, the injections being made from the first to the third day of the disease, the point for injection in all but one being in the thigh, the remaining one in the subcutaneous tissue of the breast. In the sixteen cases there was one death,

this occurring in the case of laryngeal diphtheria, which was also complicated by catarrhal pneumonia, death occurring about eight hours after tracheotomy was performed. In one case a slight urticaria occurred at the point of inoculation, but disappeared after a few days. In all these cases as far as it was possible to observe, the recovery was very rapid after the membrane had disappeared; that is, the patient returned to his natural condition in a very short time, and the disease was not followed by any sequelæ. Doctor Braunlich has at present two more cases under treatment, the result of which I can not give as yet.

I have also received from Dr. Strohbehn, of the same city, a report of its use in one case of pharyngeal diphtheria with extension into the larynx, with a favorable result; one injection of 5 c.c., of the Aronson serum being sufficient.

I have the indirect report of two other cases of Dr. Henry Matthey and three cases of Dr. Bowman, one of the latter requiring intubation, recovery taking place in all cases.

Antitoxin was used for the first time in Iowa City on March 2nd, in a case aged seventeen years, of Dr. M. B. Cochran, in which I was called in consultation for the purpose of giving antitoxin. It was a very marked case of nasopharyngeal diphtheria—membrane covering uvula, tonsils, posterior wall of pharynx and posterior nares, with extensive glandular enlargements. The serum in this case was from a bottle presented to me by Dr. Roux of the Pasteur Institute in Paris, and was given in doses of 20 c.c. in all, 55 c.c. being used. The throat was clear on the sixth day and recovery took place without any sequelæ except a slight erythema at the point of injection, which remained but a short time, the inoculation in this case being made into the subcutaneous tissue of the abdomen. Antitoxin has subsequently been used by Dr. Murphy in four cases, and by Dr. Mullin in one case with very beneficial results.

In the twenty-seven cases but one death occurred, which favorable results certainly demonstrate that it is a remedy that can be successfully applied in private practice as in the hospital ward.

During the last three and a half months the preparation of antitoxin has been in progress at the State University, with the cooperation of my assistant, Mr. L. W. Dean, and Dr. Shrader of Iowa City, who very kindly furnished the horse for the experiment, and I am able to present herewith the first sample of our production. The toxins necessary for the immunization have been produced in the laboratory, bouillon being used as a culture medium contained in the so-called Fernbach flask, which admits the passing across the surface of a constant current of moist air which greatly enhances the production of the toxins. After a three weeks' growth the cultures are filtered through a Pasteur-Chamberland filter, the filtrate of which you see a sample here—then containing the toxins. The strength of toxin used in this case being that 1 c.c. of the toxin had the property of producing death in a rabbit of five pounds weight in forty-eight hours.

Injections into the horse were begun on December 15, 1894, the first dose being ½ c.c. This was gradually increased, averaging about three injections a week, and the last injection was made on April 4, 1895, when 200 c.c. of the diphtheria toxin was introduced, illustrating to what an extent an animal can be rendered accustomed to this poison. The above being an evidence of an existing immunity on the part of the animal, the first tapping of her blood was made on April 9, 1895, when two quarts of blood were withdrawn from the jugular vein without seeming in the least to inconvenience the animal. The flask of this blood is represented here showing the contracted clot in the center, surrounded by the clear amber colored serum, some of which has been drawn off into these bottles and forms the so-called diphtheria antitoxin. Our experiments regarding its strength from our progress thus far, we may say that its strength will represent about 300 to 400 immunizing units, thus being somewhat weaker than the Behring article No. 1. This will restrict this sample more to immunizing purposes rather than being of therapeutic value, but by keeping up the injections of increasingly large doses for another month we will obtain a serum of considerable therapeutic value. It is necessary to continually keep up the injections with the toxin, or the antitoxin properties contained in the blood will begin to disappear, and the more resisting an animal becomes to the action of the toxin, the greater is the strength of the antitoxin that is obtained from its blood serum.

Experience in both the lower animals and the human person has demonstrated that the sooner the antitoxin is applied in a case of diphtheria the more marked is its effect, so that the need of making an early diagnosis is only too evident.

The manner of making a scientific diagnosis is much less difficult than is generally supposed. Aside from the microscopical examination the culture diagnosis is quite simple, since we have in the use of sterilized blood serum a medium by which a differentiation from other organisms is readily made. By obtaining a small piece of false membrane or secretion from the inflamed

part, upon a platinum wire needle, drawing the same several times across the culture medium upon three successive tubes, for the purpose of inoculation, these after being kept at body temperature for sixteen to twenty hours will show a growth of the Klebs-Loeffler bacillus in the appearance of very minute dots upon the surface of the medium; the affinity that the bacillus diphtheria has for culture media rich in albumen, causes it to appear from twelve to twenty-four hours before any of the other organisms that may be present in the material used for inoculation. By means of this culture method (and I hope some central depot may be established where the media can be obtained at a moderate figure) and observing the simple rules of bacteriological technique a positive diagnosis can be made within twenty-four hours after receiving the membrane for examination.

Although the antitoxin appears to have a specific action in diphtheria it should not be relied upon as the only form of treatment. The use of stimulants and supportive treatment is always indicated, while the application of mild antiseptic solutions to the affected parts in the form of sprays or gargles for the purpose of cleansing and removing any detached membranes, preventing decomposition of the same, is certainly very beneficial.

Thus by this combined therapy, with injections of antitoxin of suitable strength, made as early as possible in the course of the disease, we have a method of treatment which has already been productive of such happy results. With increased experience and knowledge of its characteristics, we have every reason to hope it will offer us a means of combating this dreaded disease much more effectually than it has been possible heretofore. Eventually it may prove to be the salvation of the younger race.

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At this meeting Dr. F. W. Porterfield of Atlantic, Iowa, also presented a paper entitled "The Treatment of Diphtheria with Antitoxin Serum", reporting seven cases with two deaths.

In the closing discussion the following is noted:

"Dr. Bierring—In regard to the antitoxin of our preparation, I beg to assure the physicians of Iowa that it will be used in very large doses on myself before being given out. I should like to see the state take hold of the production of antitoxin. I should be willing to offer myself to prepare the same with no idea at all of deriving any personal benefit from it. I should like to get enough of an appropriation so that the antitoxin could be procured by the physicians of Iowa at such a cost as will simply pay for the bottling and the slight expense of preparing the same. If it might be properly presented to the Board of Regents of the State University it might influence them to appropriate an amount so that the profession of Iowa could get the remedy at a nominal cost and which they could feel sure had been thoroughly tested before being sent out."

In the general session on the next day, the following motion was introduced by Dr. E. Luther Stevens of Des Moines—"That a committee of three members be appointed by the chair to present a memorial to the Board of Regents at Iowa State University to ask an appropriation for the purpose of enabling an ample supply of antitoxin of diphtheria to be made at the State University for the use of the medical profession of the state". Motion was lost.

It is interesting to contemplate the change in the subsequent events if this motion had been favorably considered.

The preparation of diphtheria antitoxin at the University Laboratory in Iowa City in 1895 and 1896 was the first produced in this country outside of New York City. The Iowa City product was used in over 300 cases of diphtheria with no untoward serum reaction, which was really remarkable when viewed in the light of later results.

Mr. Lee Wallace Dean (M.D., 1896) was the principal associate in this work, and his research studies on diphtheria toxin and antitoxin formed the basis of his thesis for the degree of Master of Science granted by the University of Iowa in 1896.

During the thirty years that have passed since the above article was written, the technique of culture diagnosis has remained practically unchanged. In 1913 the Schick reaction or immunity test was introduced. This is now recognized as a valuable aid in the diagnosis of diphtheria, as a negative reaction is almost certain evidence that a diphtheritic infection is absent. In a well person a positive reaction indicates an absence of natural or acquired immunity to diphtheria.

A great change has developed in the dosage of diphtheria antitoxin and its mode of administration. Where a dosage of 1,000 to 2,000 units was regarded as sufficient thirty years ago, at the present time from 10,000 to 20,000 units are given in an ordinary case, while in a malignant

case from 60,000 to 100,000 units are often administered.

Antitoxin is now administered in three ways—intravenously, intramuscularly and subcutaneously. It has been shown by Park that antitoxin diffuses ten times more rapidly when given intravenously than when given subcutaneously, and four times more rapidly when given intramuscularly than when given subcutaneously. In all laryngeal and other severe cases the intravenous method is the one clearly indicated.

By comparison it may be said that the fundamental principles of the antitoxin treatment of diphtheria as established thirty years ago hold good today.

Bankers Trust Building, Des Moines, Iowa.

MEDICINE AND THE FUNDAMENTAL SCIENCES*

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What Is a University?

Universities have in their long history had many forms and played many parts; but their essential nature, as a distinctive and necessary part of any civilized society, is simple and unchanging.

A university is an organized and continuing body of men associated together, after due training, for a threefold task:

1. To deal at first hand with the sources of knowledge, to verify truth and so far as possible enrich man's store of it.
2. To impart such knowledge, and the methods by which it may be further extended, to students at the final and highest stages of their preparation for their own active professional careers.
3. To inspire men thus trained to service.

How Did Universities Arise?

The function of discharging this threefold task, and the profession exercising it, are older than the university itself. "Professors", or professional investigators and teachers, first appeared as individuals in Greece half a millenium before Christ. They introduced the then new and startling conception of the possibility of improving the conditions of life, and directing more effectively man's activities through the free and methodical exercise of the exploring intelligence.

Around these men soon appeared the beginnings of organization; first in the form of the philosophical schools, originally gathered about some great thinker and teacher such as Aristotle, but often persisting as organized bodies for several centuries. Somewhat later a few full-fledged universities arose, notably the "Museum" of Alexandria with its rich endowments and large corps of scholars carrying on both original inquiry and advanced teaching.

Essentially similar were the origins of the modern university. It began in the twelfth and thirteenth centuries; and in its earliest form it was simply a guild or association of students and professors.

What, Then, Is the Nature of a University?

It is important to realize that all universities, ancient and modern, are built of brains, not bricks.

The eye sees campus and buildings, library and laboratories. But these are not the essence of a university. They are the tools, without which progress is impossible, and they largely constitute the contrast between the university of today and the university of ancient times.

But the essence of a university is its men, and the spirit which guides them.

This spirit is simply a faithful adherence to the triple function of teaching, research and service.

The teaching is fundamental. But so is the spirit of research; the active quest for truth as distinct from its passive absorption—without which no teaching institution, however large, has the genuine character of a true university.

Service

To these two we must add service. Service to the local community, service to the state, service to the nation, yea, and service to the world; and these cannot be maintained except through service to the individuals who compose society. A true university cannot thrive apart from an outlet in the community for its product in men, in ideas and in spirit. It must keep its feet on the ground; it must develop "legs" as well as "head". Thus I am reminded of two stories to illustrate this double point. Lloyd George, when making one of his famous campaign speeches, was heckled by a man who cried out, "What do you know about that, you little runt of a Welsh lawyer!" To which Lloyd George like a flash replied, "That fellow must be an Englishman, for in Wales we measure a man from his neck up!"

True, the university must develop intellect. But that intellect must reside in a body and that body, to be effective as a servant of mankind, and even to serve itself fully, must have legs. Abraham Lincoln was once present when some

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friends were discussing how long a man's legs should be. When the question was referred to him, Abe Lincoln said, "Well, I've always thought a man's legs ought to be long enough to reach the ground!"

Indulge yourself in all the high thinking you can, but keep mindful of those about you who need your help. There must be teaching, research and service, and the greatest of these is service.

Yet the preparation and foundation for that service involve the broadest possible scientific research; and it is of this that I wish to speak a little more in detail.

IMPORTANCE

For more than a century the greater number of those researches, which have recast radically our understanding of nature and of human history, have modified largely the physical conditions of human existence and of personal health, and have made possible those inventions and commodities without which our vast modern populations could not so much as subsist, have been carried on by members of universities in university libraries and laboratories.

THE PURSUIT OF RESEARCH

The motto of Johns Hopkins University is *Veritas Vos Liberabit,* "the truth shall make you free".

The University has always been an apostle of truth for the sake of truth, of the pursuit of new knowledge with new knowledge as its own reward, and yet in its practice of that principle many discoveries of very great practical importance have been made.

THE MEDICAL FIELD

Now the greatest field of service, in which the University as a discoverer of truth may apply itself for the benefit of mankind, is the field of medicine.

Old as is the science of medicine, the last fifty years have seen a greater advance than in all the preceding period since the days of Hippocrates himself. Yet so much remains to be done that medical science itself is rapidly undergoing a great change. It is seeking to apply to life processes the fundamental principles of physics and chemistry. It is seeking in biology and genetics, the secret of life processes themselves. And subjected to such inquiry, life presents itself as an increasingly complex problem of physics and chemistry.

Growth, the assimilation of food and all the normal functions of the body, in so far as medical knowledge has begun to understand them, are controlled by a most intricate system of chemical and physical reactions which take place in the laboratory of the body. When these reactions become abnormal their outward manifestations constitute the symptoms of disease.

Consequently our leading medical schools are endeavoring to make medicine a biological science by applying the methods of the fundamental sciences to the study of life. They realize that the physician, if he is to know how to restore health to the diseased body, or better still to prevent disease, must first know the laws governing the normal functions of the healthy body.

When Johns Hopkins left his money for the founding of the University which bears his name in his native city of Baltimore, he left an equal sum for the founding of the great hospital which also has made his name known throughout the world. In his mind there was clearly a fundamental connection between the two institutions—moreover, the first president of the University, Daniel Coit Gilman, was also the first director of the hospital. And when the University opened its doors in 1876, it was for advanced students in six fields of research, the three fundamental natural sciences of physics, chemistry and biology being well represented under the leadership of Henry Augustus Rowland, Ira Remsen and Henry Newell Martin.

The unusual opportunities for research and the magnetic character of these leaders brought to the university as students many men who have since won distinction in these three fields, as Wm. K. Brooks, W. T. Sedgwick, E. B. Wilson, Wm. H. Howell, M. M. Metcalf, Frederick S. Lee and Thos. H. Morgan, in biology; H. N. Morse, H. N. Stokes, E. H. Keiser, Geo. M. Richardson, C. H. Herty and E. P. Kohler in chemistry; E. H. Hall, E. L. Nichols, A. L. Kimball, Henry Crew, E. B. Rosa and General Geo. O. Squier in physics.

It was with such preliminary emphasis on these three branches of natural sciences, and in such an atmosphere of research and of high educational standards that the medical school was opened in 1893 as an integral part of the University and the active nexus between the University and the hospital.

From the start this medical school has required its students to have the bachelor's degree before admission and has required complete preparation in the basic sciences of chemistry, physics and biology, thus early emphasizing the importance of these fundamental subjects to the further progress of medicine.

For a decade or more special courses in each of these subjects had to be provided for the benefit of students coming to our medical school from other institutions, before the colleges realized the necessity for a thorough grounding in physics, chemistry and biology as preliminary to the successful study of modern medicine.

It is, I believe, generally admitted that Johns Hopkins has contributed to the development of scientific medicine in this country, and also, I believe, to the development of the modern method of investigation and advanced instruction in physics, chemistry and biology. What I wish just now to emphasize is the fundamental relation between the two. The achievements in medicine have been largely due to achievements in these other fields.

To make this clearer, a few concrete examples may be cited and should suffice:

Remsen, working in his chemistry laboratory, discovers a new compound, a sulphonephthalein, derived from coal tar acids. So far as he is concerned that is the end of it. He turns at once to another research. But Dr. Abel, the head of the department of pharmacology in the medical school, takes this compound and subjects it to further research, finding that it serves as a useful guide to the condition of the kidneys. Then, in the hospital, the urologists adopt it to determine the ability of certain patients to withstand the shock of operation; and one of the first patients on whom it is used is Remsen himself!

Verily, not a vicious circle, but a circle of life.

Roentgen, studying the discharge of electricity through gases purely from the standpoint of the physicist discovered x-rays. The use of these rays in the diagnosis of surgical cases immediately followed and also a little later their use as a curative agent. Yet, owing to an insufficient appreciation by the physician of some of the conditions quite a few patients and also workers suffered severe injuries. Further physical research showed what the necessary precautions were and led to a perfection of apparatus and of technique.

Let us follow up just one case in which the use of x-rays as a diagnostic indicator formed only the first step in a series of discoveries the end of which is not yet.

By means of roentgen photographs the peculiar conditions of the bones of the head and of the ribs were revealed in the case of rickets in children.

Howland at Johns Hopkins, by direct analysis showed this beaded condition of the bones to be due to a deficiency of lime or of phosphate in the blood.

Huldschinsky effected cures by exposure of patients to the radiation from a quartz lamp with mercury vapor as the radiant, especially strong in the ultra violet; while Hess attained cures using ordinary sunlight.

McCollum and Park at Johns Hopkins working on rats caused rickets through a deficiency of calcium or of phosphorus in their diet and definitely cured the same with sunlight. Then it was demonstrated that the portion of the solar spectrum really effective was only the ultra-violet in the neighborhood of 400 millimicrons or say all below 320.

Pfund, working in the physics laboratory at Johns Hopkins on a problem connected with the darkening of certain paint-pigments when exposed to sunlight, is thereby able to suggest to Dr. Janet Howell Clarke at our School of Hygiene, herself a physicist, (the daughter of our Dr. Wm. H. Howell) a simple method for measuring the intensity and dosage of the ultra-violet radiation to be used in curing rickets by the use of an exposure meter in which a fresh area of paint-pigment known as lithopone is rapidly darkened by the rays from about 320 down, till it matches a standard tint.

But suddenly the plot thickens! For it is found that, by feeding cod-liver oil the same good results are obtained as with ultra-violet rays!

Then from Wisconsin comes the report that some ordinary foods subjected to radiation before feeding produce the same effect as cod-liver oil. Just how the cod-liver oil or the radiated food produce their effect is not yet clear, but probably the effect of ultra-violet rays on calcium or phosphorus salts already present in the intestinal tract is to render them available for absorption into the blood whereas without such excitation they are not in condition for assimilation.

The complete elucidation of these curious phenomena involves the action of semi-permeable membranes, as well as the photo-electric and physiological effects of radiation on the colloidal conditions of body fluids, body tissues and cells. It even looks as if some of the vitamine principles that have been already recognized are really electrical conditions and not material substances. And it is clear that the whole field of the physiological effects of radiation needs exhaustive study. Naturally, that in turn also means the further study of radiation by the physicist himself.

The first step in this general direction would be the establishment of an adequate department of radiology and biophysics, to study the bearing of physical phenomena on the problems of medi-

cine. There is need of a special department to study the therapeutic value of radium emanations. Little is known also of the value of light. Medical science is just beginning to realize that light, like coal tar, is a crude product. It is made up of a multitude of wave lengths, some beneficial in their action, like the ultra-violet, some harmful, like the infra-red. There is need that the physicists do much the same with light, from the medical standpoint, as the chemists have done with coal tar, which has been a source of so many weapons against disease.

The new department would also study the physical action of water, for little is known of water therapy, the effect of various baths on the cells of the human body, and the physical action of solutions in promoting the circulation of the vital body fluids. This opens up an entirely new field.

If, for instance, the medical school would attract to its faculty a leading physicist, who, with his assistants, might devote himself to the study of surface tension, osmosis, radio-activity, the electrical forces concerned in colloidal suspension and the activities of x-ray, ultra-violet rays and various other forms of radiation, there is no doubt that vision of the students would be broadened and the fruitfulness of medical research increased.

Like the study of diseases of the eye, the study of diseases of the ear, nose and throat seem inadequately provided for in American medical schools. So little is known of the underlying causes of deafness that the General Education Board, the Western Electric Company and other interested individuals have provided a fund with which to begin fundamental researches dealing with the basic anatomy of the organs of hearing and the effect on them of other diseases. Dr. Samuel J. Crowe has these researches under his direction at Johns Hopkins.

Intense radiations from furnaces have long been known to be injurious to the human eye and even to cause cataracts with resulting blindness to workmen.

Dr. Pfund, a Johns Hopkins physicist, has produced gold screens by depositing a thin layer of gold on yellowish glass, which allow the visible radiations to pass through, but shut off both the ultra-violet and the infra-red rays that cause the trouble. These screens have been made into goggles which protect the eyes of workmen around furnaces, and are also used in motion picture technique. This might be called "preventive medico-physics."

A question of peculiar interest to man as a "worker", i. e., as an "engine" or "prime-mover", is the problem of the conversion of the fuel elements in our food into work, essentially a problem in physics.

A. V. Hill of University College, London, trained as a physicist at Cambridge University and adding his physics to physiology, has recently applied in a masterly manner the laws of physics in great detail to muscular activity. With Gasser of Saint Louis, formerly of Johns Hopkins, he has recently shown that a muscle acts precisely like an elastic body which also possesses high viscosity. He thus explained the cross striations of muscular fibre. In certain cases he has demonstrated the energy relations of muscular activity, showing a sort of hysteresis, and he has pointed out the importance of the speed of reaction. For instance, he has shown that there is a certain definite critical speed at which a given action should take place to secure the maximum work in return for the expenditure of energy through muscular activity. In ascending a given flight of stairs there is for a given individual a definite or critical speed at which the expenditure of energy is a minimum. To ascend more slowly or faster than this is to waste effort. In one case investigated this critical speed was 78 steps in 100 seconds.

Similarly the factor of speed is being more and more recognized as an important one in the chemical reactions taking place in the body as well as in the muscular activities when doing external work.

The study of chemical accelerators, the enzymes, and the study of colloidal actions which are so largely involved in the functioning of nerve and cell, muscle and organ—present such complex problems that the combined labors of the chemist, the physicist and the biologist as well as of the pharmacologist and the pathologist are all needed for their solution.

COLLOIDS

All the tissues, muscles and fluids of the body are colloidal suspensions. Hence the study of colloidal chemistry is of vital importance for the development of medicine as a science.

The sensitiveness of the kidneys to acidity, the coagulation of the blood, the stiffness of muscles are all instances of the disturbance by very slight changes of the stability of a colloidal system vital to health.

Surface tension, electrical changes and conditions of ionization, response to radiation, the behavior of semi-permeable membranes—all these are factors to be studied. They are fundamentally physical-chemical problems.

During the war Embden of Frankfurt University discovered that acid sodium phosphate in-

creases a man's capacity for muscular work and probably aids in prolonged mental work also. It appears to have no bad after effect and can be taken for long periods. It may become as normal a beverage as tea or coffee, as the cost is low.

Chemistry will be more and more applied to the production of the most important group of physiologically active substances—namely foods. Many, including the proteins, we shall probably build up from simpler sources such as coal and atmospheric nitrogen. Haldane, bio-chemist at Cambridge, allows not more than 120 years before a completely satisfactory diet can be prepared in this way on a commercial scale.

The need for collaboration is clearly indicated.

Ether was known to chemists for over 500 years before its value as an anesthetic was appreciated.

Magnesium sulphate was known to chemists for 200 years before it was learned what great relief it gave in lockjaw, burns and strychnine poisoning.

Twenty-three years elapsed between the discovery of amyl-nitrite by the chemists and the discovery of its medicinal properties by the physician; during this interval tens of thousands suffered the tortures of angina pectoris needlessly just because the chemists, the pharmacologists and the physicians were not working together.

For, just as the pharmacologist is the armorer of the physician providing him with new and better weapons in his fight against disease, so the chemist is in turn the father or elder brother of the pharmacologist. The ultimate aim of their collaboration is to make the physician as sure of the action of those substances which he puts into the human body as is the chemist when he mixes chemicals in a test tube.

One of the most important fields in which the pharmacologist must rely thus upon chemistry is the isolation, study and preparation of the pure principles of our organic secretions.

One example will suffice to illustrate. Schafer & Oliver noted the presence of a vaso-constrictor principle in the suprarenal glands. Abel of Johns Hopkins isolated it in the form of a derivative and prepared a number of salts of this derivative. Takemine precipitated the pure principle of adrenalin by means of ammonia which Abel also had used. The chemical structure was determined and it is now prepared synthetically. Among its numerous and now well known advantages we may note that it reduces the toxic effects of a local anesthetic, relieves the spasms of acute asthma, checks hemorrhage of a capillary or small arterial character; sustains the heart in operative cases and in pneumonia.

Perhaps the greatest immediate problems of chemo-medical research are those involving the isolation of the pure principles of the antitoxins, bacterial vaccines and serums now used so widely in the cure or prevention of infectious diseases.

What indeed is disease? As yet there is no adequate answer. We know that germs are active in bringing about certain pathological conditions but the knowledge of how they are able to begin their work is still shrouded in much uncertainty. Everyone is constantly breathing the bacilli of tuberculosis and a dozen other diseases but all of us are not sick. What enables the cells in the bodies of some to resist the attack of disease germs? What gives them ingress in others? What chemical and physical changes take place to make the same individual at times susceptible and at times immune?

The detection and destruction of the cholera bacillus, while involving considerable science, really involved only one purely biological principle, important but not profound—that some bacteria kill some men. The really scientific parts of the process are the optical and chemical methods involved in the magnification, staining and killing of the bacilli.

Yet the immunization to typhoid apparently involves biological principles which are neither simple nor completely understood.

While the microscope, with all its marvelous improvements, can go no further than the cell or its divisions, chemistry can go much farther. Cell-secretion, cell respiration and cell nutrition are clearly only different aspects of the same whirl of molecular activity. Physical-chemistry will carry its analysis down to the molecules and atoms, even to the corpuscles or nuclei which constitute the fundamental electric charges.

Chemistry and Biology

Great good would result from the appointment of chemists and biologists within the medical faculty. Were outstanding men in these sciences secured, both advanced students and instructors from other departments of the school would have the opportunity of working under conditions which could not fail to advance medical knowledge. At present the department of physiological chemistry at Johns Hopkins, for instance, is primarily concerned with the metabolism of the body; but such investigators as are contemplated would deal with the fundamental chemical phenomena that apply to almost every problem of medical science.

The remarkable power of the blood to maintain its normal alkalinity has been elucidated completely by Henderson of Harvard on simple

principles of physical chemistry, showing the existence of chemical "buffers".

Dr. George Crile of Cleveland has recently brought forward proof in support of the theory that life itself is a phenomenon which is primarily based on the electrical properties of the cell, the smallest division of living matter. Complete knowledge of the articulation of the bones and muscles of the body and the flow of the blood is also recognized to be dependent on the application of physical laws to the interpretations of these actions.

Positive and far-reaching results in almost every branch of medicine will accrue from the concerted attack upon its problems of expert chemists, expert physicists and expert biologists and medical men organized on the basis of this fundamental physical-chemical point of view.

In turn the chemist or the physicist needs the cooperative effort of the medical investigator—the pathologist, bacteriologist, internist, for only by such cooperation can the vital problems of medicine be brought home to the consciousness of the experts in the fundamental sciences.

It must be clearly borne in mind that these specialists should be primarily physicists, or chemists or biologists—not medical men with some training in one or the other of these fields. Moreover they should not have been trained with any special or narrow field of application of their science in view. What is needed is not technologists but scientists with a broad fundamental grasp of the principles of physics, or of chemistry or of biology. Only those thus thoroughly trained will be able to tackle with maximum success the intricate problems involved in the more accurate determination of the physical and chemical aspects of man's body and its life.

Chemistry is the fundamental science of the transformation of matter; while physics is the fundamental science of the transformation of energy. Life in all its forms and phases is the highest, most complex combination of transformations of matter and transformations of energy. In this we have the key to the most important phases of modern medical research, and to our faith in its future.

The life work of Pasteur is, of course, the best known and also one of the most illuminating examples of the inter-relation of physics, chemistry, bacteriology and medicine. Such also was his personal character as well as the character of his work that by popular vote he was declared the greatest of Frenchmen. Certainly, his service to humanity looms large with every addition to our knowledge of infectious diseases.

It is not necessary, I take it, to remind you of the details of Pasteur's work; but merely to recall its broad lines in order to emphasize the sequence and inter-relations between the sciences involved in his achievement which has been of such untold benefit to humanity.

Studying the crystals of racemic acid, intent only on the advancement of knowledge, he discovered a dissymmetry between two groups of crystals which were chemically identical. The two types of crystals in solution produced opposite rotations in a beam of polarized light. Thus the constitution of racemic acid formerly so mysterious was elucidated and a new class of isomeric substances discovered. A distinctly unforeseen route had been opened in science which led twenty years later to the development of stereo-chemistry as a distinct field.

Pasteur succeeded in producing racemic acid synthetically. He observed that one class of the crystals ferments while the other remains inert. He showed that fermentation, which formerly had been regarded by Liebig and others as a purely chemical phenomenon, is due to the presence of a host of bacteria, which eagerly devour one class of crystals and ignore the other. Here was begun the study of the great putrefactive changes and of the part played by bacteria in disease, which made the world Pasteur's debtor. Cleanliness in modern surgery, the cure of rabies, the germ theory of infection, all go back to those simple experiments in pure science—first physical, then chemical and then biological.

It has been estimated that the discoveries of Pasteur, merely in their economic value, to say nothing of their humanitarian value, more than offset the material loss by the Franco-Prussian War of 1870. Thus the works of a single scientist of genius, trained in a university atmosphere, created more wealth than the armies destroyed.

What a privilege for the student even of today to follow in his footsteps; to feel the stimulus of his example; to realize in some measure that high sense of devotion to truth, of obligation to humanity, best typified in Louis Pasteur!

HOSPITAL PROVISIONS FOR PERSONS IN MODERATE CIRCUMSTANCES

The Massachusetts General Hospital has taken up the problem of caring for those who are not very poor or very rich, but who can pay a moderate fee. A bequest of $1,000,000 is being used to construct wards or a branch hospital that will provide for such needs. This is a field that other hospitals may enter with great public advantage.

STANDARDIZATION OF TREATMENT OF FRACTURES OF THE SKULL*

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There will be no attempt in this paper to describe, nor even name, the many varieties of skull fractures that are now on record or that may occur. There will be no plunge into the labarynth of special signs and symptoms which will lead to the niceties of differential localization diagnoses, nor will there be a long exposition on the various types of treatments that have from time to time been brought forth.

It is my aim to place before you a simple working classification, chiefly from the standpoint of treatment, also, to present a few signs and symptoms, which are of practical value, as a guide to the course which should be pursued in the management of these cases, and finally, to outline a plan of treatment according to the type of case.

Given a skull fracture, there are certain questions which arise, namely, are the contents of the skull injured, is the scalp injured, and is the possibility of infection imminent? When these questions are answered, the cases will arrange themselves into the following classification:

Simple fractures,
Linear,
Depressed,
Compound fractures,
Linear,
Depressed.

In this classification a separate group of basal fractures has not been made, because we hope to show later, that it is of no great importance in the management of these cases to recognize this type as a separate class except in giving a prognosis.

When a patient is not unconscious, the diagnosis of skull fracture is not difficult, but when the patient is unconscious other causes of coma should be excluded. The dilated or unequal pupil, free blood from the ears, nose or the throat, or clear fluid from either of these sources and projectile vomiting, with or without blood, will assist in establishing a diagnosis.

There are certain general measures that may be carried out in all cases, except those in profound shock. Besides a general inspection, the pulse rate should be taken and recorded, and the blood-pressure obtained as soon as possible. These are two signs that will help later to decide if operative measure should be instituted. Thus—should the pulse rate become slower, below 60, and the blood-pressure rise, it is evidence of increasing intracranial pressure. The fundus of the eye should be examined, not once, but frequently, chiefly to find any evidence of increase in pressure. There seldom is a choked disc, but there frequently is cloudiness and papillary edema, which are definite signs of pressure. The pupil reaction should be observed, for should there be no reaction to light, in the event of a basal fracture, the prognosis is very bad, nearly all of them being fatal.

Many authors are advising a lumbar puncture as a routine procedure. This is of value both for diagnosis and for treatment. When the spinal fluid registers 16 m.m. of mercury by the manometer, it is evidence that there is an excess of pressure and a decompression operation should be done immediately; when below 16 mm. expectant treatment may be carried out, according to Scharpe. When the fluid is blood tinged, we have evidence of intracranial hemorrhage. There is one precaution to be remembered in doing a lumbar puncture, withdraw the fluid slowly, as the sudden release of pressure from below may permit the medulla to be forced into the foramen magnum, causing sudden death. Lumbar punctures should not be done while the patient is in the initial shock.

An x-ray picture should be made. In this respect it is well to remember that extensive linear fractures may be demonstrated which do not produce any symptom and which otherwise would not be recognized, and also that negative x-ray findings are not proof of the absence of fractures. Often several exposures at different angles are necessary to show even a depressed fracture.

It is highly important to get a history of the injury, as to the direction and amount of the force, for the fracture is always in direct line with the force and never at right angles to it. The general condition of the patient when first seen should be learned, whether conscious or not, immediately following the injury. This latter information is an important guide. Seeing a patient unconscious, later showing a lucid period, and then lapsing into unconsciousness, the evidences of compression from active hemorrhage are before us.

If the patient is in profound shock when admitted all that should be done is to attend to any external hemorrhage in the simplest way possible, and to keep the patient warm and quiet, not even disturbing to remove the clothing. Black coffee by way of the rectum may be administered, also small doses of morphine. Finally a neurological examination should be made.

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The treatment of simple linear fractures is usually expectant. These fractures are frequently not diagnosed, and many only by means of the x-ray. These cases should be kept quiet and under careful observation, with a careful watch for signs of compression and of increasing intracranial pressure. When there are signs of increasing pressure present, such as lowering pulse rate, rising blood-pressure, and fundus changes, lumbar puncture may suffice to relieve the condition, and this may be done repeatedly. Dr. Munro of the Boston City Hospital in a personal communication states, that "he has become a convert to the lumbar puncture method of treatment." When this method does not sufficiently relieve the symptoms, and we still have the signs of increasing pressure, a sub-temporal decompression operation should be done.

If there are no signs to indicate which side is injured, it may be necessary to operate both sides. In doing this operation care should be taken not to tear the temporal muscle from its origin, a large bone flap should be made, and this should be well down. When the field is exposed, all blood clots should be removed, the bleeding points searched out, and the vessels ligated. If in doubt as to subdural hemorrhage a crucial incision should be made in the dura, and if blood clots are present they should be removed and bleeding points ligated if possible. The dura should then be closed. The muscle and fascia should be closed with interrupted sutures. It is possible, even when the dura has been opened that no fluid will appear. Sachs advises in this event tapping the lateral ventricle through the descending horn where it goes into the temporal lobe.

In the simple depressed type of fractures immediate operation is indicated, unless the patient is in shock. Should shock be present it is necessary to wait until the blood-pressure rises before interference. Then a decompression operation is done to remove the bone pressure, also to remove all clots of blood, and stop bleeding points, whether intradural or extradural. If the dura be opened it should be closed after the bleeding points are arrested.

In compound linear fractures the first aim is to convert it into a simple fracture. The scalp should be cleansed and shaved for a wide area about the wound, the wound swabbed out with iodine, and debrided. The edges of the wound should be cut away so that a clean fresh surface remains and then should be sutured. These cases should be carefully watched for signs of local compression or increasing general intracranial pressure. Also in case where the fracture has extended into the base, or on the assumption that it may have done so, especial attention should be given to the nose, ears and mouth to keep them clean, plugging nostrils and ears with sterile cotton and keeping the external auditory canals dry and clean.

Compound depressed fractures are the most severe of all skull fractures, that is, the most damage is possible to the contents of the skull. In this as in similar conditions treatment should be directed to combat the shock. When the pulse increases to around 100 and the blood-pressure approaches normal one may procede with operative measures. With high intracranial pressure a preliminary subtemporal decompression should be done. It is much safer and a better procedure as it lessens the damage to the cerebral cortex at the site of the decompression—both according to Scharpe. Success with these cases depends upon the thoroughness with which we clean up these wounds. Besides the usual aseptic measures a thorough debridement should be carried out, as suggested also all loose bone removed, and depressed bone elevated. If the dura is lacerated and the brain injured, the wound should be flushed out with sterile salt solution, special care being taken to remove all loose brain tissue as well as blood clots and foreign material. When it is probable that infective material has entered the wound a small drain should be left in when closing the dura. These patients should be kept in bed and very quiet for at least a month.

After recovery it is very essential that all fracture cases should be kept under observation for at least a year. They should have a neurological examination six months after dismissal, and if at any time they show any peculiar characteristics developing, close watch should be kept over them, because occasionally these cases develop insanity with suicidal tendencies.

The following points of management I would like to leave with you: absolute quiet in cases with shock, constant observation for signs of intracranial pressure, obtaining the blood-pressure and pulse rate early, lumbar puncture in controlling mild intracranial pressure, perfect technic in compound cases and decompression as soon as signs of progressive increase in intracranial pressure are evident.

In no other cases of trauma is the life of the patient dependent more on one's surgical judgment and prompt action than in fractures of the skull.

FRACTURES OF THE UPPER EXTREMITIES*

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In presenting this subject I do not believe that it is advisable to attempt to describe or demonstrate all of the fractures of the upper extremity in such a short time, but my aim will be to present to you, fractures and their treatment, with special reference to fractures of the humerus.

Few subjects are older than fractures and few are newer in the sense of the interest manifested by the profession at the present time. The revelation of the x-ray has been largely responsible for the interest transferred to fractures. It has greatly disturbed our peace of mind and has stimulated discussion concerning the effectiveness of long accepted methods of treatment. Operative treatment was practically unknown before 1895, when the x-ray was discovered, and operation was avoided as far as possible even in ununited fractures. Now operation is frequent in the latter cases and gaining too much favor in the unskilled hand in the recent fractures. We have the radicals on the one side who want to operate on all cases of fracture and the ultra-conservatists who never want to operate. I believe that the physician who strives for the happy medium between the two extremes, will produce good anatomical and functional results.

How many surgeons take the time to visualize accurately the position of the displaced fragments, the aspect of the facets, the angles of the obliquity and the rotary changes?

The x-ray is of invaluable aid but we must not allow it to make us lazy. Sir Robert Jones has declared "We must beware that we do not paralyze our diagnostic faculties from pure inanition. Roentgen rays should supplement, not usurp, other means at our disposal". Jones further mentions; "It is impossible in quite a number of cases in young children, despite excellent pictures, to diagnose elbow fractures by means of x-rays and here our tactile education is invaluable". The reason for this is that the bones in early life are cartilaginous and therefore transparent.

There seems to be a tendency to regard reduction in transverse fractures as more satisfactory than in oblique fractures. I have not found it so and the explanation of the trouble seems simple enough. It is difficult to understand why anything else should be expected. The chief function of muscle is to contract on the slightest irritation. As soon as fracture with over-riding occurs, the irritation of the fragments causes contraction and shortening of the surrounding muscles. Before reduction can be accomplished and maintained these muscles must relax and lengthen to the normal, or enough extension must be applied to stretch them to the normal length, and this must be continuously maintained. It is therefore of primary importance to apply extension very early.

We find in nearly all fractures of the upper extremity, although the line of fracture may not be the same, a certain uniformity of displacement. There are a number of plausible explanations and these must be taken into consideration when treating these fractures:

First: Muscle pull. In each instance, one or more certain group of muscles pull the fragments into a typical position.

Second: The fracturing force, either direct or indirect, must always be given careful consideration. In my judgment, the proof of the cause of the deformity is in the deformity itself. Every feature of it is easily explainable by the force if carefully studied. Indirect violence usually gives a spiral or torsion fracture, and there is in most cases little distortion of the limb or injury to the soft tissues. Direct violence usually produces a transverse or comminuted fracture with more deformity and soft tissue injury.

In treating fractures of the humerus, one must have a thorough knowledge of its anatomical relationship. The humerus is a long bone forming the skeleton of the upper arm, articulating with the scapula above and with the bones of the forearm below.

The upper extremity is composed of the head, which is directed inward, upward and backward at an angle of one hundred and thirty degrees with the axis of the shaft; the anatomical neck; the greater and lesser tuberosities; and the surgical neck. The anatomical neck is the constricted portion immediately beneath the head to which the capsular ligament is attached. Beneath the anatomical neck there are two rough prominences — the larger or greater tuberosity being directed outward, and the smaller tuberosity being directed inward and forward. Between these two is the bicipital groove. Below the tuberosities there is a marked constriction, the surgical neck.

The shaft is cylindrical above and transversely expanded and triangular below. In the lower half of the shaft there are three surfaces—the antero-internal, the antero-external and the posterior.

The lower end has the condyles on each side, a groove behind the inner condyle, lodging the

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ulnar nerve. Immediately outside this hinge-like articular surface, the trochlea for the ulna, on the outside the capitulum, a convex articular surface on the front, and the lower aspect to articulate with the head of the radius. Above the trochlea a deep olecranon fossa behind, and a shallower coronoid fossa in front to receive the corresponding parts of the ulna, above, the capitulum, in front a very shallow capitular fossa.

Two points in the anatomy of the lower end of the humerus must always be remembered. First the inner condyle is placed at a lower level than the outer when the arm is parallel to the erect trunk. By this arrangement the carrying angle is formed, a very necessary position to maintain after injury. Second: The articular surfaces of the humerus are fastened to the shaft of the bone at such an angle (130°) that they point forward and downward instead of directly downward as generally supposed. A right angle reduction, therefore, does not bring forward completely, the lower fragment, or produce a proper tilting angle to the articulation. (This explains the rationale of the Jones' acute flexion treatment.)

Fractures of the upper end of the humerus may be classified as: (1) fractures of the head; (2) fractures of the anatomical neck; (3) fractures through the tuberosities; (4) fractures (isolated) of the greater or lesser tuberosity; (5) separation of the upper epiphysis; (6) fractures of the surgical neck.

In every case where fracture is suspected, a thorough and rigid physical and x-ray examination should be made. The injured side should be compared with the sound side if only one side is involved. Measurements should be made, in the case of the humerus, from the bony point of the coracoid to the external condyle. Rough manipulation should be avoided especially in impacted fractures.

Fractures involving the glenoid cavity and the head of the humerus need special care and attention. The arm should be put up in sixty degree abduction during treatment.

Fractures of the shaft of the humerus include all fractures involving the diaphysis between the insertion of the pectoralis major muscle and the upper limits of the supracondylar ridges. These fractures are generally complete and closed in character. Occasional incomplete fracture of the shaft is observed in children. Longitudinal fractures are extremely rare.

In treating fractures of the shaft, special attention must be paid to the necessity of extension and its maintenance throughout the treatment. Extension is just as imperative as that of any other long bone.

In fractures that occur above the insertion of the deltoid, the proximal end is usually rotated externally by the supra and infra-spinatus muscles, so it becomes necessary to place the arm in external rotation so when union takes place the patient has not lost external rotation. This position is best obtained by an airplane splint.

Fractures of the humerus that occur just below the insertion of the deltoid muscles are fractures which require special attention, because in this fracture we have the upper fragment abducted, and this is the end of 'the bone which we cannot control'. The distal fragment can be controlled and must be placed in apposition to the fragment that we cannot control. So it becomes necessary to abduct the arm to an angle of about sixty degrees from the body.

Varieties of Fractures of the Lower End of the Humerus:

1—Supracondylar; (2) Diacondylar; (3) Intercondylar T, Y or atypical; (4) Separation of the lower epiphysis; (5) External epicondyle; (6) External condyle; (7) Internal epicondyle; (8) Internal condyle; (9) Capitellum; (10) Trochlea.

Treatment: For fractures in the vicinity of the elbow joint, with the exception of the fracture of the olecranon process, the fully flexed position offers the best results. Often a splint is unnecessary, the forearm being strapped to the upper arm and fixed to the chest with a bandage. The advantages of the flexed elbow position are:

1. Gives the most complete anatomical reposition of fragments and the best fixation.
2. It favors the retention of the more important flexion function of the joint.
3. It cooperates with gravity in the subsequent restoration of function.

Methods of reduction in correcting the initial deformity:

1. Strong traction is exerted on the forearm with the elbow fully extended and supinated.
2. The joint is manipulated and displacement corrected as far as possible.
3. While maintaining Nos. 1 and 2 the elbow is slowly but firmly flexed to an acute angle and so fixed with forearm supinated.

As to how long acute flexion should be maintained, of course, will depend entirely on the case, but usually after two weeks the forearm can be lowered a few degrees at a time every two or three days until arm is fully extended. Gentle massage is indicated in all of these cases.

Passive movement should be started about the fourth week and should be one movement in each direction (pronation, supination, flexion and partial extension).

Cohn has pointed out that attention must be directed towards developing the external rotators of the humerus in supracondylar fractures. Otherwise patients will continue to carry the arm in the position of internal rotation which will give a cubitus varus of muscular rather than bony origin. In these fractures the position of hyperflexion puts the biceps muscle on the stretch so that it acts as a natural splint.

In fractures of the internal condyle, both pronation and hyperflexion of the forearm are necessary, since muscles are more relaxed in this position and the brachioradialis and supinator brevis tend to diminish the carrying angle. In fractures of the external condyle, pronation would cause the pronator teres to pull the fragment away from the humerus.

Fractures of the capitellum and trochlea is very uncommon and in a recent research by Martin C. Linden, he reports on the literature of seventeen cases. These include fractures of the whole or part of the capitellum, of the upper portion of the trochlea, and of the capitellum and the trochlea together. The fracture consists in simple splitting off of the articular face of the bone by a fracture through the cancellous bone, the fragment consisting only of the articular cartilage and a thin strip of underlying bone. The fracture is intra-articular and the fragment lies free in the joint.

The mechanism of the fracture has not definitely been determined, but two theories are plausible. First, by a blow on the upper end of the dorsum of a partially flexed forearm, transmitting the force through the articular end of the ulna and the head of the radius to the capitellum and trochlea. Second, by a fall on the extended forearm, the force being transmitted through the long axis of the radius and ulna in such a way that the head of the radius separates the articular cartilage of the capitellum, the coronoid process acting in the same way upon the trochlea.

The fragment is, as a rule, displaced anteriorly within the capsule to the front of the humerus so that the fracture surface of the fragment is in contact with the humerus and the articular face points outward and anteriorly.

Clinical features:

1. Spontaneous pain in the region of the fracture.
2. No change in the normal landmarks of the elbow.
3. Progressing limitation of movement of the elbow joint to 15 degrees.
4. The finding on palpation of bony projection in the antecubital fossa.
5. Crepitus caused by a loose body in the joint.

Treatment is excision of the fragment.

These fractures are an entirely different type than those described by Posada. In this fracture the line of fracture is above the attachment of the ligament of the joint and also different from the fractures described by Ashhurst. Ashhurst fracture is through the epiphyseal line in children and are extra articular.

When we speak of fractures of the elbow, we must also consider beside those of the humerus:

1. Fractures of the olecranon process.
2. Fractures of the coronoid process.
3. Fractures of the head and neck of the radius.

1. Fracture of the olecranon process involves the elbow joint and occurs usually at the base or weakest part of the process. It is due to direct violence and is frequent in adult life. Treatment: Extension of the elbow for two to three weeks. Union is nearly always satisfactory.

2. Fracture of the coronoid process may be due to a backward dislocation of the elbow joint. Danger is, that an obstructive spur may be left in the joint or that a traumatic myositis ossificans may be produced. Treatment is complete flexion.

3. Fracture of the head or neck of the radius is not rare. The fragment is usually displaced outward and forward and may be mistaken for a small piece of the external condyle. Treatment: Full flexion for several weeks as it is important to limit any excess callus formation. Early movement is contraindicated.

If there is obstruction to supination, the fractured piece should be immediately excised. Reduction should be done as early as possible.

Complications:

1. Volkman's contracture.
2. Traumatic myositis ossificans.
3. Ulnar nerve or median nerve injury.
4. Permanent restriction of movement from excessive callous formation in the fossæ.

Volkman's ischæmic paralysis should always be kept in mind—particularly in children. It can be largely prevented by:

1. Leaving no pad in the elbow unless it be a pneumatic pad.
2. Have no constricting band or bandages about the joint.
3. Seeing that the angle of flexion is not too extreme.

When operation is indicated, it should be done as soon as conditions will permit, but usually not before the tenth day. This delay will allow the soft structures time to return to an approximate normal condition and give a greater bacterial resistance against infection.

Indications for operation:

1. Non-reducible fragments or displaced head of the radius is an indication for operation.

2. Those in which the epiphysis has been detached and turned turtle.

3. Fractured fragments of the capitellum and trochlea should be excised.

4. Co-existing nerve injury should be a clear indication for operation.

Open operation, with exception of special cases as above outlined, to my mind, should be the last resort. Traction and contratraction by mechanical devise should always be given a fair trial. I believe that too many surgeons are not sufficiently trained in these methods of traction and naturally resort to early operative means.

The ultimate attainable aim in the treatment of fractures of the elbow joint must be the formation of a normal joint. If when the fracture is healed, the range of motion is sufficient to bring the hand to the mouth in flexion, and to place it in the trousers pocket in extension, the result is considered satisfactory.

In conclusion, the writer wants to impress upon you:

First, that in all fracture work it is desirable not only to get union, but to get it with the callus just where it is needed—i. e., between the fragments and not with a large lump surrounding the broken ends. An important thing from the patient's point of view is to get as perfect a restoration of function as possible. This is best accomplished by having the bone in perfect alignment longitudinally and also with reference to the rotation of the fragments.

Second—Examine your patient carefully, physically, fluoroscopically, and by x-ray plates. After the diagnosis has been made, the fracture reduced, and held in position either by mechanical devices or operative means, do not forget to x-ray control the case, and you will find that the reward will be good anatomical and functional result.

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FRACTURES OF THE LOWER EXTREMITIES*

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Early reduction, when it does not endanger the patient's life, is the first consideration in the treatment of all fractures, provided means are at hand to maintain such reduction. Blood poured out between widely separated fragments, may, in a few days, form so firm a coagulum that no closed manipulation can possibly effect a reduction, easily possible immediately after the injury. Failure to secure reduction after several days' delay frequently gives an opportunity for an otherwise unjustifiable open operation.

Reduction under the fluoroscope is frequently indicated as are diagnostic radiographs in several directions. Equally important is a corresponding checkup following reduction, for, an excellent position at the time of reduction may present extreme deformity in a few hours or days. This latter is especially likely to occur after oblique fractures treated by a circular cast, which method will yield disappointing results in very many cases.

In the treatment of fractures, sole dependence should not be placed in any one means, or method such as splints, casts, traction, or open operation. Every case must be studied by itself and treatment adapted accordingly. Fabricated devices intended for universal application are less desirable than apparatus constructed for each individual case, providing the surgeon is a skilful mechanic.

Crushing injury of the astragalus and oscalcis with heavy mushrooming of the bones by falls from a height upon the heel, have furnished prolonged, or permanent disability in most of the severe cases where the crushing of these bones

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result in the entire loss of the longitudinal arch, firm incorporation of the often widely separated malleoli, tearing of the peroneus longus from its groove behind the outer maleolus and pinching of the long flexors by the force of the injury or resulting callus. This combination results often in complete loss of flexion and extension at the ankle with a condition of hammer toe involving all the small toes of that foot. Such injuries can only be restored to a reasonable prospect of a good functional result with freedom from pain and years of disability by prompt remoulding of the oscalcis and astragalus while both bones are forced into approximately normal position and shape through the use of a padded block and mallet during traction, which is maintained upon the oscalcis to complete relaxation of the muscles. This traction must be maintained after reduction for two or three weeks until sufficient consolidation of the bones has taken place to retain their shape. Then moulded cast splints should be applied, and passive motion continued until suitable range has been restored.

Potts fracture, with its resultant complications of compounding and dislocations of the foot, presents sad examples in almost every community, and here as in the preceding fracture, maintained traction is at times imperative to prevent redisplacement of oblique solutions of continuity in the shafts of the tibia and fibula, complicating this injury. Cases with complete dislocation of the astragalus will require muscular relaxation by anesthesia for reduction, usually, and should when possible, be manipulated under the fluoroscope. If this is not possible, attempts at reduction of the ankle joint must be persisted in until as nearly as possible perfect articulation is secured, for slight inequality of surfaces, or imperfect reduction may result in permanent impairment of function. No eversion should be permitted in these cases. A slight inversion is always preferable to any eversion for strength and service.

Comminuted or oblique fractures of both bones of the leg below the upper one-third, whether compounded or not will require more extension usually than can be safely made through skin traction. Such cases should have the traction applied by calipers directly from the lower end of the tibia and fibula, or the oscalcis (the latter is usually preferable.) This method will obviate overriding and great resulting deformity as well as incapacity in some cases. Care is required to avoid infection.

It is better and safer than any other form of open operative procedure. This method of traction can be used when needed under local anesthesia, without pain, and gives little or no pain afterward when properly applied. Great obliquity in fractures of both bones of the leg, or middle one-third of the femur, with much displacement can seldom be retained in position when reduced except by suitable traction, and that must be sufficient in amount and direction to overcome the tendency to displacement by muscular action, and be absolutely constant until callus consolidation is obtained.

Fractures of the shaft of the femur in the upper and middle third, upper third of the leg in nursing children, or in children under five years of age, are best treated by a double right angle splint from axilla to hips on each side, and extending about four inches beyond the child's feet. These splints are united together by a cross piece beyond the feet, are securely anchored around the chest and hips, perfectly fitted and well padded with felt. Extension adhesive is applied to each leg and thigh for extension, to a cross foot piece. Each leg is firmly bandaged to the padded side piece and splints to the broken leg give additional support and fixation. The Buck's extension is provided through elastic of tested power to the injured leg. The well leg is secured to the foot piece by an inelastic cord. In this apparatus the child can be properly cared for, allowed to lie on either side or on the back, and when old enough can be placed in the sitting position without any disturbance whatever of the reparative process.

Oblique fracture of the lower end of the femoral shaft with marked posterior displacement of the upper end of the lower fragment, can only be retained in normal position by flexion of the knee to a right angle, and sufficient traction by calipers or transfixion pin attached as far forward as possible on the lateral aspects of the femoral condyles.

Oblique fractures of the shaft of the femur immediately below the lesser trochanter, are very difficult to reduce and keep reduced because the upper fragment is strongly flexed, rotated outward and is too short to be controlled by any splint device. Such fractures if they can be contacted at all will require to have the thigh flexed upon the abdomen to about 45 degrees, abducted and rotated outward. Traction then must be applied and maintained sufficient to overcome the gravity of the entire limb, and all its muscular displacing force as well as the posterior displacing influence of weight of the thigh upon the upper end of the lower fragment. Oblique fractures of the shaft, starting above the lesser trochanter, require the same treatment except that the psoas and iliacus which hold the upper end

of the lower fragment forward, tend to strongly pull it upward, while the flexion and external rotation of the proximal fragment will be less, because the ilio-psoas has no hold upon it. The displacement and overriding of these fractures are great. Every form of splint, cast device or abduction treatment is doomed to produce disappointment and result in great and needless shortening and deformity, though most of them will give some sort of union. Properly applied traction will give good union and usually slight deformity without disability.

There are at least eight distinct hip fractures. including those immediately below the trochanters; requiring seven variations or different treatments to obtain the minimum of deformity, non-union, shortening or impaired function. Only one of these varieties should ever give non-union, viz., fracture of the narrow part of the neck in the aged, and in this fracture alone can a cast be depended upon to maintain fixation and prevent shortening, and then only when properly applied, in suitable cases.

Fractures through the narow part of the femoral neck yield bad results in abundance, because (a) never reduced, (b) being reduced are not held in place, or (c) because of the atheromatous condition of terminal vessels which make adequate reparative blood supply impossible. The best results are obtained in these cases by a treatment that will give the patient rest, freedom from pain and overcome the displacing influences of muscular pull and weight as well as rotation. All these are accomplished by a proper application of the so-called anatomic or Maxwell-Ruth method which effects and maintains reduction while exhausting the muscles which are the most powerful in the body. For reduction by this method anesthesia is never needed or indicated, one hypodermic of morphine ¼ gr. and scopolamine 1/150, may be used with advantage in some cases, it is of enormous advantage in the aged and feeble. In from two to four weeks after injury, when the patient has entirely recovered from the shock of the injury, the muscles are relaxed and in many cases some union has taken place, the patient may then be put in a cast if desired, with suitable traction applied during its application without the use of any anodyne or anesthetic whatever. When the cast is applied, before the callus is strong enough to prevent shortening by muscle pull, the foot may be left free of cast and the adhesive traction allowed to remain in place and elastic traction continued of tested amount made fast to a metal extension a few inches beyond the foot. This traction can be continued as long as desired, and be removed or replaced by foot cast or not, as desired. The patient may then use crutches with extension sole on the sound foot. When a cast is applied it should be in full abduction and the injured leg should be included to the toes and the sound side to the ankle. Casts applied in these fractures to the pelvis and one leg cannot be depended upon to maintain fixation in any case, and will fail always in the obese. These patients should be turned on the face two or three times a day for from one-half to two hours. Properly applied, they are not very uncomfortable and should never be painful. Patients having pain enough to persistently require an anodyne when treated by either of these methods, need attention for there is something wrong with the adjustment of the treatment at some point.

In fractures through the trochanters or base of the neck in which the lesser trochanter is broken off the limb should be put on suitable traction with the thigh flexed at an angle to the trunk of 45 degrees. This treatment will usually result in union of the lesser trochanter to the shaft though it may be two or three times as long as the normal.

In all fractures of the upper thigh and hip, it is necessary that absolute control of inversion and eversion as well as prevention of toe drop shall be attained at once and maintained throughout the treatment.

This is best accomplished by a foot piece to which the Buck's extension side straps are attached, and which is perfectly adjustable laterally and in flexion and extension of the foot. This foot piece rests and slides upon an inclined plane made of a smooth board about a foot wide. The extension pulley is usually attached also to this board used as an inclined plane for leg and foot piece rest. These fractures properly treated will nearly always yield satisfactory results, with strong serviceable union and often little or no shortening without regard to the patient's age.

The heavy traction required in many hip cases, should have as extensive application of the adhesive as possible to lessen the pull on any one area and the main traction pieces to the foot pull should always be double, or they will occasionally break with much resulting pain to the patient and often damage to the fracture by displacement of fragments.

Fractures of the narrow part of the neck of the femur and of the base of the neck have a band of ligamentous union remaining between the pelvis and the great trochanter through the Y ligament and it is by the proper use of this ligament, rendered taut and kept in that condition,

upon which all successful treatments of fractures through the narrow part of the neck depend.

Fractures beyond the inter-trochanteric line leave no ligamentous connection whatever between the proximal and distal fragments and abduction, or rotation of the distal fragments has nothing but accidental influence upon the proximal fragment in unimpacted cases. The lesson from this is obvious to those who understand the anatomy of the hip and its muscles.

Failure to secure union of fractures through the base of the neck, trochanters even to complete separation of the lesser and much comminution of the great trochanter, should be rare, indeed, and deformity and impairment of function should be slight.

Non-union of the narrow part of the neck of the femur cannot be prevented in all cases of the aged, but the percentage of failures even in these cases should be not more than 10 per cent, if proper treatment is instituted at once and persevered in.

Non-union of the neck with its complete absorption, does not mean that the patient is necessarily a hopeless cripple, for the head of the bone may be removed, the great trochanter displaced outward and the stump of the femoral neck placed in the acetabulum will give a comfortable bearing surface, of reasonable stability, freedom from pain and ability to walk well within a few weeks with usually not more than one to one and one-half inches of shortening. Even the aged tolerate this operation well.

Nails, screws, and plate removal after their use in bone repair will depend principally upon the operator, in the proper selection of the patient, time of operating, and the aseptic care with which the work was done. Plates placed by Lane do not require removal by anyone. My earlier plates nearly all required removal, now very seldom. Their removal when required is usually trivial.

Fractures of the pelvis in which the head of the femur is driven through the acetabulum, must be reduced promptly or callus formation will make reduction impossible, and traction, longitudinal, and lateral, must be immediately instituted and maintained constantly of sufficient amount to entirely overcome muscular force not only in the vertical but also in the oblique and internal directions, as well, or the head of the bone will be again carried through into the pelvis. Through the vagina or rectum the fragments may be replaced so as to render the inside of the pelvis nearly normal, an especially important consideration in the young female. Failure to secure prompt reduction in these cases means permanent ankylosis of the hip joint in whatever position the limb was allowed to assume after the injury. It is surprising how well these unreduced cases walk if the thigh has been held in moderate abduction during the consolidation of the callus. If the limb has been allowed to assume the position of pronounced adduction the handicap to the patient is very great; in the latter a very good functional result can be attained by sectioning the neck of the femur as high up within the acetabulum as possible, and doing an arthroplasty after the manner of Murphy.

Fractures of the pelvis in which splinters of bone penetrate a viscus as the bladder, require prompt operative removal and drainage.

Other fractures of the pelvis with or without separation of the fragments require fixation which is best secured by a cast encircling the pelvis and both thighs to the knees in moderate abduction. In the very obese the cast will be loose and of no value within a very few days. This defect is readily remedied by removal of a section of the cast in front of sufficient width, after which an ordinary spica may be passed around the cast and tightened by a small rod on the principle of the Spanish windlass. In case more fixation is desired and to avoid pinching of the skin, a piece of sheet metal may be passed under the cast section and the ends bent up over the cast margins. A towel may cover the inner side of the metal to prevent its contacting the skin. In this manner the cast may be tightened at will, and made at all times perfectly rigid and as close fitting as desired.

The bone peg, graft or inlay has been intentionally omitted because they should have no place in the treatment of fractures by the general surgeon.

Operative necessity decreases in exactly the proportion in which mechanical treatment improves in the treatment of fractures.

Conclusions

In general, circular casts may be often replaced by moulded or other splinting to advantage. A good reduction is quite often lost during the application of a circular cast which might have been maintained by using moulded plaster. Ready removal of the moulded splints is an advantage in many cases, giving the surgeon an opportunity to dress wounds, adjust for the shrinking of the limb, carry on passive motion or improve the position of the fragments.

Oblique fractures with a tendency to overriding cannot always be maintained in reduction by casts or splints. This is especially true of oblique fractures of both bones of the leg. In

such cases constant traction should be used until consolidation is complete.

This traction is best made by adhesive on the skin, which may be carried well up above the fracture line, but may be accomplished by calipers or traction pins if the skin area distal to the fracture is insufficient or damaged. In making use of caliper traction, care must be taken to see that there is no traction on soft parts but on bone only, that the calipers are as far away as possible from infection; in healthy tissue and that bone technique precautions be carried on throughout. This may be done under local anesthesia.

Open operations for fractures are not often necessary, but when required, should not be done until all danger of the primary shock and infection are past. Nor should open operation be done on compound fractures already infected, for cosmetic purposes alone, or for the quieting effect on the jury.

DON'TS

1. Don't permit crushing injuries of the astragalus and oscalcis to cause prolonged suffering or permanent disability, but immediately remould under traction. Maintain traction until consolidation. In neglected cases, free the malleoli and peroneal tendons and reestablish lateral motion, flexion, and extension.

2. Don't permit overriding or angulation in Pott's fracture or fractures of both bones of the leg too low for adequate adhesive traction, but use caliper or transfixion pin traction sufficient in amount and long enough continued to prevent undue shortening and deformity.

3. Don't make caliper or transfixion pin traction in the posterior, but as far as possible to the front of the femoral condyles in oblique fractures of the lower end of the femur with backward displacement of the proximal extremity of the distal fragment with the knee in flexion to an angle of 90 degrees.

4. Don't try to treat eight varieties of hip fractures by one or two methods, it is unfair to the patient; gives too many cases of mal or non-union and unnecessary shortening and impaired function.

5. Don't try to maintain extension and prevent overriding by any splint or cast device in any oblique fracture of both bones of the leg, shaft or trochanters of the femur. Suitable traction in one or more directions can alone maintain reduction in such cases.

6. Don't use manufactured splints or encircling casts where moulded splints can be prepared, because the latter can always be made a perfect fit, are adjustable, removable, much more comfortable, safer, recovery is more rapid and complications are less.

7. Don't consider non-union of a fracture of narrow part of the femoral neck six weeks old as hopeless, possibly it was never reduced or if reduced it may not have been kept in reduction and the fragments undisturbed.

8. Don't abandon fractures of the narrow part of the femoral neck with atheromatous non-union as hopeless cripples, even if the femoral neck is absorbed, for they can be given a good, painless, weight bearing limb by removal of the femoral head and introduction of the stump into the acetabulum.

9. Don't delay reduction of fracture of the bottom of the acetabulum with the femoral head driven through into the pelvis, nor allow redislocation of the femoral head by relaxation of sufficient two-way traction in line with the femoral neck.

10. Don't operate for fixation in any infected case sooner than six months after all suppuration has ceased, because it is dangerous and usually useless.

11. Don't lose support of the cast in fractures of the pelvis by loss of adipose but section the front of the cast and keep it tight by use of the Spanish windlass, daily if needed, to take up all slack and maintain adequate fixation and pressure.

12. Don't give general anesthesia for reduction in hip fractures especially to the aged and feeble. It is never necessary and is always an added danger.

13. Don't make promises of results to a patient which no amount of skill may be able to realize.

14. Don't permit toe drop in any case, it is disabling and never necessary.

Discussion

Dr. David S. Fairchild, Clinton—Fractures probably have always occurred, and always will occur. There always have been bad results, there are bad results now, and I venture to say there always will be bad results, and the question for us to consider is how much we can reduce these bad results. The question before us as general practitioners is to determine what we shall do in cases of fracture that come upon us, often as surprises. We do not expect to have a case of fracture and we go to the home of the injured person unprepared as to what we should apply for the purpose of bringing about a fair result. The method of treating cases of fracture that come to the general practitioner may be of a simple character. For myself I feel that I could not carry out all that Dr. Ruth has presented here. His method involves too much technical knowledge. The

first question the doctor will consider when he reaches the patient, and one which he does not sufficiently study beforehand, is the diagnosis—complete and full diagnosis of the case. These cases, occurring as emergencies, lead us in the confusion of the moment to apply almost anything that will seem to reduce the part to its normal condition and then trust to good luck that the temporary dressing can be continued permanently. This is wrong. I believe that every practitioner should have at hand some kind of splint that he can use to advantage in the treatment of fracture after he has made the complete diagnosis. Not complicated apparatus, but simple apparatus that will hold the fragments in place. Some doctors treat their cases of fracture at the hospital, others treat them at home. And the man who treats them in the hospital has advantages the other cannot have. But if the latter has at hand a comfortable type of splint, one he is accustomed to, then he may be able to apply it and bring about a most desirable result. I have heard read many papers upon the fine results obtained by different kinds of splints, but have had to analyze 101 suits for malpractice in cases of fracture. I feel that I ought some day to write a paper on the bad results of the treatment of fracture instead of the good results which we have had. It is a simple matter for every physician to have at hand some means that he knows how to use. He should not employ an apparatus he does not understand and which does not fit the particular case, and which case he has not thoroughly diagnosed. If he applies a splint that does not fit and depends upon that, the final result is bad. It is not so much lack of skill in the treatment of these cases as it is the failure properly to diagnose the condition.

Dr. F. R. Holbrook, Des Moines—The remarks I have to make will be on the paper presented by Dr. Krause, for one reason only; and that is, while the paper was especially worthy, I feel that he did not sufficiently emphasize the point of intracranial pressure. That is the basis of the treatment of fractures of the skull, in fact there isn't anything involved except that. Intracranial pressure is the reason for the bad results and for the fatalities in these cases. Of course those desperate cases in which there is extensive damage by injury and sepsis are not included. Intracranial pressure is the fact or that causes trouble in all of them. One thing that gives rise to increase of pressure is the blocking of the cerebrospinal fluid. Eighty years ago Magendi established the fact that the subarachnoid spaces of the cerebrum and the subarachnoid space of the cord are continuous. The channel is one continuous affair, and the cerebrospinal fluid circulates just as truly as does the blood in the vascular system. Anything that blocks this circulation causes increased intracranial pressure. Therefore all our efforts should be directed towards the correction of this condition. Formerly we waited until the patient developed stertorous respiration, slow pulse, etc., believing that was our time to interfere. Those manifestations were signs of a terminal condition, just as is spreading peritonitis in a case of ruptured appendix, when we cannot do anything. If you cannot diagnose increased intracranial pressure long before that stage you can do nothing because the condition is hopeless at that time. The only means of determining increased intracranial pressure early, is by lumbar puncture. You can then get an accurate measurement of the condition and that is what should be done. You do not have signs of increased pressure until late. You have to diagnose this condition early, basing your treatment on an accurate reading of intracranial pressure. Having read the degree of pressure by means of the mercury manometer, you then know immediately and accurately just where you stand. If the pressure is of a certain magnitude it has to be relieved, otherwise you will have a fatality. The next point is, what is the treatment? Decompression used to be and still is a good operation, but it fails in one point, and that is it does not relieve pressure below the tentorium cerebelli. The pressure is on the medulla, and spinal drainage does relieve this condition because it takes pressure off the medulla. Therefore all these cases should be treated by spinal drainage at the outset, a decompression operation being done at such time as the indications warrant.

Dr. Bendixen—The aerosplint has advantages over the Jones' splint in a number of ways: First, that you do not get pressure under the axilla, and there is no damage done to nerves or vessels. Second, you can elevate the arm and relieve the tension on the deltoid and other muscular structures of the upper arm. Third, in case you should get an ankylosis in the glenoid cavity, by putting the arm up at an angle of 60 degrees, you have a certain range of motion in the scapula whereby the individual has 60 per cent abduction and also 60 per cent adduction, giving him a range of practically 120 degrees. Referring to Dr. Krause's paper, in regard to increased intracranial pressure, I want to state that in treating fractured skulls we have practically eliminated decompression operation. If we find that the spinal fluid pressure is above 10 m.m., we drain and bring the pressure to approximate normal every other day if necessary, and our results have been much better. As to Dr. Ruth's paper, I am surprised to see on the screen that the Doctor uses so many Lane plates when other and more desirable materials are available.

Dr. Ruth—In regard to Lane plates being troublesome, they used to be to me. If put in right they do not cause any trouble. I do not find it necessary to operate as many of these cases now as formerly, and in my paper I mentioned one or two that were operated on which I would not need to operate now. (Lantern slide.) This simply shows the method of applying the pull in two directions. It is to hold the upper end of the lower fragment forward in contact with the short flexed uncontrollable upper fragment broken just above or below the lesser trochanter. The pull in these cases will be upward

and outward, and accompanied by sufficient longitudinal pull to overcome displacement of fragments from vertical muscular action. (Lantern slide.) This shows a case in which unrecognized fracture through the narrow part of the femoral neck had occurred twelve weeks before with non-union. This was nine years ago. We reduced and nailed fragments. For this procedure no general anesthetic is required. Inject a little local anesthetic, and drive the nails in through small punctures in the skin. At the end of twelve weeks we had secured union in this case without subjecting the woman to any danger whatever. The nails have been in place for nine years—function perfect. (Lantern slide.) Here is a case in the service of Dr. Fay which had gone without union for fifteen weeks. We drove two nails in, put on a cast, and this shows the result. The man is wearing those nails yet after three years, and he walks without any impairment of function or any limp. (Lantern slide.) Here is a case of non-union with complete absorption of the neck of the femur. We took the head of the bone out, and this man was able to bear his weight on the leg inside of five weeks. He now, two years later, walks without pain or trouble. You see he has a slight abduction. We did not maintain as much abduction as we should have done. He stands with both feet on the floor, and this picture shows the tilting of the pelvis to enable him to maintain parallelism of the limbs with both knees extended. I have had four cases of this type that I have operated on, with three successes. No deaths. The failure was due to lack of cooperation on the part of the patient.

ANGIOMAS OF THE THROAT*

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Of the benign tumors involving the throat, angiomas are rather rare. In going over the literature, a good many case reports were found of angiomas of the larynx but very few of the pharynx and tonsil region. In 1884, Elsberg,[1] in writing upon angiomas of the larynx, was able to find reports of only five cases. In 1888, Glasgow,[2] reported a case and Kidd[3] reported another in 1892. Anderson[4] in 1895, reported a case of angioma of the pharynx. It was a small growth about the size of a blackberry and was situated on the right side of the throat encroaching upon the margin and upper border of the soft palate. He states that neoplasms of the pharynx, with the exception of papilliomata, are extremely rare. Becco,[5] in 1917, reported a case of angioma of the pharynx. The growth was the size of a hazel nut and situated on the posterior wall of the pharynx near the posterior pillar. In the more recent literature, Moore,[6] in 1923, collected seventy-three cases of angiomas of the larynx, sixty-five hemangiomata and eight lymphangiomata.

SYMPTOMS

The symptoms of angiomata of the upper respiratory tract are practically the same in all cases, hoarseness and obstruction to breathing and swallowing are the first and most constant signs. The hoarseness may be intermittent or gradually increases until the voice is gone. There is usually little or no pain. Hemorrhage of a varying degree was found in about 15 per cent of cases. Cases of fatal hemorrhage have been reported. The amount of obstruction depends upon the size and location of the tumor. Complete respiratory obstruction has very rarely been observed. Coughing is one of the most troublesome symptoms.

ETIOLOGY

Little is known about the causes of hemangiomata of the pharynx and tonsil region. So few cases have been reported that no constant factors have been established. They usually appear or begin to cause trouble at about twenty to thirty years of age. Elsberg feels that chronic irritation from any source is a causative factor. The congenital origin of angiomas of the larynx is acknowledged by many of the writers.

PATHOLOGY

Ewing[7] describes four types of angiomas: (1) capillary; (2) arterial; (3) venous, and (4) cavernous. They may be found in the skin, muscles and practically all tissues and organs of the body. The cavernous type is of more clinical interest on account of its frequency, size, and tendency to invade surrounding tissues and organs. Although angiomas are generally considered to be a benign growth, Ewing describes a type of cavernous angioma, which is more cellular and exhibits certain peculiar features of malignancy and are eventually fatal from metastasis and internal hemorrhage and anemia. The cavernous angioma is first a circumscribed tumor and tends to steadily enlarge over a long period of time. Thoma refers much of the growth to mechanical factors. Increase of blood-pressure and loss of support to vessel walls from changes in the surrounding tissue tends to excite new growth of vessels. Angioma is a tumor composed of newly formed vessels and when the vascular channels are widely dilated and the connective tissue septa are thin, the tumor is designated as the cavernous type. The rough appear-

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ance on section has been compared to that of a sponge.

The cavernous type is the one usually seen about the throat. The chief characteristics of the tumor are its dark blue color, smooth surface which is soft, and the fact that growth decreases in size with gentle pressure. Angiomas may be attached to any laryngeal structure although about the anterior commissure is a very common location. They usually have a broad flat base but a few pedunculated angiomas of the larynx have been reported.

Treatment

The treatment is the removal of the tumor and many methods have been used. Elsberg, in treating angioma of the larynx, preferred the instrumental removal by pinching, combined with torsion and evulsion. He removed the tumor through the mouth by means of the laryngoscope. He mentions galvanocautery, caustics, and excharotics, but feels that if they are powerful enough to be effective, they are very likely to cause spasm of the glottis. On the other hand, if not sufficiently powerful, they are more apt to cause an increase than a decrease in the size of the tumor. Kidd removed an angioma from the larynx with a cutting forcep and then used galvanocautery on the base.

Becco thinks the hot snare should be used on small pedunculated angiomas of the pharynx and the gradual destruction by galvanocautery on the larger tumors.

Other methods used with more or less success were injections of hemostatic liquids, such as the chloride of lime, alcohol, boiling water and the perchloride of iron, carbon dioxide snow and electrolysis have been used with some success.

All writers refer to the great danger of hemorrhage in the removal of angiomas.

Moore gives the following statistics in seventy-one cases recorded.

(1) In unoperated cases, twelve of the seventy-one cases had hæmoptysis. It varies from a small amount to profuse severe hemorrhage.

(2) In operated cases, amongst the total seventy-one cases, operative treatment was only definitely carried out in forty-one cases. Removal by forceps was employed in nineteen cases, the cold snare wire in five cases, galvanocautery in seven cases, thyro-fissure in seven, suspension laryngoscopy and excision with scissors one case, and radium two cases. Amongst the thirty-nine cases operated on considerable or severe hemorrhage occurred in twenty-five cases and none or slight in fourteen. Fatal hemorrhage occurred in three cases.

Radium was first used in the treatment of angiomas of the throat by Ryerson. New and Clark[8] have since reported its use in three cases successfully. They believe it is specific for all true vascular growths of larynx as well as other parts of the body. The method of choice is suspension laryngoscopy and inserting radium directly against the tumor.

Report on Case—The patient, S. M., male, age twenty-one, reported for examination July 1, 1921, with the following history. As a child he had repeated attacks of tonsillitis. Seven years prior to his examination the tonsils were removed and he made a prompt recovery. The bleeding was not excessive at the time of operation. He states that he had experienced almost constant sore throat, starting two months following the operation. This was never severe and did not cause any great trouble until three or four months before reporting for examination when the soreness became more marked. There was a constant feeling of fullness in the throat and considerable difficulty in swallowing and breathing when lying down. He was annoyed considerably by paroxysms of coughing and often had some slight bleeding from his throat at these times. He had intermittent spells of hoarseness but never complete loss of voice. He had considerable nasal obstruction which was constant and usually on the right side.

The past medical history was practically negative. He had measles, mumps and scarlet fever, but no serious illness. Examination of the throat revealed a clean tonsil fossa on the left side and a rather large piece of tonsil at the lower pole on the right side. On the right side of throat there was a tumor involving the tonsil fossa, soft palate, and extending forward well in front of the region of the anterior pillar and down in the walls of the pyriform sinus. The larynx proper was not involved. It came one-third way to the mid-line, was soft and a dark bluish color. The surface was rather irregular and showed marked varicosities. Steady pressure for a short time would almost cause the tumor to disappear and it would promptly return to its original size when the pressure was released. The mass seemed more firm when the patient was lying down. The posterior pharyngeal wall was smooth and partially covered with a thick muco-purulent discharge. The larynx was normal, except for some thickening of the true cords. The nasal septum was thick and deflected markedly to the right, and the right antrum was full of foul pus. He was referred for general physical examination which was found negative except for a rather marked case of hemorrhoids. The skin of the face showed one or two slight varicosities. The blood Wassermann was negative. The red blood count was 6,000,000 hæmogloben 90 per cent, whites, 7,600, and a normal differential count. Blood-pressure 136 systolic, and 86 diastolic. A diagnosis of hemangioma was made, probably of the cavernous type and the following treatment carried

out. The treatment consisted of insertion into the tumor of steel needles each containing ten milligrams of radium element. The walls of the needle were 0.4 millimeter thick. Such a needle left in place six hours will produce an area of necrosis about one centimeter in diameter. On account of the danger of hemorrhage the needles were first inserted three or four centimeters apart and introduced rather deeply but around the periphery of the tumor. On August 20, 1921, three needles were inserted for three hours; September 14, 1921, three needles for four hours; October 13, 1921, three needles for four hours, and on December 6, 1921, three needles for four hours. With each successive treatment the needles were inserted nearer the center of the mass. The bleeding was never excessive but there was always a gradual oozing for five to six hours following the removal of the needles. After the second treatment, rather a marked reduction in the size of the tumor was noted. The margins were firm and did not pit to any extent on pressure, and the mucous membrane became rather pale. Six weeks following the last treatment, which was December 6, 1921, the tumor had entirely disappeared. The entire area previously involved by the tumor was firm, much more so than normal tissue. The mucous membrane over the entire area was a greyish white and ordinary pressure met rather firm resistance. The pain had gradually disappeared and the patient was able to breath and swallow without difficulty. He was examined a year later and no change was noted in the area.

CONCLUSION

(1) The great danger of treating angioma of the throat or any part of the body is hemorrhage.

(2) Cutting operations are contraindicated, except in those cases in which radium has failed to produce a result and the tumor is of such size that the obstruction is becoming marked.

(3) Radium inserted against the tumor is the method of choice, judging from the case reports of New and Clark, Ryerson, and Moore.

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Discussion

Dr. Thomas R. Gittins, Sioux City—Unfortunately I am unable to really discuss this case report by Dr. Foster because I have never had an experience of this kind. About a year ago while visiting at the Mayo Clinic I saw a number of cases of hemangioma and lymphangioma of the tongue and mouth with Dr. New. He was treating these cases with radium and was obtaining very satisfactory results. In a personal communication from Dr. New a few days ago he said that he feels that radium is really a specific in this class of tumors in children. There is one difficulty in the use of radium about the head which has been brought home to me of late, that is, the effect upon the exposed bone. About nine weeks ago I removed a small endothelioma from the tear sac region. A few days later radium was used in the open wound. During these nine weeks there has been absolutely no tendency for granulations to form. The exposed bone over the frontal sinus and ethmoid region is denuded of periostium and very white. A plastic operation was done to close this wound but the sutures immediately sloughed out and the wound is as wide open as ever with the white bone still presenting. Dr. Fenton of Iowa City reports considerable difficulty of this same kind with the jaw cases under his care.

Dr. E. P. Weih, Clinton—About one year ago I had a patient come in with an hemangioma of the soft palate. I suggested radium and the patient went to Chicago for treatment. He had one radium application for one hour and was asked to return in about two months. I saw the patient again in about two months. The hemangioma had slightly decreased in size but I thought he should have another radium treatment so again sent him to Chicago. He returned to me from Chicago the next day saying that the doctor there said that he did not need any more radium and that in time the tumor would disappear. I saw this patient again in about six months and the tumor mass had completely disappeared.

Dr. Foster—I appreciate the discussion of this case report. In answer to the question regarding the end results—the mucus membrane over the surface of the tumor was smooth, pale and underlying structures seemed very firm. There were no remaining varicosities except at the lower border of the growth well down in the pyriform sinus where it was difficult to place the radium. The patient was examined one year later and there was no evidence of a tumor. From all recent literature we reach the conclusion that radium is a good substitute for cutting operations in the treatment of any angioma.

FULL TIME EXECUTIVE SECRETARY

Mr. Harvey George Smith has been appointed by the council as executive secretary of the Michigan State Medical Society. Mr. Smith is a graduate of the University of Wisconsin. He engaged in organizational work under the auspices of the Michigan Agricultural College, and during the war was on the food conservation sub-committee. He has been in Russia and Bulgaria since 1919, under the auspices of the Y. M. C. A. and Red Cross. The council plans to have Mr. Smith work under the direction of Dr. Frederick C. Warnshuis, who will continue to be the secretary-editor.

—Journal of American Medical Association.

THE PREVENTION OF POST-OPERATIVE INTESTINAL INCOMPETENCE*

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Mister Speaker and Gentlemen of the Assembly:

In discussing this subject I have in mind a condition in which there is cessation of the normal mechanical functions of the intestinal tract after an abdominal operation. It is assumed that there is agreement as to the factors immediately concerned in its production, the pathology in the average case being represented by mechanical hindrances on the one hand, and by paresis of the intestinal musculature on the other hand.

In addition to what is revealed at autopsy, the clinical course of patients who have had the benefit of timely enterostomies furnishes extremely interesting and valuable information, and leads to the belief that actual mechanical barriers are, in the case of the average patient, of limited extent, and that they play a minor role in the production of so-called post-operative ileus.

It is well known that when an enterostomy is performed before the development of marked toxemia, the evidences of obstruction, in the average case, soon disappear. Within a few days there is spontaneous evacuation, and it is not long until the patient who has been in dire distress, with pain and vomiting and distention, is relieved so far as these symptoms are concerned, and some days later the enterostomy fistula closes without operation of any kind. What has been done for the patient? A small catheter has been introduced into a distended intestine through an opening in its wall so that toxic liquids and gas might escape, thus permitting the distended intestine to collapse—that is all. What is the explanation? There appears to be but one reasonable hypothesis, and that is that the essential cause of the condition was a paresis of the intestinal musculature. As soon as the distention was relieved the musculature had an opportunity to rest, and after it had rested it was able to function.

It would not appear, then, that, in the average case, there is an actual mechanical obstruction that would greatly interfere with the onward progress of intestinal contents, under even fairly normal conditions, but it does appear that even minor mechanical hindrances may be effective when there is behind these hindrances a toneless and helpless intestinal musculature.

The term "ileus" has been used rather loosely to designate the condition of which I have spoken. It is hardly an appropriate term from either an etymological or a pathological point of view. It is derived from a verb meaning to twist, but it is not at all certain that twisting takes place very often in the condition usually called post-operative ileus. Adynamic ileus is a little better, because it expresses the lack of physical strength, but there is no reason to believe that adynamia is necessarily or particularly associated with twisting. Post-operative obstruction is not a good term because it emphasizes the importance of a mechanical barrier which is believed to be, relatively, of minor importance.

Taking into consideration, then, the conclusion, that seems to be supported by clinical and pathological data, that the determining factor in the production of this post-operative catastrophe is exhaustion of the intestinal musculature, the term "post-operative intestinal incompetence" would appear to be an appropriate name, for the reason that it more distinctly indicates the type and the location of the dominant pathology.

Manifestly, there are certain pathological conditions, such as extensive damage of the nervous system, profound toxic states and widespread peritonitis, in which intestinal incompetence cannot usually be prevented. There are also, certain conditions in which the surgeon may deem it wise to perform a provisional enterostomy as a prophylactic measure in connection with the primary operation, as, for example, certain operations directly involving the gastrointestinal tract. But here I wish to speak of the incompetence that, without proper management based upon an intelligent conception of the pathology, may develop after the average intraabdominal operative procedure.

In order that we may have additional information to assist in the formulation of preventive measures, let us try to visualize the surroundings and circumstances in connection with the average surgical operation involving the organs of the abdominal cavity. In addition to the temporary paralysis of its nervous mechanism due to the anesthetic, the intestinal tract is traumatized to a greater or lesser degree. When we reflect upon the varied types of pathology encountered by the surgeon, and take into consideration the necessary operative procedures—the handling, the cutting, the separation of viscera, the sewing, the re-adjustments, the damage of the blood supply—the truth of this statement is apparent. Regardless of the knowledge and the wisdom and the cleverness of the surgeon, there is trauma—trauma inflicted upon viscera already crippled by the pathology that makes the operative procedure

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necessary—trauma through which the intestinal tract, on account of its extent, location and environment, is practically always damaged. As a result of these things, the patient leaves the operating room with the functional ability of the intestinal tract greatly reduced.

Based upon the pathological facts that I have tried to point out, there are, in my judgment, three requirements of prime importance in the prevention of post-operative intestinal incompetence—the administration of water, and the securing of rest and sleep. These requirements are important before operation; after operation they may be indispensable.

If it is true, as I believe it is, that the mechanical element in this condition is not incompatible, in the average case, with saving function of the intestinal tract, under fairly normal circumstances, the principal problem in our efforts to prevent incompetence should be to conserve the ability and the energy of the intestinal musculature, or to take steps to restore it to a condition of functional usefulness. I believe that through the assiduous application of the requirements mentioned these results may be realized.

Obviously, no organ can function without an adequate supply of water. The body is composed largely of water. It is necessary for the proper activity of the cells of the body everywhere. When the supply falls below certain limits, function is reduced or lost. And yet, it is a common observation that the patient who is to be subjected to a serious surgical operation is deprived of water for hours, sometimes even days, while much that is in him may be taken out by unnecessary—I think I should say dangerous purgation. There have been many examples that prove that animals may live without food for many days if they have water. If they are deprived of it they die relatively early. The function of the musculature of the intestinal tract depends upon the activity of the component cells. They atrophy and die without water.

After operation water is particularly necessary. It may not be desirable to give it by mouth, but it can always be given. It may be given by proctoclysis. It may, in proper form, be given by hypodermoclysis, which is one of the most effective routes. If necessary, it may be given intravenously. It should be given in some proper form by some proper route, because the resumption of functional activity depends upon it to a very large extent.

After an abdominal operation, I cannot conceive of requirements more essential—more absolute—than rest and sleep. Even in the healthy state of the animal body there must be rest and sleep. If the animal is deprived of either it can not long be in a state of health. If these things are necessary under ordinary normal conditions, they are many times more necessary after an operative procedure. If this is true, there should be no hesitation on the part of the surgeon in taking the steps necessary to make it possible for his patient to rest and sleep after operation. In my humble opinion, the neglect of this duty is no less than a species of cruelty that may jeopardize not only the comfort but the best interests of the patient. Believing this, I do not hesitate in the average case, when the inability to rest and sleep cannot be attributed to causes amenable to other management, to give morphine. It is usually not necessary to give large doses—one-sixth grain hypodermatically being the dose for the average adult patient. It should be repeated, if necessary, the frequency of the repetition being determined by the condition and peculiarities of the patient. Through its proper use, the patient is able to rest and sleep. He has general rest—and, what is of particular interest in considering the prevention of intestinal incompetence—the musculature of the intestinal tract is permitted to rest.

I would not undertake to say that such a potent agent as morphine does not have inherent dangers, but I am convinced that those dangers are not applicable to the intestinal tract during the first few days after an abdominal operation. Indeed, I regard it as a *sine qua non* in the case of many patients during this period, because it not only makes it possible for the patient to have general rest and sleep, but particularly because it makes it possible for a bruised, crippled, irritable intestinal musculature to rest and regain its tone.

While general rest is desirable and necessary, rest of the gastrointestinal tract after abdominal operations may be, in my judgment, an imperative necessity. To that end, in addition to the means of which I have spoken, I believe that no food should be allowed for two or three or more days after operation. It has been a frequent observation that on the next day after operation the patient is comfortable but hungry. If on that day food is not allowed, the next day he will be neither uncomfortable nor hungry. If food has been allowed on the day following operation, the next day he will often be neither comfortable nor hungry—sometimes on account of the upset resulting from the early taking of food he will feel that he will never again be hungry.

I am arrived now at the most important part of this discussion, and that is in connection with the use of cathartics, stimulating enemata, and other agents, such as pituitrin, that produce spas-

modic efforts of the intestinal musculature. We have found that after an abdominal operation the intestinal tract is always damaged to a certain extent. In many instances, it has been terribly damaged, and, like any other crippled organ—like the hand, for example, or the foot—when it is crippled it can not function. If the hand or the foot or a limb is traumatized it is permitted to rest. It is not only permitted to rest, but steps are taken in the way of support and protection so that it will be the better able to rest. The situation is not exactly analogous, because the jeopardy to which these members are exposed without protection represents to only a slight degree the jeopardy to which the gastrointestinal tract, without an adequate sensory nerve supply, is exposed after many abdominal operations. Instead of the orderly persistaltic movements in the proper and normal manner and in the proper and normal direction, originating in a proper and normal way, there are confused, conflicting, spasmodic efforts in many areas on account of irritation of the intrinsic ganglia of the intestine, and on account of the damaged blood supply through which the cellular structures in certain parts of it are, for the time being, at least, robbed of pabulum necessary for even the least function. In the presence of such a pathological condition, any agent that causes irritation aggravates the abnormal efforts, and in the case of some patients, if the aggravation is kept up, it leads to disaster.

Cathartics are irritants. These agents act through the process of irritation, and since irritants aggravate the existing abnormal movements of the intestinal tract after abdominal operation, they should not be given. While most of the patients to whom they are given may escape with their lives, a certain number will not be able to bear the additional insult, and the only hope for them will be in the performance of an appropriate emergency operation for the relief of complete intestinal incompetence. So thoroughly do I believe this, that I would consider it just as reasonable to order a patient with a broken leg to jump out of bed and try to run a race as to order a cathartic for a patient who has just had an abdominal operation.

Taking into consideration the pathology, the intestinal tract should be permitted to rest. There is no reason to get excited about moving the bowels. In my clinic we do not bother about moving the bowels. Frequently, if the patient is let alone, the situation will take care of itself. If not, after all evidences of irritation are gone—usually on the fourth or fifth day—a low enema of one pint of plain warm water is given—nothing else. This is repeated daily as necessary—never more than one pint—usually never more often than once a day. The result is that the postoperative course is characterized by comparative comfort and happiness.

Stimulating enemata are not quite as bad as cathartics because the small bowel is not directly involved, but since they produce their effects through irritation they are bad. They are bad for the same reason that cathartics are bad—because they irritate a crippled intestine that ought to rest, and in that way interfere with the resumption of lost tone and the establishment of proper function.

I am often asked what should be done in the unfortunate case in which there is rapid development of distressing and dangerous gatrointestinal symptoms soon after operation. In such a case, the patient vomits frequently, there is pain and great abdominal distention. No flatus is expelled. This condition, with the pain and repeated vomiting, and great tympany, surely presents a situation that should be approached with care. The patient in this condition has a potential incompetence. It is in just exactly this kind of situation that cathartics and enemata and pituitrin, or some other powerful agent are often employed upon the altogether unreasonable and dangerous theory that the gastrointestinal tract can be forced to function, and the average result is disaster. The application of such measures runs counter to every sound and reasonable conception of the pathology.

What should be done for the patient in this condition?

1. Wash out the stomach. Repeat the lavage every two or three or four hours, if necessary, until the material returned does not indicate regurgitation of intestinal contents, or, if it is preferred, introduce a duodenal tube and let it stay in, the necessity being to keep the stomach, and incidentally, the upper intestine as free as possible of toxic material.
2. Give morphine, and repeat it often enough to keep the patient comfortable.
3. Give water by protoclysis, hypodermoclysis, or some other appropriate way.
4. Give nothing by mouth.
5. Introduce the end of a colon tube just well above the sphincter occasionally, and let it remain for an hour or two.

If these things are carried out methodically, and if the patient has the ordinary care and protection that any very sick individual should have, the vomiting will cease, in the course of some

hours the distention will begin to disappear, the patient will require morphine less and less often, and in a day or two the surgeon will be able to write on the progress sheet "condition satisfactory".

Let me assure you that this, as far as I am concerned, is not a theoretical discussion. For nearly fourteen years I have not employed cathartics after abdominal operations. I have tried to put into application the requirements of rest and sleep and water. This plan has stood the test over a considerable period of time. I believe in it with all my soul. I believe that through its application lives are saved. I trust that those who do not agree with me will ponder what I have said, for I am convinced that in this way it is possible to prevent intestinal incompetence after the average abdominal operation.

PROPHYLACTIC BLOOD TRANSFUSION AS A ROUTINE MEASURE IN POOR OPERATIVE RISKS*

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Blood transfusion is today a familiar procedure in every hospital, thanks to the work of Crile, Moss, Linderman, Lewisohn, Unger and many others, who have simplified and perfected the technic so that it is now a comparatively safe and most valuable therapeutic measure.

The procedure is also familiar to the laity due to the frequent exploitation by the daily press of such good news copy as the "heroism" displayed by a relative or friend in sacrificing their blood to save one dear to them.

But to some of the profession and to the lay mind certainly, blood transfusion is still regarded as a measure of resort in desperate cases only, such as severe anemias and profound post-operative shock from hemorrhage.

I wish to call attention to the great value of blood transfusion as a prophylactic preparatory measure in patients who are to undergo any severe or prolonged operation, where shock or considerable loss of blood may be anticipated, and also in patients who are to have minor operations involving blood loss and who have a lowered resistance, due to anemia or other causes.

Gynecological patients more than any others are most likely to have an associated secondary anemia of varying degree, due of course to the menorrhagias or metrorrhagias so frequently present in uterine or adnexal disease. Thus in the Woman's Hospital in New York, we perhaps see a larger proportion of patients with anemia who have to undergo operation than is usual in a general hospital. The cases with fibroids, carcinoma uteri, idiopathic uterine bleeding, the incomplete abortions and ectopics are all most likely to have an associated secondary anemia of varying degree. Many such cases are dangerous operative risks, yet until recently it has been customary to operate upon such patients, often with an hemoglobin of 50 per cent or less, and a marked loss of erythrocytes, with an inevitable higher mortality rate, than is necessary, although a blood transfusion may be done after the operation as a last resort when the grave condition of the patient is realized. Indeed, I am under the impression that today such is the usual practice in many of our hospitals.

Furthermore, our conception of the amount of blood lost in the course of an operation is in general very vague. This has been recently pointed out by Gatch and Little[1] of Indianapolis in a study they have made of this subject.

Our idea as to the amount of blood a healthy individual can lose without marked inconvenience is based on our observation of blood donors. In our experience 500 c.c. to 750 c.c. is the average amount of blood that can be taken without symptoms, and that over that limit distressing signs begin to occur. The giving up of 500 c.c. of blood by an ordinarily robust individual certainly calls for no "heroism", and our internes are frequently glad to earn some extra money in this way.

Laboratory experiments confirm these observations as it has been shown that animals can lose 25 per cent by volume without bad effects. Gatch's and Little's observations approximate our own experience in this regard. Their method of determining the blood lost at operation was based on colorimetric measurements of the blood recovered by washing the gauze sponges used. Their results showed that the method was accurate within 5 per cent.

A pan-hysterectomy for fibroids showed a loss of 304 c.c., a radical breast amputation in a vascular case showed a loss of 710 c.c., a nephrectomy showed 816 c.c. It is easy to see that the loss of such amounts during operation in a patient with an hemoglobin of say 50 per cent and with less than 3,000,000 red cells, may seriously endanger the patient's life. Especially is this true when we consider that such a patient's resistance may be still further lowered by the added shock to the sympathetic system of a severe or pro-

*Read before the Inter-State Post Graduate Assembly of America, Milwaukee, Wisconsin, October 27-31, 1924.

longed abdominal operation. Likewise in extensive vaginal plastic operations, there is nearly always a continuous capillary oozing of blood, which amounts to a considerable loss in an operation requiring an hour or more for its completion, and which owing to its insidiousness, is frequently not fully appreciated by the operator.

Our experience at the Woman's Hospital in a considerable number of cases shows us that 500 c.c. of blood as a prophylactic preparation for operation in cases of secondary anemia is sufficient in the majority of the patients to bring the blood condition up to safety limits. Occasionally a second, or even third transfusion may be necessary in very low blood states, but we find this unusual. Undoubtedly this is due to the stimulating effect on the blood making organs that a transfusion produces as evidenced by the progressive improvement in the blood state that continues for some time after the transfusion.

This fact is fortunate as it makes the obtaining of donors much less difficult, if not more than 500 c.c. are taken, and with a donor available there is no excuse for not bringing our patient to the operating room with her resistance at the best possible state in order to withstand the ordeal to be undergone with the maximum of safety.

All that is necessary then, is the ability to perform the transfusion. Thanks to the work of Lewisohn, anyone with the knowledge of the simple technic of an intravenous infusion, can give a blood transfusion by the citrate method which is familiar to you all.

At the Woman's Hospital we use the direct method, as we believe its advantages make it well worth while, although formerly the citrate method was used. The technic we employ is that of Unger,[2] which has proved very satisfactory in our hands. Our internes are all trained in the technic, and in the past two years no interne has graduated from the hospital who is not an expert in giving a direct transfusion, and in typing and matching the donor and recipient's blood.

I have recently reviewed the blood transfusions done at the Woman's Hospital during the past two years by the direct method, and I have also had a study made of the reactions in this series by two senior Cornell students (Souter and Duryea) during their course at the hospital, which will be shortly published.

In spite of the perfected technic and the more accurate methods of typing, post-transfusion reactions occur in about 25 per cent of cases, but fortunately the danger of gross incompatibilities may be said to be eliminated, and the reactions observed are usually not of a severe type, and are not sufficient to counteract the great therapeutic advantage of the transfusion. Still we cannot feel that the technic of blood transfusion is perfected until we can eliminate reactions in all cases. The cause of these reactions is still obscure and we cannot foretell when a reaction will or will not occur. As yet the problem has only been solved in its grosser aspects. The experimental work of Guthrie, Huck and Pessel[3] has shown that it is probably necessary to modify the accepted classifications of the blood types of Jansky and Moss as they have demonstrated five isoagglutinins and isoagglutinogens in human blood. It is probable that the skill and dexterity of the operator in making a speedy transference of blood is a factor of considerable importance.

Our method is to use the Moss classification and the hanging drop method in the typing, and in addition the donor and recipient's bloods are directly matched in all cases for at least thirty minutes. We regard this last step as of the utmost importance in checking up on the compatibility. We also consider it very necessary that the donor's blood state be checked up at the time of the transfusion as it has occasionally happened that the donor has had an unsuspected secondary anemia. This is especially so if a professional donor is being used, and will of course give a disappointing result. Many patients will be saved if every case is typed as a routine and a list of donors kept available for emergency use.

Our study seems to show that transfusions of more than 500 c.c. of blood were followed with a higher percentage of reactions than with the smaller amounts, and repeated transfusions increased the percentage of reactions. We do not find that a transfusion increases the blood-pressure to any marked extent, and therefore do not hesitate to give a pre-operative blood transfusion in cases of internal hemorrhage such as in ectopics, as we do not fear further bleeding from increased pressure. We have also observed that at the end of forty-eight hours the highest percentage of increase in hemoglobin and red cells occurred in those patients who had had reactions.

It is our practice in cases of profound operative shock to give immediately an intravenous infusion of 250 to 300 c.c. 6 per cent gum acacia and 20 per cent glucose solution at a rate of 4 c.c. per minute at a temperature of 105° F, as advocated by Farrar,[4] which will at once raise the blood-pressure and hold it for several hours, thus combating the state of shock until the blood transfusion can be given. This we find is a safe and most valuable aid in an experience of many hundreds of such infusions.

We now have accurate records of 282 direct blood transfusions done on the gynecological ser-

vice of the Woman's Hospital during the past twenty-six months, which record the temperature, blood-pressure, pulse, and complete blood examination before, directly after, two hours after, and forty-eight hours after the transfusion, in addition to the general facts concerning donor and recipient. Prior to that time, the records did not give complete details, the methods were variable and the technic was not standardized, and the transfusion was in general used only as a resort in desperate cases. Of these 282 transfusions, more than 50 per cent were pre-operative prophylactic transfusions, done to bring the patient to the operation with her maximum of resistance, and in addition a considerable number were done at the time of the operation or immediately after as a prophylactic measure and not because of the precarious condition of the patient. I wish to emphasize the point that in many of these cases, the patients were not in a state of marked secondary anemia but showed a moderate loss only, as for example 65-70 per cent hemoglobin and 3,000,000 to 3,500,000 red cells. That this preparatory treatment was well worth while, is unquestionable, our mortality and morbidity being reduced and the beneficial results, as shown by a much speedier and smoother convalescence, are acknowledged by the entire staff. I feel sure that the adoption of routine pre-operative blood transfusions in patients, whose resistance has been lowered, or whose blood examination shows a reduction under 75 per cent, will reduce the operative mortality rate of any hospital as it has ours, which last year was 1.6 per cent for all cases.

One of the great benefits that has come out of the hospital standardization movement, which was first stimulated by Codman, is that today we give careful pre-operative study to our patients. The light of the staff conference beats too strongly on our after results to allow of the railroading of the patient to operation when no emergency exists. Thus with a better knowledge of our patient's condition we have no excuse for not giving her the advantage of this valuable prophylactic measure, should her resistance and blood state require it.

In conclusion I would emphasize the following:

1. That blood transfusion should be employed as a routine prophylactic measure before operation much more frequently than is the present practice, especially in gynecological cases.

2. That every interne on graduation from a hospital should be competent to make the necessary blood typing and blood matching technic, and to perform a blood transfusion, preferably by the direct method. The blood examination is often necessary at night or on holidays when the laboratory force is not available. This implies definite instruction and the skill which comes with practice.

3. That 500 c.c. of blood is sufficient in a large proportion of cases for a prophylactic transfusion, and thus this amount is not sufficient to cause the donor distress.

4. That the amount of blood lost in many gynecological operations is not always appreciated by the operator and is a factor that should be considered where patients have a lowered blood state.

5. That while post-transfusion reactions occur in about 25 per cent of cases they are usually not of a serious type provided that the donor's and recipient's blood have been directly matched, and that they do not appear to mitigate the benefits of the transfusion.

6. That if this procedure is more generally adopted, it will result in an appreciable improvement in our mortality and morbidity statistics.

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WHAT THE GENERAL PRACTITIONER SHOULD KNOW OF RADIUM IN GYNECOLOGY*

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The introduction of radium for therapeutic purposes has revolutionized the methods of treatment in almost every field of practical medicine. An acquaintance with the changes thus brought about, is not merely of theoretical interest to the physician, as it may seem at first sight. It is true that radium in sufficient quantities is at the disposal of comparatively few men and that its application should be reserved to the expert who has made a thorough study of this powerful remedial agent; but I hope that the following discussion of the uses of radium in gynecology will convince the practitioner of the value of this knowledge in retaining the confidence and loyalty of his patients.

The principal field for radium in diseases of women is in the treatment of fibroids and cancer of the uterus; and since it is well known that the majority of such patients first consult their fam-

*Read at the Fortieth Annual Meeting of the Lee County, Iowa, Medical Society, held at Fort Madison, Iowa, December 18, 1924.

ily physicians, it is obviously of importance to the practitioner to know what can be accomplished with radium so as to be able to give intelligent advice.

Until a few years ago, the treatment of fibroids was exclusively surgical. Once the diagnosis of fibroid was made, an operation was clearly indicated. It was then found—and has since been established beyond a doubt—that radium, if applied properly, will check the bleeding in practically every case and will cause a more or less complete shrinkage of the tumor in 80 or more per cent. These results are brought about in three ways. To begin with, the radium rays exert a deleterious effect upon the follicle cells in the ovaries. This means that the follicles no longer ripen but undergo degeneration. No new ova are formed, and where there is no ovulation, there can be no menstruation. The condition, therefore, is one of artificial menopause and has not inappropriately been termed a bloodless castration. Secondly, the radium rays influence the tumor cells directly in such a way that the nuclei degenerate and the cell bodies pass through a sort of autolytic process which probably bears some resemblance to involution after childbirth. Finally, the radium, if inserted into the uterine cavity, causes a burn of the endometrium and thereby seals up the source of bleeding.

What made these effects still more attractive was the fact that radium carried with it no mortality (as compared with a death toll on an average of about 5 per cent from surgery), very little morbidity, and certain economic advantages such as moderate expense, uninterrupted ability to work, etc.

In spite of all these gratifying results and circumstances, it would, however, be a mistake to assume that surgery has no longer a place in the treatment of fibroids and to apply radium in one and every case. For not only are there cases where radium produces no effect, but there are also others where its use has distinct disadvantages. The practitioner, therefore, should have some idea about the proper selection of cases for one or the other form of treatment.

Generally speaking, women of forty or over with fibroids of small or moderately large size—let us say, extending not higher than to the umbilicus—are the best subjects for radium treatment; and it will occur to you at once that, proportionately, this is the category of cases you see most frequently. Then there are the patients with "poor surgical risk" who, irrespective of age, do better under radium—the anemic and exsanguinated kind (again a relatively large category), those with high blood-pressure or cardiac and renal complications, the women with pulmonary tuberculosis and other respiratory ailments, and finally, the obese whom no surgeon likes. Add to these two classes of patients the women who will not submit to an operation under any condition, and you have a rather large percentage of cases—I should say, around 60 per cent of all fibroids—that may successfully be treated with radium.

The remaining 40 per cent must now, as before, be subjected to operation. These are, first, the younger women in the second and third decades of life because we may be able to preserve the uterus for menstruation and possible pregnancy, or at least, the ovaries to ward off the hardships of premature menopause. Second, we shall want to operate on all gigantic fibroids and the large pedunculated ones, particularly those of the submucous variety, because in both of these radium is apt to produce necrosis; and for the same reason degenerated fibroids (suppurating, gangrenous, cystic) are unsuited for radium and should be attacked surgically. Cervical fibroids require operation because they do not respond at all to radiation. Complicating tubo-ovarian inflammation likewise calls for operation as radium is apt to make the infection flare up. Last but not least, in an uncertain diagnosis the operation is far preferable, and if there is the least doubt whether the tumor in question is really a fibroid, the practitioner would do well to have a gynecological consultation before assigning the patient to radium treatment.

In cases of malignancy, whether in the form of a sarcomatous degeneration in the fibroid itself or as a complicating body cancer, radium and operation hold each other in the balance. Both methods of treatment are equally justified though I, personally, lean more towards the surgical therapy.

It need hardly be emphasized that these are not hard and fast rules for the treatment of fibroids. Only general principles can be enunciated. Special features in a given case must always receive individual consideration. Thus a young woman might well have radium if her lowered kidney function makes an operation undesirable; and on the other hand, a patient beyond forty should be operated upon if a ventral hernia, to choose an illustration, or a torn perineum call for surgical intervention.

While in fibroids the influence of radium is, in part at least, an indirect one by way of the ovaries, the radium rays exert a direct and destructive effect upon the malignant tissues in cancer of the uterus. This is not due to a selec-

tive action of the rays, as was formerly believed, but to the low vitality of the cancer cells. Paradoxical though it may seem, the cancer cells which themselves are so aggressive and destructive, possess little or no power of resistance. They succumb readily to mechanical, thermic, or chemical injuries which normal cells can well withstand. In the case of radium, the incessant bombardment of the high velocity rays which emanate from the radium, injures both the normal and the malignant cells, but while the former recover to a certain extent, unless the exposure was excessive, the cancer cells fall an easy prey to the injurious agent. (There are, however, different degrees of the vulnerability of cancer cells. The more the latter resemble the mother tissue whence they originated, or, to use a technical term, the more they have become "differentiated", the stronger is their resistance to the radium and the greater is the dosage needed to destroy them. A preliminary histological examination will, therefore, give us valuable information not only as to the prognosis of the case but also the amount of radium required in this particular instance.) They are killed and cast off, and this explains why even very large cauliflower growths of the cervix melt away as if by magic, or deep and irregular craters show a smooth surface within a few weeks. For this reason, radium is the ideal palliative treatment of inoperable cancer, and though in most instances, the cancer cells which were far away from, and not affected by, the radium applied, will grow again and ultimately lead to the death of the patient, one achieves now and then permanent cures. The very worst cases of inoperable cancer of the cervix, however, are not suited for radium treatment. Here where only a thin shell of malignant tissue separates the crater in the vagina from bladder and rectum, radium application would invariably lead to urinary or rectal fistulæ and render the desolate condition immeasurably worse. In this class of cases the acetone treatment which I designed about nineteen years ago, is the only method to promise at least a temporary relief.

In less advanced and in early cases where surgery may be used with some degree of success, pre- or post-operative application of radium has a legitimate place and enhances the chances of permanent cure.

There is a third category of patients in whom the bleeding is due neither to fibroids nor to cancer. These are the cases of adolescent and climacteric, or rather pre-climacteric, hemorrhages. In the latter, if the microscopic examination of uterine scrapings (which, by the way, should precede any and every radium application) has shown no malignancy, radium is the sovereign remedy which in point of promptness, convenience, and safety cannot be equaled by any other method of treatment. In juvenile hemorrhages, on the other hand, radium, though its hemostyptic effect is excellent, has a place only occasionally and as a last resort when all other attempts at cure have failed.

There are a few other conditions in which radium may be applied such as certain forms of cervical discharge, pruritus, and condylomata acuminata. They are mentioned here largely to complete the long list of gynecological ailments which can be benefited by radium.

Nothing has been said about dosage and other important details of technique because it is outside of the present discussion. Let us remember this, however, that in radium we have a wonderful though still mysterious agent which like a double-edged sword can produce marvelous results but may also inflict untold harm. To use it to the welfare of the patient, requires mature judgment which can come only from extensive practical experience.

Metropolitan Bldg.

THE USE OF RADIUM FROM A SURGICAL STANDPOINT*

PAUL A. WHITE, B.S., M.D., M.S. (in Surgery), Davenport

Radium has passed through the stages of discovery, experimental development, over-enthusiastic propaganda that built up unfounded hopes, disillusionment with unjustifiable abandonment, and now is coming back and is settling into a well defined place in the therapeutic realm.

Its value used with proper indications in the hands of the skilled radium therapist has been established beyond all question. As a cure-all it has not stood the test of time better than any other therapeutic agent that has ever been discovered. In inadequate dosage, improperly placed, or lacking necessary preliminary, accompanying, or subsequent procedures as surgery, x-ray or the cautery it has often proved a disappointment.

It has been said that the practice of a single method of therapy is a potential menace to a community. Too often patients have been accepted for radium therapy whose lesion would have been eliminated more quickly, safely, and certainly by some other procedure. Surgery is the quickest way to rid the body of an offending

*Read before Medical Society of the Missouri Valley, September 18, 1924, Des Moines, Iowa.

entity if safety and lack of resulting deformity are in proper proportion where the lesion can be completely circumscribed. Benign lesions remain localized. Malignant growths are localized for a considerable time during their development.

Today unquestionably more than half the patients are coming into competent hands too late for surgery or any other measure to insure the individual living out his life expectancy. As cancer propaganda gains public response and diagnostic alertness and ability increases in the profession more and more cases will be seen early in the disease. Therefore it seems important to hold to a surgical viewpoint in the primary consideration of lesions that may be the subject for eradication by any method. In centers where extensive work is done with radium as in the Memorial Hospital in New York the greatest satisfaction and efficiency as well as better results have been obtained by close cooperation between the surgeon and radium and x-ray therapists.

At the Chicago meeting of the American Radium Society, June, 1924, Dr. Howard Kelly of Baltimore presented the chart below to illustrate his paper, "That Which Is Assured in Radium Therapy."

We did not have occasion to make use of radium in all of the conditions mentioned here and many of them are subject for explanation and qualification but they are presented as illustrating pathology considered amenable to radium treatment by one of the leaders and pioneers in radium therapy.

The following tables represent a cross section of a part of the work done in the Davenport Radium Institute with 200 cases during the past three years and show in a crude way their status of health at the present time. The word cure has not been used in malignant conditions for time enough has not elapsed to call any of them cured. The word stationary was selected as meaning to convey the idea that no evidence of active primary growth and regional or distant metastasis can be found.

Under present conditions when so many patients appear with their disease far advanced and probable metastasis already accomplished radium and x-ray afford the most effective and almost the sole means of arresting the process. Nevertheless carcinoma of the cervix that is seen early enough to be considered definitely localized doubtless is best excised either with or without the uterine body, radium being used as preliminary or post-operative measures or both.[1] When the growth is believed to be confined within the uterine body operation remains the procedure of choice using x-ray and radium in a prophylactic way. Very many cases cannot or should not be operated for one reason or another and it is a great source of satisfaction to know that radium and x-ray offer some assurance of permanent cure.

At the Memorial Hospital it is stated that "in nearly every instance subjected to irradiation only, evidence of the disease reappeared within a year". Ernest G. Samuels, of New Orleans, at the recent meeting of the American Radium Society reported a series of over 300 cases of carcinoma of the uterus treated with radium with not a living patient at the end of five years.

It seems rational to use radium and x-ray as pre-operative measures in breast carcinoma if time enough is allowed to elapse for an appreciable effect to be produced. There is an added comfort in the post-operative use of x-ray though so far as we can find at present no comparative series of cases have been presented to positively support the procedure as definitely increasing the number of five year cures. Radium used over the malignant mass, metastatic or recurrent nodules, or radium needles buried around these structures furnishes a powerful aid to the x-ray treatment of breast carcinoma, pre-operative, post-operative, or when surgery is contra-indicated. The large areas to be covered usually prohibits the use of radium as the sole agent.

Surgery or the cautery often preceded the use of radium in these cases and it seems best to consider always whether removal or destruction of the primary mass may not be preferable to radium alone. Whether excision or radiation of the regional draining lymphatics should be practiced is the subject of considerable controversy. Surgery seems radical as a prophylactic measure but statistics seem to show more definite protection from it than in dependence on radiation alone. One certainly cannot agree with Quick who advocates prophylactic radiation, then surgical removal of the glandular areas that show involvement subsequently. For various reasons radiation only was used over the lymphatic areas in the above cases.

The condition of the patients and the advanced, infected, invasive character of the lesions, which involved the anus, precluded the consideration of surgery in these rectal cases. Lympho-sarcoma if diagnosed is seldom surgical. It is important to excise active moles, potential melano-epitheliomata, using radium prophylactically as they are resistant to radiation, metastasise to distant parts and terminate life quickly. In all the realm of radium therapy nothing responds as kindly as basal cell epitheliomata, leaving no scar in most instances and being permanently removed. They

USES OF RADIUM (Kelly)

CURATIVE	HELPS AND APPARENTLY CURES
Basal cell epitheliomata	Polycythemia
Lupus erythematosus	Banti's disease
Angiomata	Primary Ca. glands of neck
Bleeding uterus (myopathic)	Lymphatic leukemia
Fibroids	Some bone tumors
Carcinoma cervix	Some brain tumors
Early vaginal carcinoma	Carcinoma larynx
Lymphosarcoma	Exophthalmic goiter
Early carcinoma of lip, tongue, mouth	Inoperable breast growths
Adenoids and tonsils	Carcinoma of body of uterus
Keloids—fresh	Carcinoma of bladder
Early Hodgkins	Carcinoma of rectum
Splenomyelogenous leukemia	Metastasis from malignant tumors of testicle
Tuberculous glands	Vernal catarrh
Recurrent carcinoma breast	Metastatic bone tumors
Tumors mediastinum	
Tumors thymus	
Sarcoma naso-pharynx	

CARCINOMA OF CERVIX AND UTERUS*

No. cases	Oldest	Youngest	Average age
34	73	32	50

GROUP	NO. CASES	ALIVE	DEAD	STATIONARY	DECLINING	AV. DURATION (Living)	LIVING 1 yr.	LIVING 2 yr.
I								
Early	4	4	0	4	0	14.75 mo.	1	1
II								
Operable	3	3	0	3 (2 yr.)	0	14 mo.	1	1
III								
Adv. Inop.	11	11	0	5	6	14.4 mo.	3	3
IV								
Frozen Pelvis	8	2	6	2	0	8 mo.	2	
V								
Post-operative								
1—Prophylactic	5	5	0	5	0	15.2 mo.	2	1
2—Recurring	3	3	0	3	0	16 mo.	2	1
Total	34	28	6	22	6	13.7 mo.	11	7

*Unfavorable when treated 64.7%

CARCINOMA OF BREAST

No. cases	Oldest	Youngest	Average age
11	85	38	60.5

	NO. CASES	LIVING	DEAD	STATIONARY	AV. DURATION
Primary	3	2	1	2	31. mo.
Post-op. Recurring	7	1	6	1	12 mo.
Post-op. Prophylactic	1	0	1	0	
Total	11	3	8	3	21.5 mo.

SQUAMOUS CELL CARCINOMA OF SKIN AND MUCOUS MEMBRANE

No. cases	Oldest	Youngest	Average age
25	86	43	66.7

	NO. CASES	LIVING	DEAD	STATIONARY	AV. DURATION
Skin of head	5	4	1	4	11.5 mo.
Lips	8	5	3	5	14.2 mo.
Tongue	4	2	2 (1 pneu.)	2	19.5 mo.
Jaw	2	1	1	1	12 mo.
Tonsil fossa	2	1	1 (heart)	1	8 mo.
Antrum	2	2	0	2	13 mo.
Orbit	1	1	0	1	24 mo.
Nares	1	1	0	1	10 mo.
Total	25	17	8	17	14 mo.

MISCELLANEOUS MALIGNANCIES

	NO. CASES	AGES Oldest Youngest Av.	LIVING	DEAD	STATIONARY	AV. DURATION
Carcinoma rectum	5	73 — 40 — 62	3	2	2	19.6 mo.
Carcinoma prostate	5	79 — 55 — 63	2	3	0	25.5
Lympho—sarcoma	3	34 — 2½ — 24	2	1	2	15
Melano-epithelioma	7 (excised)	88 — 27 — 66	4	3	3	11.3
Spleen	1	55	0	1	0	
Basal cell epithelioma	50	83 — 36 — 60	47	3 1 pneu. 1 burn	47	16
Epulis, jaw	2	61 — 49 — 55	2	0	2	16
Thyroid	1	50	0	1	0	
Clitoris and vulvae	2	82 — 63 — 72	0	2	0	
Penis	1	68	0	1	0	
Myelogenous leukemia	1	58	1	0	1	12
Total	78		61	17	57	

Favorable result in 73%

BENIGN CONDITIONS

	NO. CASES	AGES Oldest Youngest Av.	DEAD	RESULT
Hemangiomata	17	25—3 da.—20 mo.	1	Uniformly good
Lymphatic edema lip	1	21	0	Improved
Myxoma nose (recurring)	1	66	0	Stationary
Herpes penis	1	58	0	Cleared
Leucoplokia	2	45 — 42 — 43	0	Cleared
Keloid	2	49 — 22 — 26	0	Good
Tuberculosis glands neck	3	58 — 14 — 40	0	Improved
Trophic ulcer foot	1	50	0	Questionable
Bronchial cyst sinus	1	16	0	Unimproved
Exophthalmic goiter	2	50 — 23 — 36	0	1 improved
Thrush	1	55	0	Improved
Warts	2	63 — 19 — 41	0	Cleared
Uterus, menorrhagia fibroid (7) polypi (4) idiopathic (2) cervix prophylactic (5)	18	54 — 30 — 39	1 (murdered)	5 operated subsequently 13 satisfactory
Total	52		2	

Satisfactory results in 44 or 84.6%

do not metastasise. They are capable of assuming squamous cell characteristics under stimulation of improper treatment or prolonged growth.

The tooth in the originating socket and adjourning teeth should be removed with an epulis, cautery applied to the area and radium used subsequently to prevent recurrence. In the remaining conditions listed here surgery is of little avail.

Hemangiomata respond specifically to radiation as does lymphatic edema and it is questionable whether any other form of therapy should be used with them. In exophthalmic goiter there is lacking convincing evidence that response is prompt enough under radiation in so dangerous a disease considering the likelihood of the patient acquiring serious visceral damage (cardiac and neurological) during the prolonged period of treatment. Radium and x-ray therapists have too often spoken loosely and over-enthusiastically concerning results in poorly or unclassified goiter groups. Surgery offers the quickest surest way to recovery with a very low mortality in skilled hands. We believe that fibroids of any considerable size are better subjects for surgery than radiation if operation is not contra-indicated. We have made use of radium to destroy the active glands of the remaining cervix following subtotal hysterectomy with the idea of protection from future cancer to which women with fibroids seem to be more prone.

CONCLUSIONS

It is postulated that surgical removal is the quickest, surest way to rid the body permanently of offending localized pathological lesions.

As the public heeds cancer propaganda and diagnostic acumen is quickened more and more cases will fall into the surgical class.

Radium and x-ray are powerful agents and have demonstrated their lethal qualities to cancer cells. They are useful as pre-operative measures, and as post-operative assurance of permanency of cure. Evidence seems to be lacking that early circumscribed growths may as safely be left to radiation alone as to the combined forces of surgery and radiation.

Is it not best to hold to a surgical viewpoint and consider in each case whether removal of the growth with preliminary or subsequent radiation or both may not be better than trusting to a single agent so new in the therapeutic field as radiation?

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EARLY IOWA PHYSICIANS

D. S. FAIRCHILD, M.D., F.A.C.S., Clinton

Dr. H. H. Clark of McGregor, died at his home January 18, 1925. He was born on October 12, 1842. His family moved to Illinois when he was eight years old, taking up a farm near Freeport. When he was eighteen years old he enlisted in the 92nd Illinois Mounted Infantry and served four years.

After the war, he entered Rock River Seminary and after completing his course there he studied medicine and graduated from the Chicago Medical College (Northwestern) in 1869. He served as an intern at Mercy Hospital and in 1870 located at McGregor.

Dr. Clark was an energetic worker and early engaged in active civic and professional matters. His interest in health activities led to his appointment as a member of the first State Board of Health, passed by the Iowa legislature on the 26th day of March, 1880, and approved by the governor on the 23rd day of April, 1880. The board consisted of William S. Robertson, M.D., Muscatine; Phillip W. Lewellen, M.D., Clarinda; Wilmot H. Dickenson, M.D., Des Moines; Henry H. Clark, M.D., McGregor; Justin M. Hull, M.D., Lake Mills; Ephraim M. Reynolds, M.D., Waterloo. At the first meeting of the board, May 5, 1880, Dr. Robertson was elected president and L. W. Andrews secretary, to be succeeded on May 25, 1881 by Dr. J. F. Farquarson. Dr. Clark served on the board thirteen years.

Dr. Clark in his oration on Surgery at the 1916 session of the Iowa State Medical Society, entitled, "Then and Now", presented some of his early experiences in McGregor. He writes:

"In the year 1870, armed with a diploma from the Chicago Medical College (now Northwestern University College of Medicine) and the experiences as intern at Mercy Hospital I bade adieu to Chicago and turned my face westward. At Dubuque I heard of the growing importance of the up-river town, McGregor, and on a Sunday morning in April, straddled my little bay horse, my only worldly possession of value, saving a few books and instruments, set forth across country to look over the chances the new town had to offer a bright and aspiring physician. I rode into McGregor just as the church bells were ringing for evening service. That was forty-six years ago (55 years). I have been there since

with the exception of a couple of days now and then to attend a medical meeting or similar form of recreation.

"At the time I came, McGregor was a hustling little city of 4000 population. There were nine doctors in the town, but a clinical thermometer was unknown. Dr. Frederick Andros was the only one who could boast of a hyperdermic syringe. Dr. Andros had been the first member of our profession to penetrate the wilderness that, in 1837, the year he came to northeastern Iowa, lay north of Dubuque. (Dr. Frederick Andros came to Dubuque in 1833, the first doctor to definitely locate in Iowa. Graduated from Brown University 1822, A.B. and M.D., 1826.) He built the first house in Garnavillo, the county seat of Clayton county, which at the time comprised all the territory from Turkey River north to the Canadian border, and west to the Rocky Mountains.

"After years of practice at the county seat and some service for the Indians at the Yellow River and Fort Atkinson missions, the Doctor finally located at McGregor. There he soon became recognized as the surgeon not only for the town, but the surrounding country for miles, he was the only man thought of when a surgeon was required.

"A few days after my arrival, I called on the Doctor, then nearly seventy years old, and presented my credentials. He gave me the glad hand and we became firm friends. Some months before, he had met with an accident which had seriously impaired the strength and usefulness of his right hand, my association with him was therefore fortunate, for, while he was the surgeon and received the credit if any were due and emoluments, if any such were forthcoming, I did the work and gained the experience.

"Our association continued in this manner for about ten years, when the Doctor decided Iowa was getting too civilized and tame, and went West to grow up with the country. He was then eighty years old. After practicing in Dakota for ten years, he changed his residence to Minneapolis, where he died at the age of ninety-one years.

"Dr. Andros was far superior in intelligence and ability to the average physician of his day, but he was a typical frontiersman and something of a character. I remember a country drive I took a short time after I came to McGregor. He drove a good horse but he interfered so badly that either his right or his left hind leg seemed to be in the air all the time. As we were jolting over a rough road back in the Mississippi hills, the Doctor suddenly stopped his horse and remarked, 'There's the damndest nicest spring over there you ever saw'. We got out and walked over to where a fine stream of water gushed from the rocks and formed a pool about three feet in diameter and eighteen inches deep. The Doctor took off his high silk hat which he always wore and in which he carried his letters, red bandanna, cigars, stethoscope and always either a clean or dirty collar, pulled off his coat, rolled his sleeve to his elbow and thrust his hand to the bottom of the spring. After lifting aside a few stones he

DR. H. H. CLARK

pulled out a flask of whiskey. He uncorked it, took a generous drink and then returned the bottle to the bottom of the spring for future use.

"If there is any particular reason why during my work of forty-six years (55) in McGregor I have done more or less surgery, it is in all probability due—no, not to Dr. Andros' bottle in the spring, but the fact that he was growing old, had a crippled hand and was my friend. The truth is that inasmuch as no one in my locality until very recent years gave anything like especial attention to surgery, the field was largely mine and so, while I claim no expert knowledge and have never posed as a surgeon, I have taken care of a large number of surgical cases and have sometimes been called a surgeon. I need not tell you that such is not now the case and later on may give you a hint as to the why and wherefore."

Dr. Clark has set forth his association with Dr. Andros, an interesting chapter in the lives of the two notable men who early engaged in the practice of medicine in northeastern Iowa. In his fifty-four years of practice in McGregor, Dr.

Clark was witness to an evolution in the practice of medicine and surgery in its several stages. In the early years surgery was limited to the surgery of emergencies, but the time was not far off when the field was to be greatly extended, and while Dr. Clark had his surgical ideas developed in the "old days", they were not fixed beyond the possibilities of change, and as surgeons entered new fields, he also took his part in the new surgery. To do this more effectually, he provided himself with the necessary facilities and first of all was a hospital, and, assisted by his daughter Dr. Alice Clark Brooks, a creditable hospital was organized.

Dr. Clark was a surgeon to the C. M. & St. P. Ry. Co. for fifty years, and when the C. M. & St. P. system surgical association was formed, he became an active member. The writer recalls numerous occasions when Dr. Clark, participated in the discussion of problems which were of particular interest to railway surgeons; he was always quite positive in his views, which he did not hesitate to express.

In 1871 Dr. Clark and Miss Judith Baugh, daughter of Judge Downing Baugh, were married, and to them six children were born, four of whom, with Mrs. Clark, survive him.

NOTICE OF EXAMINATION FOR ENTRANCE INTO THE REGULAR CORPS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Examinations of candidates for entrance into the regular corps of the U. S. Public Health Service will be held at the following-named places on the dates specified: At Washington, D. C., June 1, 1925; at Chicago, Illinois, June 1, 1925; at New Orleans, Louisiana, June 1, 1925; at San Francisco, California, June 1, 1925.

Candidates must be not less than twenty-three nor more than thirty-two years of age, and they must have been graduated in medicine at some reputable medical college, and have had one year's hospital experience or two years' professional practice. They must pass satisfactorily, oral, written and clinical tests before a board of medical officers and undergo a physical examination.

Successful candidates will be recommended for appointment by the president with the advice and consent of the senate.

Requests for information or permission to take this examination should be addressed to the Surgeon General, U. S. Public Health Service, Washington, D. C.

H. S. Cumming,
Surgeon General.

IOWA STATE MEDICAL LIBRARY

New York has maintained a state medical library at Albany for many years. Three years ago a medical branch of the Iowa State Library was established with its own librarian and quarters in the Historical Society building at Des Moines. This latter may well serve as an example of the need and practicability of such an institution. Ten years ago the state librarian in Iowa, convinced of the need of medical books in the state library, began to accumulate a few volumes. In 1920 the General Assembly of Iowa created a medical department. A small appropriation is made each year for a librarian's salary and the purchase of books and periodicals. Assisted by contributions from various sources, the library now has some 5,000 volumes. It is reported that 10 per cent of the profession outside of Des Moines and 5 per cent of the profession in the city use the library. This percentage will doubtless increase as the library becomes better established.

Iowa has a state medical library; why not Minnesota? The time is propitious to take up the matter at our state medical meeting this month and provide for a thorough investigation of the proposition.

—Minnesota Medicine.

DEATH FROM TUBERCULOSIS AND HEART DISEASE

According to the Statistical Bulletin, Metropolitan Life Insurance Company:

"A child of ten years of age is, under present conditions, three times as likely to die eventually from heart disease as from tuberculosis. This disparity between the chances of death from heart disease and from tuberculosis increases with advancing age—more rapidly for females than for males. At age thirty-five, the probability of dying eventually from heart disease among males is nearly four times that of tuberculosis; among females, the chances of death from heart disease is almost six times that of tuberculosis."

TRYPARSAMIDE

The Rockefeller Institute for Medical Resarch is preparing to release the drug known as Tryparsamide. As you probably know, there is a very widespread interest in this drug and the Institute is anxious to serve the medical profession and the public by acquainting them with the fact that the drug is to be released and will be available for general distribution on or about January 1, 1925. We would greatly appreciate it, therefore, if you would publish the enclosed news item in an early issue of the Journal of Iowa State Medical Society.

Wade H. Brown, M.D.,
The Rockefeller Institute
for Medical Research.

The Journal of the Iowa State Medical Society

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It is with no small degree of pleasure that we publish in this number of the Journal, a paper read before the 1895 meeting of the Iowa State Medical Society, by Dr. W. L. Bierring, then professor of pathology in the Iowa State University; particularly so in view of the fact that the editor had the honor of presiding at this meeting, and if our memory serves us right, it was Dr. Bierring's first appearance before this Society. Just thirty years have elapsed since then, and the few members who were present at the Creston meeting who were active then, will recall the interest felt on the presentation of a definite treatment for diphtheria by one who knew from personal observation and experimentation just what the method of treatment was.

Considerable literature on the inoculation of antidiphtheric serum had appeared and some comparative statistics, but the mass of the profession felt that the whole subject was in an experimental stage and looked upon the matter with doubt and suspicion. But there was one important factor to be taken into consideration, to help establish an open mind on the part of the profession, and that was the fearful mortality from the disease, even in the presence of the best and most approved drug and hygienic treatment, and when Dr. Bierring forcefully laid before the profession the work he had seen in Paris and his own at Iowa City, there was a feeling among some that it was plainly our duty to forward any method of treatment that promised better results. None but those practicing medicine thirty years ago can realize the feeling of dread that moved the laity and the profession alike when diphtheria was announced. But serum treatment was foreign to the minds of most people, as was seen in the fate of Dr. Luther Stevens' resolution.

The attitude of the world has changed since then, and today the physician who does not employ diphtheria antitoxin may be subject to prosecution for neglect of a plain duty.

In our busy world we do not stop to consider how the great things come about, and it is a part of our duty to stop for a moment to inquire what influences and who were the contributors in the evolutionary processes, particularly in medicine, and it was with great pleasure to us that Dr. Bierring agreed to contribute a reproduction of his experimental work, as one of our own members. It is a valuable contribution to medical history of Iowa.

MEDICAL MEETING

The seventy-fourth annual session of the Iowa State Medical Society is at hand and it falls to those who have been appointed to direct the activities of the Society, to review the work during the past year and to offer suggestions for the coming year.

The important body of the State Society is the House of Delegates. The various standing and special committees make their reports, and the House of Delegates take these reports under consideration and advise or direct their activities. Thus the House, from these reports, have before them the work of the past year. We regret to say that it not infrequently happens that these reports sometimes are of a perfunctory character, and convey but little information, and are passed with but little carefully considered discussion.

One of the serious faults in our organization of the House of Delegates is a lack of familiarity with the work, not in the organization itself, but in the practice of the county societies in changing the personnel of the delegates as soon as they have served long enough to become familiar with the Society work; it is one of the faults of our American system, in passing the offices around. It is well enough, except the office of secretary and state delegates. It is a hardship it must be confessed, to deprive an active member of a participation in all the Society's sessions. But there is always one or more older men who are less interested in active work, who make good delegates. We would not suggest that the House of Delegates be made up of old men, but men whose age is not measured by years, men who are not so

busy that they cannot find time to attend most of the meetings of the county societies. There is no necessity of changing the rules, only the practice.

The most serious dereliction on the part of the county societies is of electing men as delegates who rarely attend the meetings of the State Society. This is theoretically overcome by electing alternates, but it often happens that neither delegates or alternates report for duty. The greatest weakness of county societies is in not selecting a suitable man for secretary, and having once found him, keep him in office for a long time. Do not elect the very busy practitioner for obvious reasons; elect a competent man, a man of brains, one who has the spirit of medical patriotism, one who is willing to make a little sacrifice and do a little work for the good of the profession in his community. A man who will see to it that the delegate comes to the state meeting with proper credentials. Rarely does it happen when the House of Delegates convenes, that some delegate is refused his seat because he fails to present his credentials. Probably the delegate should look after his credentials himself, but he forgets it. The secretary who is the guardian of his society will not forget.

The most important single officer is the councilor. He has been spending all unoccupied time for the entire year, getting his report ready. He knows all about professional matters in his district and has a voluminous report to the House of Delegates. He knows the short-comings of his district, he knows what the various county societies need; he is able to advise the House in regard to them.

We have requested the executive secretary to prepare a survey of the state, to show how well the several county societies have been represented in the House of Delegates during the past eight years, and he has prepared for us a map which will show this important fact, which he will produce in this connection.

We desire to call attention to the fact that the various members of the State Society who have suggestions and matters of a material character to bring before the State Society, to consult with his delegate or delegates and together formulate a presentation in a form to secure a serious consideration. This is a better procedure than to make complaints and criticise afterwards.

THE QUESTION OF FEES

The question of fees to be charged by doctors has always been a difficult one. Shall the rich pay more and the middle class and the poor pay less or nothing? A controversy as to a fee charged is always unfortunate, as it leads to an unfriendly feeling between a patient and his doctor and is often the foundation for malpractice suits, or to counterclaims to the effect that the services were without value. The doctor often holds that a principle is involved if he accepts less than the expressed value of his services, as it may be taken as a confession on the part of the doctor that his services are of small value or that it may be an effort on the part of a patient, able to pay, thus to escape payment at all, or at most, a materially less sum.

It is no doubt a vital business principle affecting the physicians' income to an extent to more than compensate for the loss of a family or the danger of a malpractice suit, or it may be a principle upon which doctors are sensitive, that of permitting others to fix his fee or the value of his services.

The question of fees charged in private medical practice is generally determined by the ability and willingness of the people in any given community to pay, for ordinary services, and in special cases such additional fee as the financial ability of the patient may permit. It is in these special cases that disputes and controversies arise. It is in this class of practice, it is contended, that the rich should pay more, more indeed than the services are worth as measured by any standard of business. A reason for this has been stated to be the fact that the rich demand more attention, more care, and expect more in every way. It has been stated by one who knows, that if the rich come to him they must pay for it; he would prefer if possible to treat people of the middle class at moderate fees.

Henry Ford in his hospital at Detroit, works out the cost of medical and surgical treatment, the same as he works out the cost of production in his automobile factories, and he charges all patients alike. This is the plan of insurance companies and similar organizations, workmen's compensation, etc. A schedule price is generally allowed for each class regardless of the wealth or poverty of the patient.

While schedules may be made up for public service, this seems impractical in private practice. Most practicians are private practitioners and are more interested in what may be regarded as reasonable compensation. In California an

inquiry was set up to ascertain the views of a number of successful private practitioners on the subject of fees. According to the California Western Medicine, these practitioners "collect what they consider their services worth from only about one-third of their patients; another third paid part fees, and about one-third of their services were rendered without compensation of any kind." The California Medical Association has adopted a resolution endorsing the "plan of charging fees in accordance with the patient's ability to pay, from nothing up to what each physician recognizes as his personal fee schedule."

The plan of charging the wealthy and well-to-do patients more because he is able to pay, has never been popular with the public nor has it received the approval of the courts in the United States. Although an English judge has upheld the right of a physician to charge a wealthy patient more than he would ask a poor man for similar services. The Iowa Supreme Court in Robinson vs. Campbell (47 Iowa) ruled affirmatively on the admission of evidence to show the financial condition of the person receiving medical services in estimating their value in the absence of an express contract, other courts have ruled adversely to the admission of such evidence.

It seems a principle of business that the prices of commodities and services should be the same to the rich and poor, but it is admitted that the rich may purchase higher priced goods and more skilled and more expensive services at his pleasure. As medical attendance is of the nature of services, it may be admitted that if the medical practitioner holds himself out as a high priced doctor, there would be no inconsistency in his charging the rich more. This we would assume to be of the nature of an implied contract. As there are but few of this class of doctors, it would have little bearing on the question of fees.

There seems but one conclusion, and that is, to establish a common practice of charging the rich more, and, within certain limits, to establish a custom which will be accepted generally.

It appears that neither age nor experience will wholly protect one against the machinations of the evil one. One La Grange is said to have read a paper before the "Linn County Ophthalmological Society". This appeared to be innocent enough and looked well, but investigation showed that there was an F. C. La Grange, but no Dr. La Grange and that there was no "Linn County Ophthalmological Society", but an informal club of Cedar Rapids eye and ear men.

It would appear that La Grange has an active imagination and forms "ophthalmological societies" at doctors' offices and reads a paper or a lecture on fitting glasses—or something of the sort. What La Grange's acquirements are the writer does not know beyond an apparent commercial instinct.

Waterloo, Iowa, January 21, 1925.

To the Editor:—

The recent article in the January issue of the Journal by Dr. Welch of Cedar Rapids, on "What Constitutes Constipation", prompts me to offer supplemental consideration of this most important subject. But first let it be said that the specialist today who assumes to commit himself to this branch of the profession is undertaking a task for which he shall not fail to receive full appreciation as he becomes able to divert the trend of modern medicine from that tendency to forget that we are normal animals needing only normal ways of living instead of special brutes who endure simply because we have access to Hinkle, Ayers and tradition.

That there are practitioners who today believe that man should yet revert to natural functionings as other animals enjoy is indeed a grand medical thought. Some of us had feared that alcoholic stimulation had become a part of our civilization. And again we had seen our profession so attended by the thought that the best prescriber was he who could provide the best laxative, and the best mask to pain, and the best stimulant to supplant sleep that we wondered if normal animal life was ever to be considered a real part of approved civilization. But these evidences of a newer way of thinking gives us courage and hopes for the generations following.

There are several additional thoughts to the subject of Dr. Welch's paper. It should be comprehended that the transverse colon at the middle of the whole tract lies against and in contact with the greater curvature of the stomach which fact should warrant that as the stomach performs its mechanical functions a like impression must be made on the colon and as such is done the contents naturally pass on, if habit and mechanical interference does not prevent.

Then as to the action of the iliocecal valve and the cecum, it should be realized that these two in the performance of their functions do that which creates scyballæ and that the state of diarrhea which most authors declare is constant in the ilium terminates at the valve and therefrom intestinal content is no longer a continuous flow but an interrupted one or that which is in separated portions, the formation of which is so well shown in Dr. Welch's paper. The writer remarks in his early study of intestinal functionings many years ago with the amateurs in premedical days how it was evidenced that a form of segmentation of bowel content shown in scyballæ of horses was due to the interrupted action of the valve. This to us should explain some of the features of normal and abnormal evacuations.

Another matter of importance in the treatment of constipation without drugs and in the restoration of the normal habit of defacation following ordinary meals, is the comprehension of anatomical changes due to the habits of constipation. These include distensions, prolapses, and obstructions resulting therefrom. And yet we well know the possibilities of restorations to approximate normals when diets and habits are enforced and attended by proper rules of care. This includes first of a removal of any possible obstruction at the outlet (anus). It is known to many of us that sphincter spasm or tension is an important element in all alimentary therapeutics. Even in the treatment of the inflammatory enterites the element of drainage (important) depends on attention to the sphincter ani and who has not seen the almost thread-like stream of the evacuation and known that bowel content was as much a menace as pus in a wound?

The same principle applies to the treatment of constipation. It is as important that there be a patent anus as that there be a patent iliocecal valve. Those of us who have seen strictural problems at that point know. And it appears that the one time fad of stretching the sphincter ani may not have been so strange. For who of us has not seen that a sufferer from hemorrhoids quickly finds a great measure of relief when he learns the thrice daily or oftener of emptying the rectum by enemata? In fact in the treatment of constipation the writer has so often found complete cures as soon as the sufferer learns to disallow the presence for any time of bowel content to remain in the rectum. And the fact appeals that the rectum is not a receptacle save as is the cecum in which a mechanical act necessitates only enough substance for the musculature to operate upon. That is when the amount is sufficient, the act voluntarily takes place save where the wrong habit is formed.

The other subject suggested is that of dehabituation. The process by which a patient who has passed through fifty years or less of "modern" medicine and then desires to return to "earth" in normal ways of living must become dehabituized which is a process in itself apart from diet or drugs. It is that which means a gradual restoration of form of bowel, of abdominal curves and conditions. A change from stases to continuous fluxes. From uncleanness to cleanness, from a state of impurity of blood and lymphatic fluids to that natural nascent cleanliness of health. As has been shown every glandular structure in the body begins anew its functioning, and even mechanical relief alone grants the patient a sense of comfort heretofore thought to be a toxemia.

It has been stated that some few of our great men have been teaching the doctrine of frequency in alimentations and may we not from these "confessions" yet learn that there are many more to be added to the traditional "seven thousand" who have not bowed the knee to popular physic?

C. F. Bennett, M.D.,
Fenton, Iowa.

SCHOOL FOR SOCIAL RESEARCH

The new school for Social Research of New York City is offering this year a number of practical courses. In addition to that on applied psychology previously mentioned in this column, a course on evolutionary biology was given in October by Julian Huxley, of Oxford University; other lecturers are: Dr. Frankwood E. Williams, medical director of the National Committee of Mental Hygiene; Dr. Douglas Thom, Dr. Bernard Glueck, Alexander A. Goldenweiser and Joseph K. Hart.

—Journal and Record.

SOCIETY PROCEEDINGS

Bremer County Medical Society

The monthly meeting of the Bremer County Medical Society was held in Waverly, Tuesday night, February 17. Dinner was served at the Sweet Shop at 6:30, followed by an open meeting in the Methodist Church at 8 o'clock. The public had been invited to this meeting and there was a good attendance.

Dr. F. R. Sparks read an interesting and instructive paper on Cancer. He brought out the early symptoms of this disease and stated that if people would learn and heed these symptoms and take proper medical treatment the death rate from this disease could be materially reduced.

Dr. Clasen of Tripoli, vice-president, acted as chairman and Dr. Graening discussed several points on cancer. The audience was invited to take part in the discussions and Dr. Sparks was called upon to answer a number of questions.

It is the intention of the society to hold these meetings frequently for the benefit of the public.

Calhoun County Medical Society

At the February meeting of the Calhoun County Medical Society Professor Van Epps of the State University conducted a clinic-demonstration of the technic of a health examination, the subjects being the physicians themselves. The meeting was preceded by a courtesy luncheon at the Brower Hotel for their guest and assembled physicians.

Carroll County Medical Association

The Carroll County Medical Association held a meeting Thursday evening, February 26, which was preceded with dinner at the Burke Hotel. After dinner the doctors adjourned to the city hall where a profitable and interesting meeting was held. Dr. Stoner of the Polyclinic, Des Moines, gave a talk on fractures, and Dr. Hansell, also of Des Moines of the Polyclinic, gave a talk on Diagnosis in Urology. Besides the doctors in the Carroll district there were present, Drs. Merritt and Losh of Des Moines, Dr. Jackson of Jefferson and Dr. Kauffman of Lake City.

Crawford County Medical Association

The Crawford County Medical Association held its annual meeting Tuesday evening, February 3, at the Hotel Denison, Denison, and partook of a dinner served at six o'clock. Fifteen members of the association were in attendance, among those from out of town being Drs. Traynor, Ash, Wolendorff and Dean of Council Bluffs; Dr. Loomis and Dr. Draper of Manilla; Dr. Little of Vail; Dr. Garner of Kiron and Drs. Lott and Shane of Carroll. Those from Denison were, Drs. Sievers, Brannon and Mechan.

A program of much interest to the medical fraternity was carried out, Dr. Traynor of Council Bluffs, on Syphilis, Dr. Wolendorff on Joint Diseases, and Dr. Dean on Cataract.

Des Moines County Medical Society

Dr. Arthur Steindler, professor of orthopedics in the school of medicine of the State University of Iowa at Iowa City, spoke at the regular monthly meeting of the Des Moines County Medical Society at the Hotel Burlington February 10, on Surgical Treatment of Operative Tuberculosis. He emphasized the advantage of an early diagnosis in treating the disease and used stereopticon slides to illustrate his talk.

Mahaska County Medical Meeting

At the regular meeting of the Mahaska County Medical Society, Incorporated, held February 3, 1925, the following officers were elected: President, C. J. Lukens, M.D., New Sharon; vice-president, Charles Wallace, M.D., New Sharon; secretary, E. M. Williams, M.D., Oskaloosa; treasurer, B. O. Jerrel, M.D. Program Committee, C. J. Lukens, M.D., New Sharon; E. M. Williams, M.D., Oskaloosa; Chas. Wallace, M.D., New Sharon.

E. M. Williams, M.D., Secretary.

Mills County Medical Society

The Mills County Medical Association held their annual meeting in Glenwood Thursday afternoon, February 5, at the legion hall. Election of officers: President, Dr. G. V. Caughlan of Glenwood; vice-president, Dr. G. Fowler of Emerson; treasurer, Dr. G. D. Tipton of Henderson. Dr. Caughlan was appointed delegate to the State Medical Society meeting which will be held in Des Moines with Dr. I. U. Parsons of Malvern as alternate—Glenwood Opinion.

Polk County Medical Society

The Polk County Medical Society met for its regular monthly meeting in the Oak Room of the Fort Des Moines Hotel on February 24, 1925. The meeting was called to order at 7:40 p. m. by the vice-president, Dr. Robert L. Parker, in the absence of the president, Dr. W. W. Pearson, who was out of the city.

The minutes of the January meeting were read and approved.

Dr. W. L. Bierring presented a case of Splenic Anemia, in a boy fifteen years old, who has had a splenectomy with subsequent improvement.

Program

Diagnosis of Tuberculosis

Pulmonary Tuberculosis, John H. Peck, M.D.

Tuberculosis of the Larynx, C. C. Jones, M.D.

Tuberculosis of the Ear, J. A. Downing, M.D.

Tuberculosis of the Eye, Ralph H. Parker, M.D.

Tuberculosis of the Skin, J. F. Auner, M.D.

Tuberculosis of the Nervous System, Frank A. Ely, M.D.

Surgical Tuberculosis, Earl R. Rice, M.D.

The secretary then read resolutions in reference to the death of Dr. Charles F. Smith, which had been prepared by a committee appointed for that purpose by the president.

It was moved by Dr. Ely that these resolutions be passed and that they be made a part of the records of the society and that a copy of them be sent to Mrs. Charles F. Smith. Duly seconded and unanimously carried.

An application for membership from Dr. E. E. Linn was presented, the same having been approved by the board of censors.

Dr. Blum moved that the rules be suspended and that the secretary be instructed to cast an unanimous vote for Dr. Linn. Duly seconded and unanimously carried.

A letter and pamphlet from the committee for the Gorgas Memorial was presented and portions of each was read by the secretary. In this letter it was asked that each county society subscribe $100 toward the Memorial Fund and also appoint a member to the state governing board for this memorial.

Dr. Bierring spoke a few words in reference to the Memorial.

Dr. John Peck moved that the sum of $100 be subscribed by the society, payable in four semi-annual installments. Duly seconded and unanimously carried.

The following bills were presented: Iowa Printing & Supply Co., $31.65; Zaiser's, $10.75.

The secretary read a letter from the Women's Division of the Chamber of Commerce inviting the members of the society to come and hear William James Hickson, director Psychopathic Laboratory, Municipal Court of Chicago.

The secretary presented the proposition of buying a silver screen on a roller and in a suitable box for use with lantern slides.

Dr. Peck moved that the secretary be authorized to purchase such a screen, size 8 feet by 8 feet for the society. Duly seconded and unanimously carried.

Dr. Weingart presented a resolution in reference to increasing the budget for the Iowa State Medical Library, and spoke thereon. It was moved by Dr. Weingart that the resolution be passed by the society. Duly seconded and unanimously carried. Dr. Bierring suggested that copies of the resolution be sent to each member of the senate and house of representatives of Iowa.

The resolution is as follows:

Resolved—In view of the fact that the Iowa State Medical Library is of great importance to the practitioners of medicine in the state of Iowa, and also in view of its needs for increased financial support, we, the Polk County Medical Society, hereby petition the Iowa state legislature to grant the appropriation asked for by the library.

While this is the expression only of the largest county society in the state, we know that this is a general opinion among the other societies in as much as the library has given a wide service over all the state.

We feel that the library is one of the most important factors in the diffusion of medical knowledge among our profession and we should regret exceedingly if the relatively modest appropriation for which it asks should not be granted.

Resolved, that the secretary of the Polk County Medical Society be instructed to mail a copy of these resolutions to each member of the state senate and the house of representatives of Iowa.

Members present sixty-six; visitors present three; total number present sixty-nine.

L. K. Meredith, Sec'y-Treas.

Pottawattamie County Medical Society

The quarterly meeting of the Pottawattamie County Medical Society was held January 22 at Council Bluffs. The principal talks on special subjects were by Dr. Lloyd Graver of the University of Iowa, Iowa City, on Heart Disease; Dr. D. C. Hankey, Council Bluffs, on Sciatica, and Dr. M. G. Wohl of Omaha, Diabetes.

Dr. Wohl said:

"Diabetes has increased from 2.8 persons per 1,000 in 1866 to 18 per 1,000 in 1923. About 2 per cent of the population of the United States or about two million people are suffering from diabetes.

"This alarming increase is due, according to the Doctor, to the increased consumption of sugars. In 1910 it was estimated that the average person in the United States consumed 103 pounds of sugar annually; while in 1890 only thirty-three pounds were consumed. This increase in sugar consumption has led to an increase in the number of fat people. The surest way to avoid this disease is to keep your waist line down. The slender woman and the agile man are usually immune to diabetes.

"Insulin, the new serum for diabetes, has not proven to be a cure. It is only good in patients that are in coma, or that are overwhelmed with infection. The afflicted diabetic must have courage and will power to stick to his carefully planned diet."

Story County Medical Association

Fifteen members of the Story County Medical Association were present February 11 at the banquet and clinic held at the Sheldon-Munn Hotel.

Dr. F. H. Conner of Nevada, presented a paper on the Massachusetts Hospital Clinic, and Dr. B. G. Dyer of Ames gave a demonstration on The Anatomy and Pathology of the Mastoid. Dr. F. S. Smith of Nevada also read a paper.

Plans for another meeting to be held in a short time by the physicians were made last evening, and a committee will be selected to arrange for a program.

Tama County Medical Society

The Tama County Medical Society had a good meeting in Toledo on Wednesday, February 18. Luncheon was served at noon at Hotel Toledo, followed by a program and business meeting. Dr. J. A. Pinkerton of Traer read a paper on Foods, and Mrs. A. A. Crabbe, also of Traer spoke on The Passing of the Country Doctor.

This was the first address ever given by a doctor's wife at a meeting of the Tama County Society. This feature is to be continued from time to time as a result of action taken at a meeting in Traer several months ago when it was decided that the doctors' wives attending meetings will be heard as well as seen.

The next meeting will be held in Toledo in April, when the annual election occurs.

A. A. Crabbe, M.D.

Woodbury and Monona County Medical Societies

The Woodbury and Monona County Medical Societies met at the West Hotel, Sioux City, February 26, 1925.

Dr. A. Sachs, professor of clinical medicine, Creighton University, Omaha, presented the principal address: Vertigo; discussed by Drs. J. E. Reeder, Clifford R. Watkins, W. D. Runyon and J. H. Robbins.

Iowa Tuberculosis Association

The annual meeting of the Iowa Tuberculosis Association was held at the Grant Club, Des Moines, February 5-6, 1925. The Iowa Sanatorium Association and Iowa Trudeau Society held meetings at Broadlawns, February 6.

George Hamilton, secretary of the Convention Bureau of the Des Moines Chamber of Commerce, was chairman of the local committee on arrangements.

The principal out of the state speaker was Dr. Charles O. Giese of Colorado Springs, who addressed two sessions of the State Association and the Sanatorium Association and held a very fine tuberculosis clinic at Broadlawns under the auspices of the Trudeau Society.

Speakers at the general session were Verne Marshall, editor of the Cedar Rapids Gazette, subject, Publicity; Rev. R. B. Hyten of Cedar Rapids, subject, Flesh—Blood—Tenements; Margaret Biggerstaff, director of occupational therapy, Getting Well by Getting Busy. Dr. J. W. Kime presided.

Speakers at the general luncheon were Honorable J. B. Weaver, chairman of the State Child Welfare

Commission and Dr. E. H. Lauer, director of the Extension Division of the University of Iowa.

A very interesting feature of the Health Education Section was the health playlet "Food Fantasy", given by pupils of Lincoln School, Valley Junction, and directed by Miss Lillian Newton, music supervisor. This was followed by a baseball drill given by the boys of Longfellow School, Valley Junction, directed by Miss Rose Hoppe and Edna Fulton.

Agnes Conway, R.N., Davenport, presided over the nursing section; Dr. John H. Peck at the annual dinner, and Miss Frances Brophy of the University of Iowa at the seal sale round table. Miss Lucy McMichael, a new member of the staff, presided at the health education luncheon. Speakers were Miss May Francis, state superintendent of public instruction; Beatrice Short, Des Moines; Helen Boyd, director of the School of Public Health Nursing, Iowa City, and Miss Biggerstaff.

The meeting of the Sanatorium Association was devoted to the subject of food. Miss Ruth Wheeler, professor of nutrition of the University of Iowa, was one of the speakers. Miss Charlotte J. Garrison, superintendent Broadlawns, was in charge of the arrangements and program.

At the annual business meeting of members followed by the meeting of the new board of directors, officers and directors-at-large the members of the executive committee were elected and the names of representative directors from counties were reported. The full list is attached below.

The following resolution was adopted:

Whereas, we recognize that tuberculosis of cattle is a serious danger to the health and lives of the people of the State of Iowa, and especially to children, therefore,

Be It Resolved, by the Iowa Tuberculosis Association that the General Assembly be requested to make no change in the law with regard to the testing of cattle for tuberculosis which will in any way interfere with the testing of all cattle of the state.

Officers

Dr. John H. Peck, president; Gov. John Hammill, Hon. vice-president; Dr. Walter L. Bierring, Hon. vice-president; Mrs. H. W. Spaulding, vice-president; Miss Adah L. Hershey, secretary; B. F. Kauffman, treasurer; T. J. Edmonds, executive secretary.

Executive Committee of Board of Directors

Dr. A. L. Brooks, Audubon; H. S. Hollingsworth, Des Moines; Dr. F. E. Sampson, Creston; Mrs. Loui Weinstein, Burlington; Mrs. F. E. Whitley, Webster City; Dr. E. T. Edgerly, Ottumwa; Gertrude Stafford, West Union; Dr. J. W. Kime, Ft. Dodge, president Iowa Trudeau Society; Dr. H. V. Scarborough, Oakdale, president Iowa Sanatorium Association; Earle L. Waterman, Iowa City, chairman Housing Bureau.

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Nominating Committee

Dr. J. C. Painter, Dubuque; Dr. R. A. Becker, Atlantic; Herminie Schnekloth, Davenport; Mrs. R. E. Duff, Clarinda; Mrs. Elizabeth Johnston, Cedar Rapids.

Time and Place Committee

Mrs. H. E. Humphreys, Union; Mrs. W. E. Wilson, Mason City; Angeline Wictor, Sioux City.

Des Moines Academy of Medicine

Professor E. V. McCollum of the department of hygiene and public health of the Johns Hopkins University, Baltimore, addressed the Academy and guests on the evening of January 17, 1925. He spoke upon the subject: Our Present Knowledge of Vitamines.

Professor McCollum in a very comprehensive manner traced the history of the development of the study of viatamines, discussing them from the chemical and physiological viewpoints. He also explained how the lay person as well as the physician could use the knowledge already available in working out practical diets.

The next regular meeting of the Academy is to be held on April 10, 1925. The speaker on this occasion will be Professor A. J. Carlson, head of the department of physiology of the University of Chicago. His address will be upon The Problem of the Endocrines.

NEW ADVERTISER

Mr. Grant Jordan, a collection expert of long experience, whose advertisement appears on advertising page xix, is a new advertiser. He has made a specialty of doctors' collections and comes to us well recommended.

TAKE DUE AND TIMELY NOTICE

Your 1925 membership card will be your mark of eligibility to register at the Seventy-Fourth Annual Session, Des Moines, May 13, 14 and 15. Have you paid your 1925 dues to your local secretary?

COMING MEETINGS

The Western Physiotherapy Association

Arrangements are all completed for the seventh annual meeting of the Association, which will be held at the Little Theatre, Kansas City, Missouri, Thursday and Friday, April 16 and 17, under the presidency of Dr. L. A. Marty of Kansas City. A number of men of national reputation will be present to address the members. The medical department of U. S. A., will also be represented. Dr. T. Howard Plank of Chicago will hold a clinic at the General Hospital on the afternoon of April 16. Members of the Association desiring to present cases for diagnosis or operation may make arrangements with the secretary for these cases to have the personal attention of Dr. Plank. The preliminary program is as follows:

"Obstipation" and "Reaction of Degeneration" (illustrated) Frederick H. Morse, M.D., Boston, Massachusetts.

"Combination of Electrocoagulation and Radiotherapy in Malignant Tumors," Gustav Kolischer, M.D., Chicago, Illinois.

Title to be announced, Miles J. Breuer, M.D., Lincoln, Nebraska.

"Phototherapy in Hay Fever," J. L. Myers, M.D., Kansas City, Missouri.

"Phototherapy in Skin Diseases" (illustrated by moving pictures), Lynne B. Greene, M.D., Kansas City, Missouri.

"High Frequency Currents," A. David Willmoth, M.D., Louisville.

"Physiotherapy in a General Hospital," E. C. Henry, M.D., Omaha.

"Actinic Rays in the Treatment of Infections," Wm. E. Howell, M.D., Chicago.

"The Mercury Vapor Lamp and the Carbon Arc in Ultra Violet Therapy," A. J. Pacini, M.D., Chicago.

Title to be announced, Curran Pope, M.D., Louisville.

"The Goiter Question," Edward G. Blair, M.D., Kansas City, Missouri.

Others on the program will include Drs. Byron Sprague Price, New York City; Burton B. Grover, Colorado Springs; T. Howard Plank, Chicago, and W. B. Chapman, Carthage, Missouri.

The Western School of Physiotherapy

Under the direction of Dr. B. B. Grover, will hold its seventh annual session, April 9, 10 and 11, at Hotel Bellerive, and 13, 14 and 15, at the Little Theatre. This school is largely post-graduate in character for physicians only, and is conducted along strictly ethical lines.

The Exhibits

The exhibit space has been considerably enlarged in the Little Theatre for this year, and a number of new exhibits will be displayed.

Any physician who is interested in the progress of physiotherapy, cannot afford to overlook the meeting

and school. Full information may be obtained by addressing the secretary, Charles Wood Fassett, M.D., 115 East 31st street, Kansas City, Missouri.

The American Urological Association

The American Urological Association, which is our largest national urological association meets in St. Louis, May 21, 22 and 23, with headquarters at the Chase Hotel.

I am very anxious to let the men throughout your section of the country know of this meeting so that if any of them wish to attend they can make preparation for it. Would you be kind enough to make an announcement in the March and April editions of your State Journal? You may incorporate in this announcement that the mornings will be devoted to clinics in the various hospitals and the afternoons to the scientific session which will be conducted in the ball room of the Chase Hotel.

With kindest regards, I am,

Jno. R. Caulk, M.D.,
Chairman of Arrangements.

LAST CALL FOR REGISTRATION

Inter-State Post-Graduate Assembly Clinic Tour of American Physicians to Canada, British Isles and France

The medical profession of America who are in good standing in their State Medical Societies and members of their families are cordially invited to participate in the Inter-State Post-Graduate Assembly clinic tour of Canada, British Isles and France leaving Chicago May 17 and sailing from Montreal May 23. There is no restriction to territory. Dr. Charles H. Mayo of Rochester, Minnesota, will be the presiding officer of the tour, Dr. Addison C. Page, chairman of the executive committee, and Dr. William B. Peck of Freeport, Illinois, managing-director.

The following distinguished members of the profession and citizens of the foreign countries are in charge of the arrangements in the clinic cities: Toronto—Dr. Alexander Primrose, dean of the University of Toronto. Clinics will be conducted in the different branches of medical science at the Toronto General Hospital, the medical building of the University of Toronto General Hospital, the medical building of the University of Toronto and other institutions of the city. Montreal—Dr. Charles F. Martin, dean, and Dr. Jonathon C. Meakins, director of the department of medicine of McGill University. London, England—Mr. Philip Franklin, F.R.C.S., director of the American Hospital and honorary organizer; Sir Humphry Rolleston, Rt., president, Royal College of Physicians; Sir St. Clair Thomas, president of the Royal Society of Medicine; Sir William Hale White, retiring president Royal Society of Medicine; Sir William Arbuthnot Lane; Sir Holburst J. Waring, chairman of the medical program committee; Mr. W. Girling Ball, F.R.C.S.; Mr. H. W. Carson, F.R.C.S., and the honorary secretaries of the different specialties.

Special social features of the London program will include the conferring of the honorary membership of the Association upon H. R. H. Duke of York, the Rt. Hon. Austen Chamberlain, minister of foreign affairs; Rt. Hon. Neville Chamberlain, minister of health; Sir Alfred Bower, Lord Mayor of London; Lord Desborough, chairman of the Pilgrims Society; Sir Humphry Rolleston, Bt., president Royal College of Physicians; Sir John Bland Sutton, president, Royal College of Surgeons; Sir St. Clair Thomson, president Royal Society of Medicine; Sir Holburt J. Waring, chairman of Medical Program Committee; Sir John Y. W. MacAlister, secretary, Royal Society of Medicine.

Receptions and luncheons will be given by the Lord Mayor of London, the presidents of the Royal Societies of Medicine and Surgery, the English-Speaking Union, the Pilgrims Society, American Chamber of Commerce and members of the British Government.

Liverpool—Sir Robert Jones, Mr. R. E. Kelly, F.R.C.S., and members of the staffs of the following hospitals: Royal Infirmary, Royal Sourhern Hospital, Northern Hospital, Liverpool Stanley Hospital, Royal Liverpool Childrens' Infirmary, Hospital for Women, Liverpool Maternity Hospital.

Manchester—Sir William Milligan and members of the staff of the Royal Infirmary.

Leeds—Sir Berkeley Moynihan and members of the staff of the University of Leeds.

Dublin—Sir William DeCourcy Wheeler, past president of the Royal College of Surgeons of Ireland, honorary organizer; Sir William Taylor, Sir Arthur Ball, Sir Robert Woods and their colleagues. The clinic work will be distributed among nine hospitals. The governor-general of the Irish Free State has invited the Assembly to a garden party at the Government House. A reception committee has been formed consisting of the Provost of Trinity College; president of University College; president, Royal College of Physicians; president, Royal College of Surgeons; president, Royal Academy of Medicine, and president of Association of Surgeons. These gentlemen, separately or collectively, will entertain the Assembly on the night of its arrival. The Hon. Lady DeCourcy Wheeler is organizing a ladies' committee to take care of the visiting doctors' wives while the doctors are at work.

Belfast—Prof. Andrew Fullerton, C.B., C.M.G., head of the department of surgery, Queen's University, chairman; Sir Thomas Sinclair, Emeritus Prof. of Surgery and a member of the House of Parliament; Prof. W. W. D. Thomson, head of the department of medicine; Prof. R. J. Johnstone, head of the department of gynecology; Prof. C. G. Lowry, head of the department of obstetrics; Prof. J. E. MacIlwaine, head of the department of therapeutics and pharmacology; Dr. A. J. Craig and Dr. H. Hanna, department of ophthalmology and otology; Prof. Symmers, head of the department of pathology and

Dr. Thomas Houston (hæmatologist). In presenting the clinics and demonstrations the teaching staff of Queen's University will be associated with that of the Royal Victoria Hospital.

The social features will include a garden party given by Sir James and Lady Craig, Prime Minister of Northern Ireland at Stormont Castle.

Glasgow—Sir Donald MacAlister, K.C.B., principal of the University of Glasgow, chairman; Dr. James Carslaw, secretary and members of the staff of the medical department of the University of Glasgow.

Edinburgh—Sir Harold J. Stiles, head of the department of surgery, University of Edinburgh, chairman; Dr. John D. Comrie, secretary; Sir Norman Walker, Sir David Wallace, Sir E. A. Schafer, and associates at the University of Edinburgh and the Royal Infirmary.

Newcastle-upon-Tyne—Mr. George Grey Turner, F.R.C.S., and associates on the staff of the Royal Infirmary of Newcastle and the University of Durham.

Paris—Prof. Theodore Tuffier of the surgical department faculty of medicine, Paris, chairman; Dr. T. deMartel, secretary. Practically all the hospitals of Paris are contributing programs for the benefit of the American physicians.

Among the numerous social functions of Paris are the following: A reception given on June 22 by the Academy of Medicine: a large reception given in honor of the American physicians by the Municipal Council of Paris at the Hotel de Ville (city hall); an evening reception and banquet by the Inter-Allied Assembly and a reception by Professor Tuffier at his country home, which is located near Versailles. Honorary memberships will be conferred upon distinguished statesmen, soldiers and citizens of France.

The tour is being conducted as the result of an invitation extended to the American physicians through this Association by the leading universities and medical institutions of Canada, British Isles and France.

Clinic space in all the clinic cities has been arranged so as to accommodate five hundred physicians. The clinics will cover every branch and specialty of medical science. The price of the tour, including traveling expenses under $1000.

Two ships have been chartered to take the physicians abroad, the "Ausonia" of the Cunard Line and the "Doric" of the White Star Line. They are fine new one-cabin ships with excellent appointments. Trans-Atlantic professional programs will take place on board both ships Eastbound and will be participated in by the physicians of the tour.

Reservations can be made by sending the reservation fee of $65 per person to Dr. William B. Peck, managing-director, Freeport, Illinois. There are plenty of first-class accommodations available.

The registration March 17 was 375 physicians and total number, including members of the physicians' families, 625. Forty-one states are represented, and quite a number of provinces of Canada.

MEDICAL NEWS NOTES

Dr. J. S. Rodman, secretary-treasurer of the National Board of Medical Examiners, has accepted the chair of surgery in the Woman's Medical College of Philadelphia, following the footsteps of his father, Dr. W. L. Rodman, who occupied this chair from 1902 to 1908.

Dr. Irving Samuel Cutter, dean of the college of medicine of the University of Nebraska, has been appointed dean of the medical school of Northwestern to succeed Dr. Arthur I. Kendall, who resigned at the close of the last school year to accept an appointment as professor of bacteriology and public health at Washington University Medical School. Dean Cutter will assume his new duties at the close of the school year in June after ten years of service at the University of Nebraska.

HOSPITAL NOTES

The Allen Memorial Hospital at Waterloo, operated by the Deaconess' Society of the Evangelical Church, was opened February 7 to receive patients February 8.

The Sisters of St. Joseph's Hospital, Webster City, gave a banquet to its staff February 10. Officers of the staff are: Dr. T. F. Desmond, president; Dr. F. F. Hall, vice-president; Dr. J. L. Peppers, secretary; Dr. O. A. Hall, treasurer.

Election of officers of Mercy Hospital, Clinton, January 27: Dr. J. C. Langan, president; Dr. H. E. Martin, vice-president; Dr. H. B. Brumer, secretary-treasurer; Dr. Lamb of Davenport, laboratory director.

PERSONAL MENTION

Dr. B. Frank Walters, who has succeeded to the eye, ear, nose and throat practice of the late Dr. Lee Weber of Davenport, received his training in Philadelphia, over a period of twelve years, during which time he was connected with the Medico-Chirurgical College and Hospital, the Frankford Hospital, and the Methodist-Episcopal Hospital in the special field of eye, ear, nose and throat diseases.

Dr. Charles Ricksher of Fairfield was in attendance at the meetings and clinics of the American Congress on Internal Medicine, held at Washington, D. C. Clinics are held at all the large Washington hospitals including the Walter Reed Army Hospital. On Thursday evening, March 12, Dr. Ricksher was honored by being made a Fellow of the American College of Physicians, which held its annual convocation on that date and in conjunction with the meeting of the American Congress on Internal Medicine. Other Iowa physicians who are Fellows in the

American College of Physicians include Dr. F. M. Fuller, Keokuk, president, and Dr. Tom B. Throckmorton, secretary of the Iowa State Medical Society; Dr. Granville Ryan of Des Moines, and Dr. J. S. Gaumer of Fairfield.

A bronze memorial portrait plaque of Dr. Jennie McCowan, by the sculptor Vincenzo Miserendino, is to be placed in the Lend-A-Hand Club at Davenport as a recognition of her services to humanity. The funds have been provided jointly by the King's Daughters and the Lend-A-Hand Club.

Dr. Frank Jennings Cornelius, recently of the Postville Hospital, has resigned, to become a member of the Cherokee state hospital staff. He was graduated from the college of medicine, Iowa University, and has "made good" distinctly.

Dr. E. A. Nash of Peterson is Iowa's only doctor who has ever published a book of original verses. He has also composed the words for several songs which have been set to music and are very pretty. Dr. Nash has been writing verses nearly all his life, the last few years giving them considerable more of his time and thought. He has a style all his own and his poems are varied, serious and otherwise. A number of these have been compiled in a book "Random Rhymes for Home Folks" which he is placing on the market and which are finding a ready sale. The book is neatly printed and bound and has a number of illustrations, also a half tone print of the author and his little daughter. Dr. Nash has disposed of his practice at Peterson and will devote his time in the future to selling his books and songs.—The Pioneer, Sanborn.

Dr. John H. Peck of Des Moines was re-elected president of the Iowa Tuberculosis Association at the annual election of officers. Gov. John Hammill was named first vice-president. Others named vice-president were Dr. Walter Bierring and Mrs. H. W. Spaulding. Miss Adah Hershey was re-elected secretary. B. F. Kauffman was again named treasurer. The executive committee of the board of directors named are: Dr. A. L. Brooks, Audubon; H. S. Hollingsworth, Des Moines; Dr. F. E. Sampson, Creston; Mrs. Louis Weinstein, Burlington; Mrs. F. E. Whitley, Webster City; Dr. E. T. Edgerly, Ottumwa, and Gertrude Stafford, West Union.

Dr. Louis C. Stuhler, formerly of Iowa City, has been appointed to membership on the general staff of the Mayo Brothers' Hospital, Rochester, Minnesota. He will remove to that city, accompanied by his wife, about April 1. He has practiced in Chicago, and was a practitioner at Monticello, Iowa, before he went to the metropolis, where he is now located. He was graduated from the college of medicine, S. U. I., in 1906.

Dr. H. C. Parker of Fair Oaks farm, Lisbon, has accepted an offer from the board of the Peter Bent Brigham Hospital in Boston to become assistant superintendent of the administration department of that institution, and will soon leave to take over his dtuies there for a term of five years.

Dr. Granville Ryan, Des Moines, attended the annual meeting of the American College of Physicians and the Congress on Internal Medicine, March 9-15, Washington, D. C.

Dr. George Stock, who has been assistant physician at Oakdale Tuberculosis Hospital, has been appointed assistant physician at the United States Veterans Hospital, Dawson Springs, Kentucky.

Dr. Leo J. Homback, a son of Dr. W. P. Homback of Council Bluffs, has located in Persia for the practice of medicine.

Dr. Burt G. Bissell, recently resident physician at Cook County Hospital, Chicago, has located in Dubuque and will limit his practice to diseases of children.

Dr. J. C. Boice of Washington, has completed fifty years in the practice of medicine. Dr. Boice is a graduate of the old Keokuk Medical College (College of Physicians and Surgeons); is seventy-nine years of age and a member of the G. A. R. Dr. Boice has no intention to retire from practice, as he has not reached the retiring age.

Dr. Dennis H. Kelly of Chicago has located in Waterloo and has become associated with Dr. George E. Hearst. Dr. Kelly was formerly associated with the Cook County Hospital staff.

Dr. Frank Landes, formerly of Benton, Iowa, has purchased the Horne office building at Mt. Ayr, where he will engage in the practice of medicine.

Dr. Wade Preece, who has completed a three year internship in St. Vincent's Hospital, New York City, has located in Waterloo, as an assistant to Dr. O'Keefe.

Dr. Lena Beach, for the past two years superintendent of the Home School for Girls, Sauk Center, Minnesota, who resigned her position August 29, 1924, because of ill health, was relieved of her position February 15.

Dr. Garry T. Notson, superintendent of the Methodist Hospital, in Sioux City, has been appointed secretary of the Methodist Episcopal Board of Hospitals, which rules and regulates all Methodist Episcopal hospitals throughout the world.

MARRIAGES

Dr. W. L. Fickey of Sioux City and Miss Ruth Lenore Smith of Mapleton, were married January 26, at Elk Point, South Dakota.

Dr. George L. Dixon of Burlington and Miss Ellen Swanson of Newberry, Michigan, were married at Newberry in July, 1924. Dr. Dixon is a graduate of the Iowa University Medical School.

Dr. Roy J. Crary of Iowa City and Miss Ruth Kelly were married at Iowa City, February 3, 1925.

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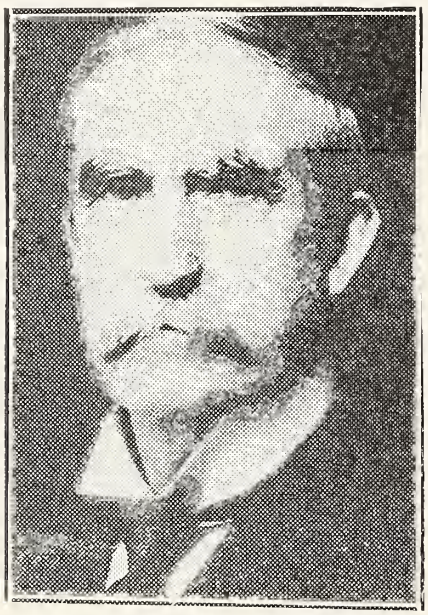
OBITUARY

Dr. R. U. Chapman, 1110 Twenty-fifth street, Des Moines, was born in Leesburg, Ohio, July 24, 1837, and passed away January 30, 1925, at the age of eighty-seven years, six months and six days.

He began the practice of medicine at Bakersville, Ohio, in 1865; later at New Rumley, Ohio, coming to El Paso, Illinois, in 1869, where he practiced medicine until 1885, coming to Iowa where he practiced at Prescott two years, removing his family to Des



DR. R. U. CHAPMAN

Moines in 1891, where he was in active practice until his eightieth year, when age and failing health caused him to cease practicing. However, he saw a few old patrons after this time.

He was a graduate of Chicago Medical College and Iowa College of Physicians and Surgeons. Was also a veteran of the Civil War, a member of the 24th Ohio Volunteers Infantry, serving as Corporal. General Josiah Given was his captain. He was member of U. S. Pension Board for thirty years; was Master Mason some sixty-two years.

He came of large family of physicians—five out of seven brothers being physicians, all practicing medicine in state of Ohio.

He was a democrat and was nominated by his party for state treasurer in 1898, but declined to accept the nomination.

His death was hastened by the death of his son, Dr. R. R. Chapman, of Bridgewater, Iowa, who passed to the Great Beyond December 12, last.

He was an ardent temperance man.

He is survived by Dr. C. McG. Chapman of Des Moines and E. P. Chapman of Prescott, Iowa, Flora B. Chapman and Mrs. Kathryn C. Alexander, also of Des Moines, his wife having preceded him in death just two years previous at the age of eighty-six.

Dr. James W. Morgan of Wapello, died at the home of his sister at Louisa Center, February 6, 1925.

Mr. Morgan was born in Marthyr, Tydvil, Wales, April 22, 1854. He came to America with his family when he was four years old; the family settled in Wisconsin. He was educated in the common schools of his neighborhood and at the Galva (Illinois) high school.

Dr. Morgan began the study of medicine in the office of Dr. John Overholt of Columbus City, Iowa; attended medical lectures in Indianapolis, Iowa City and Keokuk, graduating from the College of Physicians and Surgeons at Keokuk in 1884. Practiced medicine at Columbus City for a short time, about one year at Winfield, moved back to Columbus City, where he remained until 1903, when he moved to Muscatine and practiced until 1913. He then moved to Wapello, where he remained until about three years ago, when he became paralyzed and retired from practice.

On July 5, 1877, he married Miss Jerusha Donaldson, who survives him.

Dr. G. N. Skinner died at his home in Winterset February 19, 1925, of pneumonia.

Dr. Skinner was born in Birmingham, Van Buren County, Iowa, May 28, 1854. Was educated at Birmingham Academy, and, after teaching four years, entered the Keokuk Medical College. He then located at Truro, and after five years practice, became a student at Drake University Medical School, from which school he graduated in the class of 1889. He practiced one year in Madison county and for one year lived in California. He then located in Winterset, where he lived until the time of his death.

Dr. Skinner married Laura L. Rankin in 1882, who, with a son and daughter, survive him.

Dr. J. W. LaGrange, for forty years a practicing physician in Marion, died at Daytona Beach, Florida, February 1, 1925, as the result of a stroke of apoplexy.

Dr. LaGrange was born in Indiana, April 29, 1849. He was graduated from Rush Medical College, Chicago, after which he came to Marion. He was married to Miss Carrie Alexander and to them were born four children, two of whom survive. Wesley LaGrange of Long Beach, California, and Mrs. Carolyn Brooks of New York City. Mrs. LaGrange died many years ago.

Dr. LaGrange was married to Mrs. Maggie Blakesley, who also died. To them was born one son, William LaGrange, now an instructor in the State College at Ames. Three years ago, Dr. LaGrange was married to Mrs. Jessie Markham at Herkimer, New York.

Dr. LaGrange retired from active practice, and was spending the winter at Daytona, Florida.

Funeral services for Dr. C. J. McDermott, Sioux City physician, who died Sunday morning, February

8, 1925, at a Sioux City hospital, was held at the chapel in St. Vincent's Hospital at 9 o'clock February 9.

The body was sent to Philadelphia, Dr. McDermott's birthplace, for burial.

Dr. McDermott's death followed a year's illness. He had lived in Sioux City for eight years. His internship was served at St. Vincent's hospital and for three years he had practiced here.

Dr. Howard Dalton Miller, fifty-eight years old, formerly a resident of Des Moines, died recently in the Ft. Steilacon Hospital at Seattle, Washington.

Dr. Miller was the son of the late Justice William E. Miller of the Iowa Supreme Court, and had lived for many years in East Des Moines. He was educated in Iowa and practiced medicine in Des Moines for several years, prior to going to Clinton, where he was in partnership with Dr. Fairchild. Upon moving to Seattle he was a nerve specialist at the Ft. Steilacon Hospital.

William Horne, son of William and Mary (Gray) Horne, was born in Vevey, Switzerland county, Indiana, December 30, 1843, and died January 22, 1925, at his home in Mount Ayr, Iowa, after an illness of five weeks, being eighty-one years and twenty-three days old.

He received the usual elementary education in the district schools of his native state. He attended Chicago Medical College the winters of 1864-65 and 1865-66, graduating March 1, 1866. He was the oldest living graduate of that college at the time of his death. He practiced almost three years in Monmouth, Illinois, coming to Mount Ayr in February, 1869, and practiced almost fifty years in Mount Ayr.

Among the associations of his profession to which he belonged were Southwestern Iowa Medical Society, Iowa State Medical Society, American Medical Association and the National Association of Railway Surgeons.

He was married to Mary Law December 14, 1869. To this union were born three children, who with the wife and mother survive. The children are Mrs. Minnie Horne Sheldon, J. O. Horne and Charles L. Horne, all of this community.

Dr. Oliver Furst, formerly of Iowa City was graduated from the college of medicine, Iowa University, in 1883—exactly 100 years after his grandfather, the afterwards noted Dr. Conrad Cornelius Pellman, was graduated from an eastern institution, to become a surgeon in the Revolutionary War.

Dr. Furst practiced in Iowa five years, and then removed to Kansas, where he remained for many years, before going to the coast.

He practiced to the day of his death, although he had been a victim of a chronic ailment. He was division surgeon of the Santa Fe Railway Company at one time.

Surviving are his widow, formerly Miss Jennie Snyder; and two sons and one daughter—Clifford, of Los Angeles; and Thomas, of Glendale; and Mrs. Robert I. Lyons of Glendale. He was a prominent Mason, Woodmen of the World brother, and a Presbyterian elder.

Sir Clifford Allbut, one of the most noted English physicians, died February 22, 1925, at the age of eighty-eight years.

Sir Clifford did not belong to England alone, but to the entire medical world, on account of the many contributions made to medicine during a long and active life.

Sir Clifford was born July 20, 1836. His medical career covered a period of sixty-six years and during this time he had received every honor that could be conferred upon a British physician. At the time of his death he was regius professor of medicine at Cambridge University, England, a position that he had held since 1892. This professorship was created in 1540 and had been held by a long line of distinguished physicians. Sir Clifford was a man of profound learning and had written extensively on many subjects, particularly on medical history, Allbut's System of Medicine, and his two volume work on diseases of the arteries, was received with great favor as a classical contribution. His long and active career in medicine is an inspiration to every physician who devotes himself to his profession.

Dr. Archibald Maclaren of St. Paul, died October 12, 1924. He was born in Red Wing, Minnesota, in 1858. Graduated from Princeton University in 1880 and received his medical degree from the College of Physicians and Surgeons, Columbia University, New York City.

Dr. Maclaren came to St. Paul when he was ten years old. After graduating in medicine he served as intern in the New York Woman's Hospital. After locating in St. Paul he became associated with Dr. Edward C. Spencer in 1885. After the death of Dr. Spencer, he became associated with Dr. C. A. Wheaton until 1896. In 1898 he joined with Dr. Harry P. Ritchie and with them were associated Dr. Louis E. Daugherty and Dr. Harry Oerting.

Dr. Maclaren was a Fellow of the American Medical Association, the American College of Surgeons, and the American Surgical Association. He was also chief surgeon of the Chicago, St. Paul, Minneapolis & Omaha Railroad. Dr. Maclaren was for many years one of the most prominent and best known of Minnesota surgeons.

He was elected president of the Minnesota State Medical Society for the St. Cloud meeting, was also professor of surgery, University of Minnesota.

TAKE DUE AND TIMELY NOTICE

Your 1925 membership card will be your mark of eligibility to register at the Seventy-Fourth Annual Session, Des Moines, May 13, 14 and 15. Have you paid your 1925 dues to your local secretary?

BOOK REVIEWS

THE MEDICAL CLINICS OF NORTH AMERICA

Vol. VIII, No. 2, 273 Pages and 24 Illustrations. Price Per Clinic Year, Cloth, $16.00; Paper, $12.00. W. B. Saunders Company, 1924.

With this Chicago number (September, 1924), comes a group of well known internists, presenting an interesting series of cases. Dr. Abt gives a study of a case of Aleukemic Leukemia which had been under observation for some time. Death occurred after three weeks in the hospital. The post-mortem study was interesting.

Dr. Ralph C. Hamill presents a study of Tics, which are always interesting, in that while not dangerous, are annoying and troublesome to control. Dr. Hamill describes Tic as a symptom and points out the approved medical and surgical treatment.

Dr. Arthur R. Elliott presents two cases of Cardiac Aneurysm, rare conditions. A number of clinical cases of chronic Nephritis are considered.

The Chicago medical clinics, on account of the large and varied material, are full of interest and the reader will generally find what he wants.

TWO LECTURES ON GASTRIC AND DUODENAL ULCER, A RECORD OF TEN YEARS' EXPERIENCE

By Sir Berkeley Moynihan, Leeds, England. Price 2/9 Post Free. John Wright & Sons, Ltd., Bristol, Eng. Wm. Wood & Co., New York Agents, 1923.

This book of forty-eight pages presents the views and experiences of one of the greatest living surgeons.

When the subject of gastric and duodenal ulcers is presented, the name of Sir Berkeley Moynihan comes to mind as one who has contributed much to the surgery of the stomach. In this review 718 cases are presented as a basis of study. Sir Berkeley very justly observes, "The literature of this subject is already formidable in volume, but unhappily its value is by no means proportionate to its bulk." A brief review of the older literature is presented to show how the present advanced stage was reached. A brief outline of symptoms is reviewed and questions of diagnosis entered into. Medical treatment is fully considered and evaluated, with the observation that, "The dangers of medical treatment, therefore, are very formidable."

Following medical treatment comes the discussion of surgical treatment, and after a consideration of methods of operations, concludes; that the operation he regards with the most confidence as thoroughly satisfactory for the great majority of cases, is gastrectomy, and presents his reason for this choice.

The second lecture relates to the treatment of duodenal ulcer. Of the 718 cases of ulcer, 531 were duodenal ulcer (men 433, women 98), of which there were no deaths from operation. The merits of medical and surgical treatment are considered, and reaches the conclusion that, "When medical treatment has failed, not once only, but perhaps many times, surgical measures will be deliberately sought."

The remainder of the lecture is devoted to several questions and to methods of surgical treatment. Both physicians and surgeons will find much in these lectures of material value and interest. But few writers are able to present questions in more impressive English than Sir Berkeley Moynihan.

MEDICAL GYNECOLOGY

By S. Wyllis Bandler, M.D., Professor of Gynecology, New York Post-Graduate Medical School and Hospital. Fourth Edition. Thoroughly Revised; Octavo of 930 Pages, With 157 Original Illustrations. W. B. Saunders Company, 1924. Cloth, $8.00, Net.

There appears to be a reaction from the view that gynecology is a branch of surgery and that gynecology means surgery. Dr. Bandler has in four editions shown that an important side of gynecology is medical and that much of the treatment in which surgery has been employed, could have better been treated by other means.

Of first importance is a correct diagnosis based on a careful examination. There are many women suffering from a general impairment of health who present symptoms apparently due to some uterine difficulty, some displacement, perhaps, who are supposed to need an operation, but recover under medical and hygienic treatment, together with properly directed local treatments.

An interesting chapter is presented on the use of pessaries in uterine displacements, which at one time it was said should be discarded, and also a chapter on the endocrine glands in their relation to gynecologic practice, to which Dr. Bandler has given considerable attention.

Uterine discharges, as hemorrhages and leukorrhea are given considerable attention. The causes of hemorrhage are of great importance, particularly malignant disease. Questions of pain, the relation of the nervous system in one way and another, constitute an important feature of medical gynecology.

Inflammation of uterus and the appendages constitute a considerable portion of the work.

The general practitioner will find this book of very material help in his work, for it is the general practitioner who first comes in contact with diseases of women and if he succeeds in reaching a correct diagnosis. and a helpful treatment, he will be able to hold many a patient who otherwise may drift into the hands of the specialist. Some of these cases, however, he will find later may need surgical gynecological treatment.

THE PRINCIPLES AND PRACTICE OF OBSTETRICS

By Joseph B. De Lee, A.M., M.D., Professor of Obstetrics at Northwestern Medical School. Fourth Edition. Thoroughly Revised. Large Octavo of 1123 Pages, with 923 Illustrations, 201 in Colors. W. B. Saunders Company, 1924. Cloth, $12.00 Net.

The contributions of Professor De Lee to obstetrics has placed his work among the first in this field of medicine. In the presentation of this new edition to the profession, the author in the preface states: "For this the fourth edition of my book, both text and illustrations were submitted to a most thorough and painstaking revision. A constant effort was made to avoid increasing the size of the volume, but it was found possible to omit very little of the text matter and but few of the illustrations. Many of the latter have been redrawn and many of the old pictures replaced by new subjects." This is an important statement in view of the fact that former editions are well known to the profession.

This volume is an exhaustive work on the whole subject of obstetrics, nothing known of obstetrics has been omitted. Commencing with the introduction which presents an historical outline, the physiology of pregnancy and ending with the most difficult operative undertakings. It is a book that the student should read carefully from beginning to end. It reminds us of our student days when we read systematically Hodge's great work on obstetrics as a foundation for all other teaching; that was a generation ago, since then great changes have taken place, but the idea we had in mind has not changed, we laid the foundation which we recommended to the student of today. In De Lee's great work the student of today may lay a foundation that will last to the end of his work, upon which he may establish as a foundation, the subsequent teaching and experience as time passes. To the practitioner, he may find helpful means of meeting the emergencies as they arise.

The illustrations, the text and the mechanical work are beyond criticism.

MIND AND MEDICINE

By Thomas W. Salmon, M.D., Professor of Psychiatry in Columbia University. Columbia University Press, New York.

This is an address at the opening session of the College of Physicians, Columbia University, September 26, 1923.

Dr. Salmon enters a plea for a better attitude of medicine towards psycho-neurosis, insanity and other mental problems, and draws attention to what Dr. William J. Mayo said not long ago, that "Neurasthenia, psychasthenia, hysteria and allied neurosis are the causes of more human misery than tuberculosis or cancer." That during the Great War, "war neurosis constituted a drain upon man-power comparable only to that from wounds and the effects of gas." More than 200,000 men were discharged from active service in the British army alone. From these premises Dr. Salmon insists upon a closer relation between medicine and mind. There should be no cleavage between scientific medicine and mental states, nor should we assume that deranged mental or nervous conditions are due to some physical disturbance to be relieved by some radical treatment. In the beginning of the Great War we were inclined to attribute certain neurosis to the physical conditions of "shell shock" without taking into account the state of mental development.

INTERNATIONAL CLINICS

A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles in the Several Branches of Medicine and Surgery. Edited by Dr. Henry W. Cattell and Dr. Charles H. Mayo. Volume II. Thirty-fourth Series, 1924. J. B. Lippincott Co.

The first section of the book is devoted to a symposium on Physiotherapy, by Charles R. Brooke, M.D.; Mary L. H. Arnold Snow, M.D.; W. A. Newman Dorland, M.D., and Sinclair Tousey, M.D., extensively illustrated.

The papers on Diagnosis and Treatment are presented by Drs. W. H. Haines, Nolie Mumey and E. F. Tabor, on Caudel Anesthesia in Urology.

The Diagnosis of Right-Sided Abdominal Conditions, by Dr. Charles Gordon Heyd; Syphilitic Aortitis, by Louis Pothean, M.D., and E. Bosworth McCready, M.D. Pediatrics, by Drs. James Burnet and J. P. Crozer Griffiths.

Section on Surgery by a group of distinguished surgeons, Donald C. Balfour, M.D., and Michael Flynn, M.D., of the Mayo Clinic, on Recent Advances in Surgery.

Following is a list of interesting subjects in surgery by well known surgeons: Pathology is represented by Dr. O. H. Perry Pepper of Philadelphia, and Industrial Medicine by Thomas Darlington, Ph.B., C.E., M.D.

This is an exceedingly interesting number of the well known clinical volumes issued by the J. B. Lippincott Company, who have industriously sought to secure contributions from clinical teachers in medical centers of the world.

TRANSACTIONS OF THE MINNEAPOLIS, ST. PAUL & SAULT MARIE RAILWAY SURGICAL ASSOCIATION FIFTEENTH ANNUAL MEETING

Minot, N.D., 1922, Under the Direction of Dr. John H. Rishmiller, Chief Surgeon.

For some years the different systems of railways have organized surgical associations for the purpose of discussing surgical questions involved in the operation of the roads. These questions have changed from time to time as methods of safety to passen-

gers and employes have changed. It is not so long ago that saving of injured parts and amputations were of first importance, but now amputations are rarely thought of.

The major injuries now involve the question of the management of fractures. In the field of litigation, in addition to injuries of the nervous system, comes the findings of the x-ray, which, by skilful manipulation, can be made to reveal anything desired to sustain a contention. There are also questions as to what constitute disqualifications for employment, etc. Many of the papers read before the Association are real contributions to surgery. Much may be said for the surgical department of Dr. Rishmiller's road (the M. St. P. & Sault Marie).

The 1922 "Transactions" constitute a very attractive volume of 166 pages.

THE MEDICAL CLINICS OF NORTH AMERICA

Volume 13, No. 1; July, 1924; Octavo of 426 Pages with 105 Illustrations. Price, Paper, $12 Net; Cloth, $16 Net, Per Annum of Six Numbers. W. B. Saunders Company.

The July Clinic is a New York number including some thirty-one contributions representing New York internests of which we may mention a few.

A notable lecture is by Dr. Harlow Brook, under the title of Chronic Gall-Bladder Disease and Chronic Appendicitis, in which he brings out the confusion which may arise in the patient's mind from a diagnosis of one, that he is suffering from gall-bladder disease, and by another that he is suffering from a chronic appendicitis, when both diagnoses may be true. Dr. Brook points out the element of error in diagnostic symptoms which has caused the confusion.

Dr. Walter L. Hines presents a series of cases of Congenital Fixation of the Duodenum by Hepato-duodenal Membranes (Harris Bands).

Dr. Russell L. Cecil presents a discussion of The Common Cold: Its Preventative and Treatment, a subject that the general practitioner is much interested in. The chlorine gas treatment is presented and advocated. It is stated that 74 per cent are cured and 25½ per cent improved.

Another notable presentation is Pyelitis, by Dr. Leo Buerger.

These are a few interesting papers in this excellent number.

SURGICAL CLINICS OF NORTH AMERICA

Vol. IV, No. 3; 245 Pages with 108 Illustrations. Per Clinic Year, Paper, $12; Cloth, $16 Net.

This, a Chicago number, presents a very attractive appearance externally; internally a series of clinics of unusual value.

Arthur Dean Bevan presents a clinic on Carcinoma of the Colon and a group of Abdominal Tumors in which the diagnosis is difficult. This study was conducted in association with Dr. Sippy and others and is of great suggestive value.

Dr. A. J. Ochsner presents a group of cases of cancer in which the treatment was conducted with the actual cautery; certain important conclusions were arrived at concerning cautery treatment.

Dr. Daniel N. Eisendrath reviews Congenital Strictures of the Ureter, illustrated by a series of beautiful cuts. Dr. Kellogg Spied considers a series of cases of Traumatic Lesions of Head of Radius, as a subject of great importance to industrial surgeons.

A series of cases of Brodie's Abscess is presented by David C. Straus. Dr. Frederick Christopher discusses Severe Carbuncular Infections of the Chest Wall.

We are presenting a few of the twenty clinics recorded in this number as illustrative of the general character of the June Clinics.

ORGANOTHERAPY IN GENERAL PRACTICE

Published by G. W. Carmick & Company.

This volume of 253 pages is prepared by the above company which is engaged in preparing certain products for the use of physicians who are interested in organotherapy.

PUBLIC HEALTH BULLETIN NO. 139—TRANSACTIONS OF THE TWENTY-FIRST ANNUAL CONFERENCE OF THE STATE AND TERRITORIAL HEALTH OFFICERS WITH THE UNITED STATES HEALTH SERVICE.

Held at Washington, D. C., May 16-17, 1923. Government Printing Office, Washington, D. C.

This bulletin of 176 pages presents the papers and discussions of the various health officers. Thirty-five states and territories were represented. We regret to note the fact that Iowa was not represented.

This bulletin may be read with advantage by those interested in health matters.

A NEW SILVER COLLOID

A preparation of silver iodide that is not affected by light—does not leave a dark stain as its solutions dry on the skin or the clothing—is something of a scientific achievement. A preparation of this kind, which the manufacturers call Neo-Silvol, is said to be equal to carbolic acid as a germicide, and in its effect upon certain pathogenic bacteria very much superior, while in therapeutic dilutions it has no escharotic effect—does not even irritate inflamed mucous membrane.

In these days of many silver salts this one seems to be particularly worthy of attention, and samples for trial are offered to interested physicians by the manufacturers, Parke, Davis & Co., Detroit, Michigan.

The Journal of the Iowa State Medical Society

Vol. XV | Des Moines, Iowa, May 10, 1925 | No. 5

MANAGEMENT OF DIABETES MELLITUS WITH MAINTENANCE DIETS

R. B. Gibson, Ph.D., Katherine Z. Mitchell, B.A., and R. N. Larimer, M.D.

The Clinical Chemistry Laboratory of the Department of Theory and Practice of Medicine and Clinical Medicine, The State University of Iowa

The present method of managing diabetes at the University Hospital has been developed during the last year. The system has greatly shortened the period of hospitalization and has made it possible to abandon the maintenance of a diabetic annex hospital. During the last year more than 200 cases of diabetes were admitted to the University Hospital. Most of these patients were referred by physicians throughout the state. It is therefore felt that a brief outline of the method employed may be of service to those men treating diabetics in general practice.

General Directions for Internes and Nurses

The laboratory is notified by the interne or nurse when the case is admitted to the ward so that the diet may be ordered and insulin prescribed when symptoms of acidosis are present. As a rule the patient is put to bed. When the routine management is established and the diet permits, he is allowed to be up and about the ward or room.

Each patient is required to have at least 1000 mls. of fluid during the twenty-four hours. The bowels are kept open by enema or laxatives, if necessary. Medication such as salicylates, which interfere with the laboratory tests, is avoided.

All of the urine passed is saved and placed in clean jars provided by the laboratory; specimens are carefully labeled. Day voidings are taken to the diabetic ice box at 6 p. m. Final collections for each twenty-four hour period are made at 6 a. m. promptly from all patients by the night nurse, and these together with earlier night specimens are delivered to the laboratory. Patients are instructed as to the importance of complete urine collection.

The patients are urged to eat all of each meal provided on the special tray sent from the diet kitchen. No food from other sources is permitted.

Cases receiving insulin are carefully watched by internes and nurses. They are instructed to report immediately any failure on the part of the patients to eat; gastrointestinal disturbances and symptoms of insulin shock. The symptoms of insulin shock are:

(1) Sudden and pronounced hunger with weakness, flushing of the skin and often slight tremor.

(2) Sweating, tremor, emotional and sensory disturbances.

(3) Convulsions and collapse.

Laboratory Tests

Urine specimens for the twenty-four hours are mixed and measured. Samples (about 200 mls.) are reserved. Specific gravity, sugar, acetone and diacetic acid tests are made. The sugar content of any specimen showing more than a trace of a reaction is determined quantitatively. These tests are made daily until the patient is discharged from the hospital. Blood sugar determinations from fingertip blood are made every other day, or twice weekly for all cases. Duplicate laboratory records are kept in the laboratory for reference.

A brief description of the laboratory tests used is appended.

Diet Prescription

Patients are placed on a non-ketogenic diet with a F. A.: G ratio of 1.5* selected from Table 1 which is closest in calorie value to basal energy requirement for twenty-four hours increased by 10 per cent. The tables by Harris and Benedict[1] are used for this purpose, though other standard prediction tables or charts may be employed. The diet may be selected quite accurately from the body weight in kilograms from Table 1, if directions are followed:

*$\frac{\text{Fatty acid in gms.}}{\text{Total glucose in gms.}} = \frac{\text{protein} \times 0.46 + \text{fat} \times 0.9}{\text{protein} \times 0.58 + \text{cbhy.} + \text{fat} \times 0.1} = 1.5$

TABLE 1. **Diet Prescription for Diabetes**

Body wts. (Kilos.)	F.A. : G. 1.5 P.	C.	F.	Tot. G.	Cals.	F.A. : G. 2 (F diets) P.	C.	F.	Tot. G.	Cals.
30-35	30	30	75	54.9	943.5	30	30	105	57.9	1222.5
35-40	35	35	75	64.1	1100.8	35	35	122.5	67.6	1426.3
40-45	40	40	100	73.2	1258	40	40	140	77.2	1630
45-50	45	45	112.5	82.4	1415.3	45	45	157.5	86.9	1833.8
50-55	50	50	125	91.5	1572.5	50	50	175	96.5	2037.5
55-60	55	55	137.5	100.7	1729.8	55	55	192.5	106.2	2241.3
60-65	60	60	150	109.8	1887	60	60	210	115.6	2445
65-70	65	65	162.5	119	2044.3	65	65	227.5	125.5	2648.8
70-70	70	70	175	128.1	2201.5	70	70	245	135.1	2852.5

For readjustment of the insulin dosage in changing from one F diet to another, allow 6 units for each step.

For older patients decrease by one or two steps and for younger patients increase by one or two steps according to age. For obese cases select a lower fat diet one step or more above that which would have been chosen for the patient if he had been standard weight; no further increase in diet is made until a more satisfactory body weight is attained. Emaciated patients should be started a step higher. Hyperthyroid diabetics require higher diets according to the severity of the symptoms.

The diets are discussed in a later section of this paper.

When the dietary regime is under way, the sugar excretion progressively diminishes. Either (1) the patients' urines become free from sugar in 1 to 7 days, or (2) the amount eliminated reaches an approximately constant figure.[2] Blood sugars fall correspondingly. In this period there is a rapid recovery of the power to utilize glucose.

NON-INSULIN CASES

Cases becoming sugar free or whose urines contain only a trace of sugar have their diets increased by the addition of fat so that the energy value of the diet is increased a third; the F. A.: G. ratio is thus increased to 2, which is still well within the non-ketogenic limit. Thus a case desugarized on a 50-50-125 (50 diet) will now receive a 50-50-175 (or 50 F diet). The additional glucose corresponding to 10 per cent of the added fat will ordinarily be utilized. As the patient will now be receiving sufficient calories for moderate occupational activity, he is allowed up in increasing amounts. He is then given instructions as to diet and urine tests and is discharged.

Return cases, patients who will cooperate well, or who must be treated outside, may be carried at once on the higher fat or final diet.

Sometimes, particularly for occupational reasons, it is desirable to increase the energy value of a patient's diet over that ordinarily selected.

TABLE 2. **Cases Not Requiring Insulin**

Case C. R., No. 64723, male, age 48, weight 70 kg.

Date	Vol. mls.	Sp. gr.	Acetone	Diacetic	Sugar %	Sugar gms.	Blood Sugar %	Diet	Calories
7-22	1000	1.035	0	0	3.88	38.8		60	1887
23	1000	1.029	0	0	2.17	21.7			
24	850	1.021	0	0	0.9	7.65	0.200		
25	1650	1.012	0	0	0.5	8.3			
26	1560	1.016	0	0	0.36	5.58	0.192		
27	2800	1.002	0	0	0.08	2.24		60F	2445
28	1700	1.006	0	0	s.p.t.		0.181		
29	1400	1.010	s.p.t.	0	0.00	0.00			
30	1300	1.015	trace	0	0.00	0.00			
31	1800	1.015	0	0	0.00	0.00	0.141		

The patient was discharged on August 4, 1924; his blood sugar was 0.120.

Case H. Y., No. 64679, male, age 20, weight 50 kg.

Date	Vol. mls.	Sp gr.	Acetone	Diacetic	Sugar %	Sugar gms.	Blood Sugar %	Diet	Calories
7-19		1.044	trace	0	5.55				
20	625	1.038	0	0	1.3	8.1	0.250	50	1572
21	700	1.027	s.p.t	0	0.77	5.35			
22	775	1.024	s.p.t.	0	0.2	1.55	0.137		
23	1000	1.020	trace	0	0.00	0.00			
24	1450	1.017	trace	0	0.00	0.00	0.100	50F	2038

The diet was raised on July 30th to 55F, 2241 calories, and on August 3rd to 60F, 2445 calories. He was discharged on August 6th with a blood sugar of 0.121.

The diet may be raised step by step (i. e., from a 50 F to a 55 F). If the tolerance is exceeded, insulin must be used. Such increases in diet must be controlled by blood sugar estimations.

The laboratory data on two typical cases controlled by dietary management alone are given in Table 2.

Insulin Cases

Patients showing a constant level of sugar excretion from about the fourth to the sixth day are considered insulin cases. Prompt desugarization seems important to keep the insulin dosage low.

Starting with a low insulin dosage and gradually increasing the units given may require insulin in amounts out of proportion to the severity of the diabetes. Subsequent reduction of the insulin given may be necessary or insulin reactions will occur.

Three factors are considered in setting the insulin dosage:

(1) With insulin control, the protein katabolism is reduced; a negative nitrogen balance becomes a positive nitrogen balance. As 58 per cent of the protein katabolized is potential glucose, this means that a part of the glucose coming from this source is no longer available when insulin control is established. The nitrogen loss, of course, is relatively greater in severe diabetes.

(2) While glucose utilization or tolerance improves most rapidly in the first few days of dietary management without insulin, a slow and much smaller increase may occur with continued insulin treatment.

(3) A certain proportion of the insulin given may be excreted into the urine and so lost. (Best and Scott.[3])

One unit of insulin is equivalent to 1.5 grams of glucose; this we have ascertained in making dietary and insulin readjustments in controlled cases; Wilder finds a similar value. It is evident from what has just been said that the glucose excreted divided by 1.5 would lead to an excessive dose of insulin and the development of shock symptoms. A study of a number of our cases indicates that the approximate daily dosage may be obtained by subtracting 1 to 10 units according to the severity of the disease, from the result arrived at when the constant level of glucose excretion is divided by 1.5.

These results are given in Tables 3 and 4. Insulin figures are for the total daily amount. Cases with a constant excretion of about 20 grams of sugar or less are given 15 units a day. The dosage of insulin is usually given in three equal amounts before meals; thus a patient whose insulin requirement is estimated to be 24 units a day, will receive 8 units before each meal.

If the proper insulin dosage has been chosen, the urine will be sugar free on the second or third day owing to a lag in the readjustment of the protein metabolism mentioned above. Immediate desugarization may necessitate a decrease in the dose unless the blood sugar remains high.

The patient is put on the higher fat diet when insulin therapy is started. He may be allowed up and about.

TABLE 3. **Insulin dosage when a constant level of glucose excretion obtains**

Glucose excreted per day, gms.	Insulin dosage per day, units
20 or less	15
20 to 30	15 to 21
30 to 40	21 to 24
40 or more	24 to 39

TABLE 4. **Insulin requirements of patients desugarized with little or no subsequent adjustment of dosage**

Case	Urine G per day	Urine G / 1.5	Insulin units per day	Difference
L.	70	47	38	9
Be.	66.5	44	36	8
Y.	65	44	34	10
Gi.	62	41	32	9
Bu.	62	41	34	7
P.	44	30	23	7
Gr.	40	27	24	3
D.	37	26	21	5
T.	32	22	21	1
Lin.	27.5	18	18	0
S.	24	16	15	1

When acidosis is evident or the diabetes very severe, patients may be given insulin from the time of admission. Units 5 to 10 t.i.d. may be employed. Subsequent insulin dosage is estimated in the manner outlined as if the case was not receiving insulin; this is added to the amount already being given.

Final adjustments of insulin dosage are made with the blood sugar findings as a guide. Further changes of diet and insulin, if made, are based on the total glucose values of the diets and the glucose equivalent for insulin of 1.5 grams.

When total nitrogen determinations on the twenty-four hour urines can be made, the insulin requirement can be closely calculated. Subtract 6, or 5 for small or emaciated patients, from the total nitrogen figure and multiply this difference by 3.65 (Lusk's co-efficient). If the result is subtracted from the glucose excreted and the difference divided by 1.5, the indicated insulin in units per day is obtained. The glucose value (10 per cent) of the extra fat when started with the insulin, should be added to the sugar excreted for the above calculation. The insulin dosage so calculated may be increased 3 or more units to cover loss by excretion into the urine.

Because of subsequent slowly increasing tolerance which may obtain under insulin treatment, border-line insulin cases discharged on units 5 t.i.d. (our minimum dosage for adults) are instructed to discontinue insulin after a few weeks and to stop it entirely if the urine remains sugar free. More severe cases are told to reduce the insulin dosage 3 to 6 units a day should symptoms of insulin shock occur, and to try the effect of such reduction anyway after four to six weeks of treatment.

Not a single instance of insulin shock has occurred in our service during the eight months that the present system of management has been used.

Summary of Non-Complicated Cases Managed

Approximately two-thirds of our cases are desugarized without insulin on maintenance diets. This is in close agreement with figures for cases treated in 1923-1924 by more drastic dietary restriction, combined with antiketogenic dietary management in the desugarization period. Incidently, we now pay little attention to acetone and diacetic acid unless present in considerable excess.

Seventy-one new non-complicated cases were controlled in the clinic between July 1, 1924 and January 31, 1925. These are summarized in Table 7.

Allergic Effects of Insulin

As a rule, patients have no local reactions to insulin administration. A few, however, show reddening, tenderness and persisting induration. The degree of reaction may vary for different individuals. No immunity is developed.

We have observed generalized edema[4] in a number of cases immediately following desugarization with insulin. Insulin edema has been reported in the German literature following the use of the undoubtedly cruder preparations first employed. We have found that the edema may be mobilized easily with potassium chloride and potassium bicarbonate, grams 0.65 to 1.3 each, t.i.d., with meals.

Complications

About 20 per cent of our cases present complications of serious character. It is beyond the scope of the present paper to say more than a few words regarding these. Such cases require individual management to a greater degree, and must be cared for in the hospital over longer periods of time.

TABLE 5. **Management of Insulin Cases**

Case D. L., No. 68138, male, age 40, weight 57 kg.

Date	Vol. mls.	Sp. gr.	Acetone	Diacetic	Sugar %	Sugar gms.	Blood sugar %	Diet	Cal.	Insulin units
1- 4	1700	1.030	s.p.t.	0	5.45	92.6		50	1573	
5	1990	1.022	s.p.t.	0	2.08	41.4				
6	2200	1.015	trace	0	1.27	27.9	0.262			
7	2100	1.016	trace	0	1.07	22.5				
8	2450	1.013	trace	0	0.85	20.8				
9	2950	1.012	s.p.t.	0	0.67	19.8	0.208			
10	1620	1.010	trace	0	0.43	7.0				0-5-5
11	1520	1.011	s.p.t.	0	0.00	0.0		50F	2037	5-5-5
12	2400	1.010	s.p.t.	0	0.00	0.0	0.143			5-5-5

The patient was discharged three days later. As the blood sugar was still a bit high (0.155), he was sent out on insulin 6-6-6 units. He reported a month later that he was doing well and at no time had his tests shown sugar in the urine.

TABLE 6. Management of Insulin Cases

Case H. Y., data on whom was given in Table 3 for an earlier admission and who abandoned dietary management after previous discharge

Date	Vol. mls.	Sp. gr.	Acetone	Diacetic	Sugar %	Sugar gms.	Blood sugar %	Diet	Cal.	Insulin units
12- 4		1.030	s.p.t.	0	7.45			50	1572	
5	2000	1.040	s.p.t.	0	6.40	128	0.298			
6	1680	1.036	trace	0	6.15	103				
7	1300	1.034	trace	0	4.80	62				
8	1440	1.033	s.p.t.	0	4.80	69	0.268			
9	2200	1.025	s.p.t.	0	2.90	64				
10	2100	1.015	s.p.t.	0	1.19	25				0 12 12
11	1800	1.012	s.p.t.	0	0.24	4.3	0.151	50F	2037	12 11 11
12	1900	1.010	s.p.t.	0	0.24	4.5	0.115			11 11 11
13	1430*	1.012	s.p.t.	0	0.18	2.5				11 11 11
14	2300	1.011	s.p.t.	0	0.20	4.6				12 11 11
15	2090	1.013	s.p.t.	0	0.0	0				12 11 11
16					0.0	0	0.110			12 11

The insulin dosage was estimated as follows: The average excretion of glucose for 12/7-8-9 was 65 gms. This divided by 1.5 is equivalent to 43 units from which is subtracted 8 units (Table 4) making 35 units, or a little less than 12 units three times daily.

The patient was started on this estimated dosage of 12 units three times at noon on 12/10 and the diet increased by changing to the 50F at the same time. As the urine was sugar free the afternoon of the day following, the insulin was cut to 11 units three times. Since he continued to show small amounts of sugar in the urine obtained after breakfast, a final adjustment of 12-11-11 units controlled the glycosuria.

The insulin dosage in this case was checked by the nitrogen excretion for 12/9 which was 12.3 gms. Subtracting 6 grams from 12.3 grams leaves 6.3 gms., which was multiplied by the glucose equivalent 3.65 making 23 gms. The difference between 23 gms. and the glucose excreted for this day, 64 grams to which is added 5 gms. for the increased glucose value of the diet due to added fat, divided by 1.5 gives an indicated dosage of 30.7 units, or 11-10-10 without allowing for loss by excretion.

The patient reported after 3 months that he had experienced no untoward effects from the insulin; he has reduced his insulin dosage, and his urine has remained constantly free from sugar.

*Beginning insulin edema, checked by potassium therapy.

TABLE 7. Summary of Non-complicated Cases

Insulin, units per day	Number of cases	Per cent of total
None	46	64.8
15	8	11.2
18	7	9.8
21	3	4.2
24	2	2.8
27	1	1.4
30 or more	4	5.6

Even severe diabetics may be carried through infectious complications and major surgical operations with insulin management. We now give glucose and insulin to diabetics two hours before all surgical procedures, as routine. Former tolerance is largely recovered following acute infections and is usually much improved as the result of operative relief.

Chronic complications such as hyperthyroidism, nephritis, pernicious anemia, tuberculosis, lues, gastrointestinal conditions, and pregnancy have been managed in the clinic. A temporary course of insulin therapy may be indicated during hospitalization, the carbohydrate tolerance increasing with improvement of the non-diabetic condition.

Non-Diabetic Glycosurias

The most commonly encountered non-diabetic glycosuria in our service is the so-called renal diabetic. A mild glucosuria, increased by carbohydrate ingestion, incompletely controlled by dietary management, and a consistently low normal or hypoglycemic blood sugar two and a half hours or more after a light carbohydrate meal, serve for a differential diagnosis. Insulin should not be given these cases. Sugar ingestion, even, may so stimulate insulin discharge and glycogenesis as to induce hypoglycemic symptoms.[5]

Glucosuria in pregnant women is found occasionally.

We have had but one alkaptonuric[6] over a period of five years. Such a case might be mistaken for a diabetic.

Diabetic Home Diets

The accompanying diabetic diets are the outgrowth of a desire for a more elastic and at the

same time reasonably accurate diabetic diet system for use of patients after leaving the hospital. The same sliding scale plan of diets that is presented in the bulletin[7] is used here. The figure at the head of each column represents the grams of protein and the grams of carbohydrate which the patient will obtain by using his choice of foods in the amounts given in that column. The grams of fat obtained is equal to 3.5 times the figure at the head of the column. The fatty acid total glucose ratio obtained by this proportion is 2 to 1. Thus if the 40 column is checked the patient's diet will contain

Protein	40	Fat	140
Carbohydrate	40	Calories	1630

In this diet sheet definite menus are not given, but groups of foods. The patient is instructed to choose one from each group. The amount of each food to be used is indicated to him by the column of figures checked. The list of foods

DIABETICS' DIETS (F DIETS)

Diet number	40	45	50	55	60	65	70	75
Breakfast Only—Choice of								
Cornflakes or Puffed Wheat	10	11	13	14	16	17	18	19
Oatmeal or Cream of Wheat	12	13	15	16	18	19	20	21
Cornflakes or Puffed Wheat	7	7	8	9	9	10	10	11
and Orange	32	36	40	44	48	52	56	60
Oatmeal or Cream of Wheat	8	9	10	11	12	13	14	15
and Orange	24	27	30	33	36	39	42	45
Breakfast, Dinner and Supper								
Cream 20 per cent	104	117	130	143	156	169	182	195
Breakfast, Dinner and Supper								
Butter, Lard, or Mayonaisse	12	13	15	16	18	19	20	21
Breakfast, Dinner and Supper—Choice of								
White chicken, lean beef or whitefish	40	45	50	55	60	65	70	75
and butter, lard or mayonaisse	16	18	20	22	24	26	28	30
Eggs	80	90	100	110	120	130	140	150
and Butter	8	9	10	11	12	13	14	15
Eggs	40	45	50	55	60	65	70	75
and Bacon	20	22	25	27	30	32	35	37
Corned beef	60	67	75	82	90	97	105	112
Pork chop or Ham	56	63	70	77	84	91	98	105
Lamb chop	60	67	75	82	90	97	105	112
Sirloin steak	48	54	60	66	72	78	84	90
and Beef fat	8	9	10	11	12	13	14	15
Cheese—American pale	32	36	40	44	48	52	56	60
and Butter	4	4	5	5	6	6	7	7
Dinner and Supper Only—Choice of "5 Per Cent" Vegetables								
Lettuce, cucumbers, spinach, asparagus, rhubarb, endive, sauerkraut, beet greens, Swiss chard, celery, mushrooms, tomatoes, Brussels sprouts, cauliflower, cabbage, radishes, canned string beans, egg plant, grape-fruit	100	112	125	137	150	162	175	187
Dinner and Supper Only—Choice of "10 Per Cent" Vegetables								
String beans, pumpkins, turnips, kohl rabi, squash, oysters, beets, carrots, onions, green peas, watermelon, gooseberries, strawberries, lemons, cranberries, peaches, blackberries, oranges	48	54	60	66	72	78	84	90

The weight in grams of each food used must equal the number in column checked. One or more vegetables in each group may be used; the added weights must equal the number in column checked. All or part of the choice from the 10 per cent group may be omitted and twice the weight omitted may be used from the 5 per cent group.

given is not very extensive but it includes most of the ordinary foods easily obtained in local markets. It is hoped that by allowing the patient to make his own selection he will be able to adjust his diet to the menu planned for the rest of the family. This will mean convenience for the cook and economy for the family shopper. It will also make the patient's diet less conspicuous and may have a good psychological effect. He will not feel that his diet is so different or sets him apart from the rest of the family.

In planning this diet sheet an effort was made to make it self-explanatory. However, to avoid possible misunderstanding, it is explained in detail to the patient. He is given the diet sheet while in this hospital and has ample time to make out menus for himself and have them checked. By the time he leaves the hospital he should be entirely familiar with its manipulation. For example: A man, on a diet of protein 55, carbohydrate 55, fat 192.5, calories 2241, is given a diet sheet with column 55 checked. His selection for a day's menu might be:

Breakfast

Cornflakes	14
Cream	143
Butter	16
Egg	55
Bacon	27

Bran wafers (no food value)
Coffee

Dinner

Lamb chop	82
Cream	143
Butter	16
Peas	66
Tomatoes	137

Bran wafers (no food value)
Tea or coffee

Supper

Oysters	66
Cream	143
Cheese	44
Butter	21
String beans	100
Celery stalks	37

Bran wafers (no food value)

With the diet sheet the patient is given a sheet containing four recipes. One is for mayonaisse which is high in fat and may be used as a substitute for butter or lard. A second is for bran wafers using washed bran and agar-agar. Wafers made by following this recipe have no food value and may be used in any amount desired by the patient. Recipes for almond cakes made with Lister flour and for plain Lister cakes are also given. One of these cakes of either variety may be substituted in a menu for 50 grams of egg.

While in the hospital each patient is taken to the diet kitchen and these recipes demonstrated to him. He is also shown the scales for weighing his food and taught how to use them.

DIABETIC RECIPES

Mayonaisse

Salad Oils, Wesson, Mazola, Olive

Salad oil	208 grams
Egg	50 grams
Lemon juice	20 grams
Vinegar	20 mls.

Salt, Paprika, Mustard

Total weight	245 grams
Total protein	6.7 grams
Fat	213.25 grams
Cbhy.	11.96 grams

Beat egg, lemon juice and vinegar with Dover beater until thoroughly mixed. Add oil slowly, beating constantly until all is added, then add flavoring. Keep in a cool place.

Bran Wafers

Use Kellogg or Pillsbury Sterilized Bran
Bran 60 grams
Salt ¼ teaspoonful
Agar-agar—powdered 6 grams
Cold water 100 mls. (½ glass)

Soak the bran in a solution of 1 per cent hydrochloric acid enough to cover it. When solution becomes milky, tie the bran in cheesecloth and wash under cold water tap until water is clear. Test some of the wash water by adding 1 drop of iodine. If it turns blue the bran has not been washed enough. Continue washing until the wash water turns brown when iodine is added. Then, bring agar-agar and water to the boiling point. Add to washed bran the salt and agar-agar solution (hot). Mold into two cakes. Place in pan on oiled paper and let stand half an hour; then, when firm and cool, bake in moderate oven thirty to forty minutes. These wafers have no food value and may be used as desired.

Almond Cakes

Eggs	100 grams
Whites	50 grams
Yolks	50 grams
Almonds	20 grams
Lister flour	10 grams
Lemon juice	5 grams

Saccharin if desired

Separate whites and yolks. Beat yolks until lemon colored and whites stiff and dry. Fold lister flour and almonds into beaten egg whites.

Dissolve saccharin in lemon juice and add to yolks. Fold whites into yolks. Make four cakes, bake in moderate oven until light brown.

One of these may be substituted for 50 grams of egg.

Lister Muffins

Egg white.....75 grams
Egg yolk.....75 grams
Lister flour.....55.5 grams
Saccharin ¼ grain

Beat egg white stiff and yolk lightly. Add yolk and flour alternately to the whites folding them in gently. Bake in moderate oven. This recipe makes 8 cakes.

One of these muffins may be substituted for 50 grams of egg.

LABORATORY TESTS*

Urine Sugar, Qualitative

Eight drops of urine are mixed with about 5 mls. of Benedict's solution in a large test tube and heated 5 minutes in a boiling water bath. Results are expressed as: slightest possible trace, s.p.t.; trace, tr.; and 1 to 4 plus.

Acetone, Qualitative (Rothera's Test)

To about a half gram of ammonium sulfate in a small test tube, add 1 drop of 5 per cent sodium nitroprusside solution and 2 to 3 mls. of urine. Mix thoroughly and superimpose on this about 1 ml. of strong ammonia solution. The permanganate colored ring reaction is expressed as for qualitative sugar above.

*Credit for the routine laboratory procedure is due largely to Dr. J. D. Boyd.

Diacetic Acid

Place 2 to 3 mls. of urine in a small test tube and superimpose on this a solution of 5 per cent ferric chloride in 50 per cent alcohol. Read as above.

Urine Sugar, Quantitative

Only urines containing more than a trace of sugar are analyzed. Measure 0.01 to 0.05 ml. of urine with a serological pipette into a Folin-Wu sugar tube and 0.05 ml. of a standard 1 per cent glucose solution into a second sugar tube; wipe the end of the pipette after filling and discharge against the side of the sugar tube. To each tube add 4 mls. of Folin-Wu alkaline copper tartrate solution, mix, and heat 6 minutes in the boiling water bath. Cool, add 4 mls. of Folin-Wu sugar reagent to each tube, dilute to the 25 mls. mark after standing a few minutes, mix by stoppering the tubes and inverting, and read in a Dubosque type colorimeter. Using 0.05 ml. of urine, and with the standard set at 10 mms., the per cent of sugar is 10 divided by the reading for the urine. We have repeatedly obtained exact checks by this method on diabetic urines with determinations by other procedures in which the non-sugar reducing substances of the urine were removed.

Blood Sugar, Finger Blood (Boyd and Gibson)

Draw 0.2 ml. of blood from a finger tip puncture (we use a cataract knife) in a serological pipette, grad-

Blood sugar values for colorimetric readings; finger-blood method

Mms.	.0	.1	.2	.3	.4	.5	.6	.7	.8	.9
3	0.336	0.324	0.311	0.300	0.290	0.280	0.271	0.262	0.254	0.249
4	0.243	0.239	0.234	0.228	0.223	0.213	0.208	0.203	0.198	0.194
5	0.190	0.186	0.182	0.179	0.175	0.172	0.168	0.165	0.162	0.158
6	0.155	0.151	0.149	0.145	0.143	0.140	0.138	0.137	0.136	0.134
7	0.133	0.132	0.130	0.129	0.128	0.127	0.126	0.125	0.123	0.122
8	0.122	0.121	0.120	0.119	0.118	0.117	0.115	0.114	0.112	0.111
9	0.110	0.109	0.108	0.107	0.106	0.105	0.104	0.103	0.102	0.101
10	0.100	0.098	0.096	0.095	0.094	0.093	0.092	0.090	0.088	0.087
11	0.086	0.085	0.084	0.083	0.082	0.081	0.080	0.079	0.079	0.078
12	0.077	0.076	0.076	0.075	0.074	0.073	0.072	0.071	0.070	0.070
13	0.069	0.068	0.068	0.067	0.067	0.066	0.065	0.065	0.064	0.063
14	0.063	0.062	0.062	0.061	0.061	0.060	0.060	0.059	0.059	0.058
15	0.058	0.057	0.057	0.056	0.056	0.055	0.055	0.054	0.054	0.053
16	0.053	0.053	0.052	0.052	0.051	0.051	0.051	0.050	0.050	0.049
17	0.049	0.049	0.048	0.048	0.048	0.047	0.047	0.046	0.046	0.045
18	0.045	0.045	0.045	0.044	0.044	0.044	0.044	0.043	0.043	0.043
19	0.043	0.043	0.042	0.042	0.042	0.041	0.041	0.041	0.040	0.040
20	0.040	0.040	0.040	0.039	0.039	0.039	0.039	0.038	0.038	0.038
21	0.038	0.038	0.038	0.038	0.037	0.037	0.037	0.037	0.036	0.036
22	0.035	0.035	0.035	0.035	0.034	0.034	0.034	0.034	0.034	0.033
23	0.033	0.033	0.033	0.033	0.033	0.032	0.032	0.032	0.032	0.031
24	0.031	0.031	0.030	0.030	0.029	0.029	0.029	0.029	0.028	0.028
25	0.028	0.028	0.028	0.028	0.027	0.027	0.027	0.026	0.026	0.026
26	0.025	0.025	0.025	0.024	0.024	0.024	0.024	0.024	0.023	0.023

The table is calculated for 0.2 mls. of blood; make proportional correction for lesser amounts. When blood sugars of over 0.3 per cent are indicated, make the final dilution to 25 mls. and multiply the glucose values obtained from the table by 2.5.

The table was prepared from analyses made by Dr. J. C. Shrader.

uated to the tip, as in drawing blood for the Sahli hemoglobin determination. Discharge the blood into a centrifuge tube containing 4.3 mls. of 1.25 per cent sodium tungstate solution and 0.5 ml. of 2 per cent (volume) of sulfuric acid. Centrifuge after a few minutes; there will be sufficient supernatant fluid for duplicate determinations. Take 2 mls. of the supernatant fluid in a Folin-Wu sugar tube graduated at 10 and 25 mls. and 2 mls. of 0.01 per cent glucose solution in a second tube, add 2 mls. of the alkaline copper tartrate solution to each tube, and heat for exactly 6 minutes in the boiling water bath. Cool and add 2 mls. of Folin-Wu sugar reagent to each tube. After a few minutes dilute the blood sugar tube to the 10 mls. mark and the standard sugar tube to the 25 mls. mark, mix, and read in the colorimeter. The per cent of sugar is 1 divided by the reading of the unknown in mms. when the standard is set at 10 mms.; for mgms. per cent, multiply by 1000. For convenience and for accurate results with widely variant color intensities, we use a table with values corresponding to the readings for the blood tube. This was prepared from a curve obtained with completely glycolyzed defibrinated sterile blood and known amounts of glucose.

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EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS*

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This day of efficiency and specialism has led many modern physicians to believe that only an experienced specialist can make an early diagnosis of active pulmonary tuberculosis. This is true in some cases, but an average man having confidence in himself, taking time to ascertain and analyze the clinical history, and completing a physical examination according to his ability, can make an accurate diagnosis in 80 per cent of the cases.

We must remember that it is the early diagnosis of active or suspected tuberculosis which yields best to treatment. Our patients must be educated to this fact just as they now realize that the proper procedure is to give antitoxin for a suspected case of diphtheria without awaiting laboratory reports. Although the mortality from all forms of tuberculosis has declined 50 per cent in the last twenty years, approximately 100,000 people in the United States died of this disease in 1921. When it is remembered that about one out of every ten deaths is caused by tuberculosis, it will be seen that in at least 10 per cent of persons a diagnosis of tuberculosis must at some time be made, and as a number of patients recover from tuberculosis of the lungs, the incidence of the disease is even greater than mortality statistics show. These figures should impress us with the fact that tuberculosis is one of the most common diseases from which the human race suffers.

General Causes for Failure

The reasons for failure, to make a diagnosis more frequently, are many and varied, probably the chief one is a failure to realize the almost universal extent of this infection and the frequency of the disease. Another reason is the fact that consumption is not looked for more often, particularly by practitioners in the country and small towns, where it is supposed to be less prevalent than in the cities. The numerous symptoms, the many and complex physical signs without uniform terminology and the varieties of onset all cause difficulty in arriving at a correct interpretation. Not seldom, in a desire for certainty, a physician will depend more upon one report of a sputum examination than upon his own judgment. Lack of time for history taking and examination, due to press of other work, is a frequent cause for faulty diagnosis rather than lack of knowledge. It is not sufficiently realized that the examination can be quickly done without being carelessly done. Imperfect stethoscopes and failure to examine the entire bare chest cause many to miss definite findings. Finally, one of the chief obstacles to making a diagnosis of tuberculosis is the desire of the physician not to tell the patient that he is tuberculous, as this is so often considered a stigma or something degrading. This is particularly true if the physician has been the attendant of a family for a long time. In his endeavor to avoid this unpleasant task, tuberculosis is the last thing thought of, instead of the first and probable diagnosis. In many cases neglect to make a diagnosis is almost malpractice, and patients frequently lose their chances for recovery by the carelessness of the physician whom they consult.

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It is not, however, always easy to make a diagnosis of pulmonary tuberculosis, for in many cases after a carefully taken history, a painstaking examination including the use of the x-ray and observation for several days, the decision must often be made probable rather than positive. The main cause of difficulty in diagnosis is the fact that the majority of persons harbor a tuberculous focus or foci somewhere in their bodies, but this may never have been found active, as judged by clinical standards, and its presence never considered until it was accidentally discovered. We must make a distinction clearly in our minds between infection with tuberculosis and disease caused by the activity of such a tuberculous infection. Another difficulty in diagnosis arises from a similar pathological condition, but one which follows a different clinical course. A person who has once had clinically recognizable pulmonary tuberculosis will always have changes in his lungs, to a greater or lesser degree, which may give the same signs as an active lesion in another patient. If such a patient, as exemplified in our arrested cases, develops a simple laryngitis or other respiratory infection, it will be a very fine point in diagnosis to decide whether the symptoms are due to the old tuberculosis or to more recent respiratory infection. It is often necessary to make a diagnosis founded on symptoms and the course rather than on signs. Early tuberculosis of the lungs must often be diagnosed on probabilities rather than certainties, as the symptoms are frequently slight or indefinite and the signs in the lungs are often differentiated with difficulty from what may be considered normal.

There is one finding upon which to base a positive diagnosis, and that is tubercle bacilli in the sputum. Even this may be misinterpreted as it is possible for a lesion to discharge bacilli into the respiratory tract, become arrested and give no symptoms from a clinical standpoint. If we wait until bacilli are found, in many cases, we unwisely delay the diagnosis to such a degree that valuable time is lost for treatment, and often the patient will lose his chances of arrest by such delay. Thus in the majority of cases, we must give our opinion for or against tuberculosis without the crucial test of the presence of bacilli.

VALUE OF HISTORY

Frequently the history alone is sufficient to suggest the diagnosis, and for this reason a carefully taken history is absolutely necessary. The symptoms are so numerous and so indefinite that we need a mental rack or special history blanks for this purpose. There are twenty-five or thirty different symptoms which may accompany early tuberculosis: and, if we think of each symptom as an individual entity, there is no end of confusion. Pottenger has found after carefully studying these various symptoms, that they all belong to three groups, according to their etiology: "1, those due to toxemia; 2, those due to reflex action, and 3, those due to the tuberculous process *per se:*

Group 1. Toxemia—Malaise; Lack of Endurance; Loss of Strength; Nervous Instability; Lack of Appetite; Digestive Disturbances; Loss of Weight; Rapid Pulse; Night Sweats; Temperature; Anemia.

Group 2. Reflex Origin—Hoarseness; Tickling in Larynx; Cough; Digestive Disturbance; Loss of Weight; Circulatory Disturbances; Chest and Shoulder Pains; Flushing of Face; Apparent Anemia.

Group 3.—Tuberculous Involvement Per Se.—Frequent and Protracted Colds; Spitting of Blood; Pleurisy; Sputum; Temperature."

I quote this classification to emphasize the necessity of a mental rack or special history blanks for the general practitioner to get the complete story of his patient in a short time. It is easy to get into ruts in history taking, and have a few stock questions for the patient. In this way, perhaps, half a dozen questions are asked the patient: his answers sidetrack our thoughts or displace any suspicion we have and we overlook, e. g., chest pain or an old pleurisy.

VALUE OF PHYSICAL EXAMINATION

In the early stages of tuberculosis the changes are chiefly in the upper parts of the lungs. The interpretation of these changes is vastly more important than the changes themselves. Any changes located at the apex just below the clavicle, in upper part of lower lobe posteriorly and around the hilus region either front or back, are suggestive.

Probably the safest diagnostic sign is persistence of rales which are localized. We may, at least diagnose suspected tuberculosis from this condition alone. Bushnell formulated the rule for army recruits that the presence of moderately coarse rales down to the third rib in front means tuberculosis.

These facts are well known, but mistakes are often made through misinterpretation of physical signs in the normal chest. It is inexcusable to make a definite diagnosis without clear and sufficient grounds. Reasonable delay is not of serious consequence to the patient. It does no harm to make a diagnosis of suspected tuberculosis.

Palpation of vocal fremitus is of little diagnostic value in any stage of phthisis, especially in early diagnosis. It must be remembered, how-

ever, that fremitus is normally increased over the right lung.

Percussion is of doubtful value in diagnosis of early phthisis, although it must always be emphasized that the note over the right apex is normally higher than over the left.

Auscultation is the important procedure in physical examination, but this must be done accurately. There are several reasons for incorrect conclusions. First, unfortunately there is no common terminology in use for the description of breath sounds. What one examiner regards as bronchial breathing is to another broncho-vesicular. For purposes of this paper, bronchial breathing is defined as that type of respiratory sound in which inspiration is roughened and expiration prolonged and equal or higher in pitch than inspiration. Bronchovesicular breathing is defined as the type in which the prolonged expiration is lower in pitch than inspiration. These terms may be modified as necessary by qualifying adjectives as distant, diminished, cavernous, amphoric, etc. There are two main sources of mistakes in interpreting breath sounds: (1) the normally present bronchovesicular breathing on the right side down to the second rib and third dorsal spine: (2) noisy respiration. It is necessary to have the patient breathe properly to intelligently interpret auscultatory signs in the lungs. The quickest way to accomplish this is to demonstrate to the patient how you wish him to breathe.

The second source of difficulty in clearly understanding auscultation is the proper understanding of rales. Here again, no terms are in common use for the description of rales. What one examiner calls moist are dry rales to another examiner. The classification of Seiffert and Muller is excellent and one that does not permit variation in description. This scheme classifies rales as moist and dry. Moist rales are discontinuous or interrupted sounds, a series of clicks. A dry rale is a continuous sound. It is produced by stenosis, with partial obstruction by mucous, or turgescence of bronchial mucosa. Under dry rales fall squeaking, piping, sibilant and sonorous rales. Moist rales are subdivided into crepitant, fine, medium and large; dry rales into fine, medium and large. The terms consonating and metallic are used as required. This classification is sufficient and if more descriptive terms are introduced, confusion results.

No lung examination is complete without auscultation after cough. The cough must occur at the end of expiration. These provoked rales are heard at the end of the cough as the lung recoils, but also at the beginning of the following inspiration.

Of adventitious sounds which may simulate rales mention is made of muscle sounds, scapular grating, noises produced by swallowing or crepitations due to insecure application of the stethoscope or contact with hair. None of these should cause confusion with true rales. The sounds which most notably simulate rales are those of cartilaginous origin and marginal sounds. Joint sounds have one common characteristic, namely that they rarely occur at the end of cough, but later in the inspiratory phase. They have a more marked snapping, clicking quality than rales, are conducted along bony structures, they may be followed up to their origin and they may be made to disappear by securing partial immobility of the structures in which they originate. Most writers pay little attention to clicking noises at the bases of the lungs ascribing these usually to atelectasis. These sounds markedly simulate moist rales, but where found, it is necessary to prove the patient tuberculous from upper lobe findings. The differentiation of rales and marginal sounds is readily made. Mark the lung border after the patient has exhaled and coughed before he inhales. Marginal sounds are not heard above this line on subsequent cough and inspiration. Also marginal sounds are not heard at end of cough, but later with the inspiration following.

Mention should be made of the chronic non-tuberculous infections occurring at the base of one or both lungs usually posteriorly. The patient may complain of cough, expectoration and sometimes blood streaked sputum. They do not have much impairment of general health. Examination reveals signs of more or less extensive bronchitis. In the absence of signs of involvement of the upper lobes, and without sputum containing tubercle bacilli, a diagnosis of tuberculosis in these cases cannot be made.

It is not only of importance to properly interpret chest findings, but they should be recorded as heard or they are forgotten at subsequent examinations. The persistence of the findings is determined by these written records or charts.

Tuberculin, Sputum and X-ray Examination

Tuberculin reactions are valuable as revealing the presence of an infection, but do not differentiate latent from active tuberculosis. When the diagnosis is doubtful, a tuberculin test should be made as it gives valuable information if found negative. Ten to fifteen per cent of all patients show no reaction to tuberculin.

Examination of sputum should be emphasized, not one examination, but repeated specimens.

Often one is rewarded by a positive sputum in a young patient with a history of repeated colds and very meagre lung findings. Old people with chronic bronchitis and failing general health demand several sputum examinations. The sputum should be obtained from the lungs of the patient, when he arises in the morning by coughing and not by hawking. It is a waste of time to examine saliva and secretion from the naso pharynx. It is necessary to instruct the patient how to obtain proper specimen of sputum for examination.

Diagnosis from the x-ray is often of the greatest help, but it is a fact that the plates are only too frequently over-read. Pathological conditions are often found in plates which show no abnormalities. In the same way as physical signs of active and arrested disease may be exactly the same, so the shadows on the x-ray plate will often be exactly similar for arrested and active cases. The tendency to rely on the x-ray plate for diagnosis as an easy and rapid way of solving all problems is distinctly wrong. While a most valuable adjunct to other examinations, it is only when used in conjunction with the history, symptoms and physical signs that it finds its true place.

CONCLUSIONS

The diagnosis of early pulmonary tuberculosis can be summed up as being a complex problem. We can gain greater efficiency by organizing our facts into a workable plan. The need of such a system was the motive of this paper. The diagnosis of phthisis is not made from any one sign or symptom or set of signs or symptoms, but upon a careful consideration of all the changes present. These changes must be interpreted as to their relationship one to another, and as to their effect on the organism as a whole. I hope that the data in this paper will help you as much as it has helped me to formulate a more definite standard upon which to base conclusions when tuberculosis is suspected.

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Discussion

Dr. Herbert V. Scarborough, Oakdale—This subject is a peculiar one, in that while it is old and hackneyed, and it would take a great deal better man than myself to galvanize it into an interesting subject such as many of the papers here presented, yet it is necessary that we occasionally review it. At Oakdale we have one building, the infirmary, holding usually from 160 to 175 people, and which are advanced cases. Tuberculosis is admittedly a curable disease, but out of this number not 10 per cent will get even a symptomatic recovery, and 6 to 7 per cent of these people die every month. Therefore this subject needs to be discussed, and I am sorry to say that we can not come before you and tell you of some unusual or useful or quick method of diagnosis. All we can do is to say less about certain features and more about others, and if we can be of any help we hope to do so. By common consent we should, I think, say that an early case of tuberculosis means one in which the activity of the tubercle bacillus has not progressed beyond involving a small percentage of the lung tissue or the development of a small amount of activity. The word "incipient" is misleading. The essayist chronicles the failures, which is always a good plan. He states that the failure to realize the frequency of the incidence of this disease is usual, and a failure to watch for it is still more usual. Those statements are correct, and it is worth while thinking of them. He speaks of the complexity of the symptomatology. That is axiomatic. He speaks about the failure to take time to go into the matter with sufficient care. I do not believe that we should recognize this matter of time and care as ever being a satisfactory explanation for missing a case. There isn't a thing I know of that would pay a better price or which the patient should feel more appreciative of than a correct diagnosis even if it takes much more time. I believe these people are willing to pay for it, and I know that if they could realize the difference that a mistake would make to them with the loss of future chances of recovery they would be glad to pay double the price. A hasty uncompleted examination verges on carelessness, and we are all a little too hasty, sometimes. I think the real reason, stated in a nice way, would be that we fail to realize the importance of the lack of a diagnosis at a time when it should be made. We realize the general importance of early diagnosis but possibly not in the particular case. Whenever a pulmonary case comes into our hands we should say to ourselves, "Am I going to miss tuberculosis here, and let it go until it flowers out into a case I never can help?" The essayist referred to pathognomonic signs. I want to speak of two or three findings on which we should not place so much dependence. For instance, the sputum. Many of the cases we see can never have tubercle bacilli in the sputum that we can detect, and we have to make the diagnosis without that finding. Many lives are lost because of waiting for positive sputum. Recently I made a little investigation among our

patients to see if I could tell what it was that caused the practitioner finally to make the diagnosis, and, not to my surprise exactly, but to my chagrin, I found that too many diagnosticians wait until the sputum is positive. In many cases in which we are compelled to make the diagnosis of tuberculosis we do not find rales; we must make the diagnosis on other signs, and that is the difficult part of it. In some cases we see few or no clinical signs to back up our other findings. If I have anything to add that might serve to summarize a discussion on the lack of early diagnosis it is to recall that pulmonary tuberculosis is much more prevalent than most of us realize; that we must be much more careful to lay stress on the importance of a definite conclusion in the presence of the cardinal signs without waiting for new or more easy signs or methods for a quick and sure diagnosis, and lastly, that in this disease the diagnostic picture is very frequently contradictory—almost any sign or symptom is at times absent and a diagnosis must not be delayed therefor.

Dr. V. L. Treynor, Council Bluffs—The literature has been filled with admonitions as to the early diagnosis of pulmonary tuberculosis, and I think the profession is very much awake to the importance of early diagnosis of this disease, which is as it should be and which I heartily commend. But I sometimes think we have over-played our hand a little bit, because I have personally seen a variety of conditions diagnosed as tuberculosis. For instance, empyema, post-influenzal pulmonary conditions, malignancy of the lung, syphilis of the lung, cardiac decompensation, all diagnosed as pulmonary tuberculosis. It seems strange how any physician could mistake a decompensated heart for pulmonary tuberculosis. Yet I recall one case that was sent to Oakdale under my protest as pulmonary tuberculosis. I wrote to Dr. Scarborough who confirmed my opinion and he promptly sent the patient home. I recall another case in which I utterly fell down in diagnosis. I saw a young man who, to my mind, had every evidence of beginning pulmonary tuberculosis. His symptoms developed with exceeding rapidity, and he died shortly afterwards with a sudden effusion into the pericardium. However, before his death we had begun to suspect that he had, not a tubercular condition, but a sarcoma, and the post-mortem findings confirmed the opinion as to sarcoma. If I had the sense in the beginning I probably would have thought of the possibility of the condition being a sarcomatous process because this boy had had a leg amputated for sarcoma some six years previous. I saw a case in Arizona which had been sent clear from Toronto, Canada, for a supposedly pulmonary tuberculosis, that proved to be a mitral regurgitant lesion of the heart with decompensation. Having seen so many of these cases, I feel that there is a tendency on the part of the profession to confuse many other conditions with tuberculosis.

Dr. John H. Peck, Des Moines—It is a deplorable fact that, despite all the educational propaganda we have been putting out, many cases of tuberculosis are going unrecognized and untreated. I believe we have made this diagnostic problem too difficult. If you try to learn it from the text-books you are simply overwhelmed by all the fine diagnostic procedures and give it up. I would like to leave with you just a few little stunts whereby you all can recognize early pulmonary tuberculosis and do it easily. I have given this a good many times. Keeping in mind the five essential data, this plan makes the diagnosis comparatively simple and easy: 1. Every patient who has pleurisy with effusion is tuberculous. There is no doubt about that, and every patient who has a wet pleurisy has tuberculosis of the pleura and will, if the case goes unrecognized and untreated, usually develop pulmonary tuberculosis. 2. An individual presenting the symptoms of hemoptysis has pulmonary tuberculosis, and if you will consider that patient tuberculous until proven otherwise you will make an earlier diagnosis and get the patient under proper treatment earlier. 3. The presence of tubercle bacilli in the sputum means that the patient has pulmonary tuberculosis which requires treatment. Of course there are a few tubercle bacilli carriers, but put them under treatment anyhow. 4. The presence of localized moist rales, so well brought out by the essayist. And these rales are best heard after coughing, either at the apex or just below the clavicle. 5. The x-ray film which shows parenchymatous mottling in the same region where moist rales are heard means tuberculosis and nothing else. In those cases in which you have no physical signs you cannot interpret x-ray findings alone as indicating tuberculosis. But if both moist rales and the characteristic mottling are present in the same area, the diagnosis of tuberculosis must be made.

SOME POINTS IN THE PREPARATION OF MATERIAL FOR LABORATORY EXAMINATION*

Mortimer Herzberg, M.D., Sioux City

In view of the difficulty which the laboratory man has at times in getting material presented in such form as to enable him to make a satisfactory examination and render a reliable opinion, I thought it might be of interest to draw your attention, in a general way, to a few facts from the laboratory man's point of view, with reference to the preparation of such material.

The great diversity of specimens submitted makes a detailed statement almost impossible. I am sure, however, that my personal experiences, extending over more than fifteen years, indicate that a few points might be of value.

There seems to be an idea prevalent, that the laboratory man, be he chemist, bacteriologist, or

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pathologist is possessed of clairvoyant powers. Be assured, that if he is honest, he is not so gifted. The bane of his life is to be asked, and expected to do something beyond the powers of mortal man. Do not send him a macerated specimen, in some indifferent fluid, and attach to it your prescription blank with some such words as these written on it in your choicest hieroglyphics, "Specimen from the late honorable Silas Smith. What is it?" To do so is a reflection upon your intelligence.

It is usually of much importance to the pathologist in coming to a conclusion, to know where and how the specimen was obtained. Tell him all you know about the case. Was it removed at an operation and from what part of the body? Or was it passed? Or, perchance, did some one of your patients find it upon the door-step in the morning? The specimens submitted to a diagnostic laboratory come from various sources. I have seen presented for diagnosis a great choice of things, varying from a leather belt with insect eggs neatly deposited upon it, to milk saturated with caustic alkali. Remember that a pathological diagnosis is like a bedside diagnosis. It is the result of summing together of a number of related observations. Remember the aphorism of Hippocrates; "Experience is fallacious and judgment is difficult". Remember too, that if the pathologist is as good a man in his line as you are in yours, on the mere law of chance, he is as likely to be right as you are, even if he does not agree with you. See that he is a good man and give him an even chance to help you.

The value of the history of so simple a specimen as water was brought out very clearly some time ago. Two samples of water from the same source were submitted for examination. One was to be examined chemically, the other bacteriologically. The specimens were examined independently. The chemist condemned the water as insanitary; the bacteriologist passed it. On the face of it the report would have looked amusing to a third party. The facts of the case, learned later, were these: the water was gotten from a well in a stratum of sand. On one side of the sand bank was a dump for refuse. The water was filtered bacteria free by the sand, but the ammonia and other chemical substances in solution gave evidence of the contamination by the refuse. The sand-bank could not, of course, be considered an absolute and permanent barrier against bacterial invasion. The water was rightly condemned.

While speaking of water, I wish to impress upon you that a single examination is relatively valueless without a thorough sanitary survey, and also that repeated examinations alone will not purify it. Typhoid bacilli are practically never found, except in the most grossly polluted water. A high count and the presence of organisms of the colon group are sufficient evidence of contamination to condemn a sample. Bacteriological examination of water is a delicate procedure, and results are worthless unless minute details have been observed in sampling. Any old bottle and cork which have been sterilized are not proper containers. Most laboratories will furnish proper containers and instructions for this work.

Aside from water, perhaps no class of specimens, as ordinarily presented, are so unsatisfactory as tissues. They range in size from a pin-head to a cocoanut. We get them soaked in salt solution, in carbolic acid and other solutions of various kinds and origin, which are not fixatives. We get them dried to a delicate crisp between bits of paper or cotton. In order that it may show some semblance to the tissue during life, material of this kind should be properly fixed immediately after its removal from the body. It should not be dissected by the surgeon or marveling friends, nor should it be jammed into a bottle so small as to thoroughly distort it, and which must be broken to remove the specimen from the container. There should be four or five times as much fixing fluid as specimen, not just enough to keep it moist and give an odor. As a general rule formaldehyde one part and water nine parts is a good fixative, is readily procured and is cheap. If the specimen is very large it should be sliced in slices not over one inch thick, but the pieces should be so cut that they will hold together and give some idea of its original appearance. Fixative fluid must penetrate completely to give good results.

Special stains or examinations frequently require special fixing solutions. A full history of the case, giving the organ and a sketch of the plane of section are desirable. It helps the pathologist to orient the specimen in the preparation of sections. A good history interests and stimulates the laboratory man and he will make a problem and not a mere examination of your material. Please remember that an absolute diagnosis is not always possible between chronic inflammation and tumor formation, and also that inflammation is common in tumors. Likewise the question of innocence or malignancy can usually but not always be settled by the microscope. It is therefore wise to submit as a general rule the entire specimen, indicating if you desire the portion in which you are most particularly interested.

Blood counts must be made at the bedside.

They cannot be made from dried droplets of blood or smears on glass. The electronic miracles of Abrams haven't penetrated the simple mind of the clinical pathologist yet. Smears, when properly made on glass and air dried, are valuable for differential leucocyte counts, general blood surveys and the Widal tests. Much may be learned from well made smears.

Milk, urine, gastric contents and exudates should be in clean sterile containers and in amounts permitting other than microchemical methods. Two to four ounces, or at least sufficient to float a specific gravity bob, should be sent, together with a definite statement as to what is desired and a full history of the case. In the matter of urine, for example, a different interpretation may be placed upon the presence of pus and blood cells, depending upon the age and sex of the patient, and whether the specimen was obtained per catheter or not.

Specimens for cultural examination should be iced and not preserved with carbolic acid or other disinfectants. Direct smears in suspected cases of diphtheria are as a rule not satisfactory. The throat should be directly cultured on Loeffler's media. It usually requires not less than nine hours of incubation to make a definite diagnosis. On the other hand cultures for the diagnosis of Vincent's angina are not trustworthy, in this condition air dried smears should be submitted.

The diagnosis of tuberculous infection by guinea pig leaves much to be desired. Pigs seldom show the results of the disease before the fourth to sixth week, and if the material contains other organisms with the tubercle bacilli the pig is likely to die of sepsis or peritonitis before the tubercle bacilli indicate their presence. Not infrequently repeated examinations of the suspected material will reveal the tubercle bacilli before a result may be expected by the pig method.

In the diagnosis of syphilis, we have no 100 per cent test. In a review of over 5600 cases of syphilis, Boas gives the following percentages of positives in the various stages of the disease: primary lesion 59 per cent; secondary stage 90 per cent; tertiary stage 81 per cent; latent syphilis 35 per cent; paretic dementia 100 per cent. In the experience of Captain Craig of the U. S. Army 36 per cent positives were obtained by the end of the first week after the appearance of the initial lesion, which percentage rose to 80 per cent by the end of the fifth week after the appearance of the chancre.

For the Wassermann test a definite amount of blood is needed. This varies according to the technic employed. It is best on the whole to send not less than 5 cc. A sterile container with a sterile stopper should be used. The blood should be drawn with a dry sterile syringe and forced without too much aggitation into the container. The blood should not be drawn for some hours after a meal. The use of alcohol or an anesthetic is likely to interfere with the test, so that bleeding should not be done for several days after either has been taken. The blood should be permitted to clot thoroughly before being mailed, and in the winter time protection should be afforded against freezing.

More recently, there have been reported in the literature a high percentage of early positive Wassermann tests made with a minute amount of fluid expressed from chancres. This would require that the patient present himself at the laboratory. With this procedure I have had no personal experience.

In my opinion the earliest positive diagnosis in a high percentage of cases of syphilis is to be obtained by the dark-field examination of chancre fluid for the treponema pallidum. It is highly important in this examination that no local application should have been made, this is especially true of mercurials. If local applications have been made they should be withheld for several days previous to the dark-field examination. Simple saline dressings being employed in their stead. The patient must come to the laboratory for the dark-field test.

The newer blood chemical tests have opened quite a field of information, and here too, certain precautions are necessary to secure trustworthy data. The blood should be drawn into a dry container containing a minute but definite amount of oxalate. It should then be carefully and continuously rotated for several minutes to prevent the slightest clotting. Too much oxalate may interfere with some tests and too little will not prevent clot formation. These specimens should be kept cold and forwarded promptly, the percentage of blood sugar is very likely to decrease markedly in amount on standing. One drop of a 20 per cent solution of formaldehyde to 5 cc. of oxalated blood will hold the blood sugar fairly constant.

These are a few of the more important considerations relative to the preparation of specimens for laboratory examination which our experience has shown to be necessary. Most laboratories will gladly make suggestions which should aid in getting the best possible service.

These remarks are not intended to be caustic or critical. It is fully realized that the average practitioner does not attempt to keep himself any better informed on laboratory technic, than does

the laboratory man upon the finer points of abdominal surgery.

What is needed, is the appreciation of the value of properly prepared specimens, and a franker co-operation between the two for their mutual benefit.

The clinical pathologist is a consultant in a valuable and specialized branch of medicine. To inadequately present your case to him curtails the service he may be able to render.

EARLY DIAGNOSIS OF GLAUCOMA*

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My purpose in discussing the early diagnosis of the symptom complex called glaucoma is to show that it can assume many varying aspects with unexpected facilities for taking us by surprise and that errors in diagnosis of this syndrome are responsible for much of the blindness which exists today. It is a lamentable fact that errors in diagnosis of this condition are much more common than they should be, therefore the importance of recognizing this insidious disease at a very early date is to be emphasized, in the hope that the disastrous consequences of this dreaded disease can be prevented by an intelligent study and a proper interpretation of its symptoms.

Simple glaucoma is so insidious in its onset and so devoid of striking symptoms that it often exists for some time without attracting serious attention, while Fuchs states that although the symptomology of congestive glaucoma is so well recognized it is still very often diagnosed too late. There is no disease of the eye in which it is more important to take a careful account of the general physical condition and health of the patient than in glaucoma. Probably the more we learn about ocular disease the more widely will we perceive its relation to general conditions. La Grange in his latest book says that glaucoma is generally not a local disease but an ocular condition occurring in an already diseased organism.

It is a well known fact that acute glaucoma can exist unrecognized for some time because symptoms which generally accompany it, headache, vomiting and malaise, obscure the eye trouble. Throughout the prodromal period there are recurrent attacks of intra-ocular tension often accompanied by unilateral headaches. These are frequently treated by the family physician and, as the significance of such recurrent headaches of this character has not been definitely brought to his attention, these headaches receive no ophthalmological consideration. The headaches, which make us suspicious of glaucoma, are those which come in the morning and last for a short time; or headaches in people past middle life when all refractive errors have been corrected; or headaches in elderly patients associated with vomiting. In acute cases the vomiting stops in twenty-four to forty-eight hours, but nausea may last for weeks and is often the only warning sign of a fresh rise in intra-ocular pressure. The prodromal symptoms are apt to make their first appearance during a period of mental or body fatigue and to pass away in a few hours. This is one of the reasons why so little attention is paid to them. When a patient who is suffering from any disease or injury complains of pain or an increase in pain we should test the tension at once. Pain varies enormously in different cases. The early short attacks of subacute glaucoma may have mild feelings of discomfort or of ocular pressure occurring periodically and lasting but a short time. The acute disease is usually marked by severe pain. The oculist may make the mistake of thinking the cause of the pain is in the nose, ears or teeth because the pain is not always in the eyes. Sleep will greatly lessen or stop this pain. Coal tar products have no effect on the pain but miotics act like a charm. When an elderly patient suffers from facial neuralgia, especially if it is associated with loss of sleep and appetite, it is well to examine the eyes. Buettner reports cases of neuralgia in all three branches of the trigeminus which precede the onset of glaucoma by several years. Tearing with normal lacrimal apparatus, not connected with other causative factors is sometimes an early symptom.

Sensations of light may occur in the early stages of congestive glaucoma, especially if the patient is tired. This symptom also occurs in any condition where the retina is irritated, similar phenomena of central origin are met with in neurasthenic patients suffering with errors of refraction and nervous troubles.

Circumcorneal congestion is a constant factor in acute and subacute glaucoma while enlargement of the episcleral veins, especially of those which perforate the sclera, is the rule in chronic glaucoma.

Elliott states that mists and halos are often the earliest evidence of the disease which attracts the patient's attention. The frequency of mists and halos, as noticed by the patient, gives us valuable evidence as to the recurrence of congestive attacks. In the earliest stages they come and go and are due to cloudiness of the cornea. Halos

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are a very delicate symptom of a rise in intraocular pressure. When a diagnosis has been made mists and halos are a much appreciated bit of evidence of the onset, duration and frequency of the acute attacks. In describing mists some patients speak of a cloudiness of sight, some of seeing through a smoke, while others state that there is a fog in the atmosphere. Some patients complain that these mists are very bad in the early morning and gradually pass away as the day goes on, others have them later in the day and the attacks synchronize with periods of fatigue, but food, rest or diversion relieve them. When mists are present halos around lights can also be seen. At certain times, under favorable conditions, these halos are so faint they have to be carefully looked for, while at other times every tiny flame has its ring of light. It is very important to distinguish between true and false halos. The real glaucoma halo is much brighter than a false one, the patient can easily see three or more colors, a central blue, a middle yellow and an outer red. Using a small source of light a distance of ten feet in a dark room the glaucomatous halo should measure from twelve to twenty-four inches in diameter. They will vary in size in different patients and in the same patient at different times. Physiological halos are constant in size, measuring about fourteen inches in diameter. Patients who have a glaucomatous family history and who have a low corneal diameter should come back periodically for observation and should report at once any suspicious symptom of the disease. Anesthesia of the cornea is usually attributed to compression of the nerve fibers going to the epithelium, by the fluid in the lymph spaces or to a compression of the long ciliary nerve.

A shallow anterior chamber occurs as a result of the swelling of the vitreous or congestion of the ciliary body or both, or it may be due to a closing of the angle of the anterior chamber due to adhesions. In the earliest stages the anterior chamber is shallow only during the congestive attacks but in the later stages it may become permanently shallow. It is often of great importance to know how far forward the adhesions extend. My former teacher Salzman has given us a method of examining the angle of the anterior chamber from the side by direct or indirect ophthalmoscopy with or without the use of the contact glass. The angle of a shallow anterior chamber can only be examined with the use of a contact glass. A disposition to glaucoma is often indicated from the condition of the angle of the anterior chamber and much valuable information may be obtained as to the depth of the chamber and the presence of synechia. Often in early glaucoma one can find sepia brown or black pigment spots of pigment epithelium origin in the Schlemm's canal region. During acute congestive attacks the contents of the anterior chamber are often turbid, the result of inflammation of the ciliary body and iris; this leads to deposits on the posterior surface of the cornea. The finding of these deposits is important for the recognition of the cause of glaucoma and is the main indication for the use of mydriatic drugs.

In the earliest stages there is little change in the pupil but later dilation of the pupil is almost constant in the congestive attacks. This dilation is associated with a sluggish response of the pupil to light and accommodation and increased with the duration of glaucoma. Later this dilation becomes oval with its long axis vertical. Knapp states that adrenalin causes dilation of the pupil in glaucoma but not in a normal eye. During the acute congestive attacks the iris may become extremely congested and altered in color. Later this color fades to a gray with atrophic patches on the surface of the iris. The characteristic black edge of the pupil, due to eversion of the uvual pigment at the pupillary margin, is only seen in the late state. In simple glaucoma we get a dilation of the pupil without iris changes. The pupil will respond to miotic or mydriatic drugs even though the light reflex is feeble or absent.

The earliest sign of glaucoma associated with the ciliary body is a weakness of accommodation. Patients complain of continually changing their reading glasses. They may have normal vision but they do not care to read. This accommodation weakness is most marked in the congestive attacks but does not completely pass away during the intervals. This results in the patient's presbyopia increasing out of proportion to his age. Pain accompanying a series of presbyopic changes is an important symptom. The forward movement of the iris and lens leads to an increase in the refractive powers of the eye, in other words, the patient becomes more myopic. These changes are not enough to compensate for the marked increase in presbyopia. A cataractous lens secondary to glaucoma is characterized by a lack of details; it looks more smoky and greenish than the ordinary form of cataract. Where the glaucoma is secondary to cataract the lens has the characteristic intumescent appearance and many times there is an uncomplicated cataract in the other eye. In many cases we may have cataract and glaucoma combined without any relation to one another.

Perimetric examination, when conducted in a

reliable manner, furnishes the most delicate and reliable indication of the presence of glaucoma, the progress of the disease and the value of any method of treatment.

Examination of the fields show that the nasal portion of the fields is affected before the temporal and becomes more affected as time goes on. The central field is present until a late stage and as the disease progresses the field shrinks towards the center. Central defects consists of an enlargement of the blind spot of Mariotte, which is a very early defect, and of a sickle shaped scotoma which are connected with the blind spot and radiate above and below it. This scotoma is supposed to represent a lesion of the nerve fibers at the edge of the disc. Paracentral scotomas, if followed for some time, can be traced until they join with the enlarged blind spot.

The light sense is affected in glaucoma. Patients have difficulties when they pass from light into darkness. Bright days dazzle them and dark days interfere with their vision. The various authors disagree on what these light changes are. An examination of the light sense ought to give us valuable data. Diminution in visual acuity is a frequent if not a constant sign of glaucoma.

Every oculist should use a tonometer in his ordinary examinations because in the majority of cases it tells us if the intra-ocular pressure is normal or abnormal and if the pressure in the two eyes is different. Variation in pressure is an excellent means for determining the progress of the disease. Increased intra-ocular pressure is a symptom and no symptom is pathognomonic. Jackson states that simple glaucoma may exist without increased intra-ocular tension and on the other hand a very striking increase in intra-ocular tension may be found in connection with a uveitis and this tension drop in a few days to normal without any loss in vision or signs of glaucoma. Thibert states that lying down has no effect upon the tension of a normal eye, but it increases the tension of a glaucomatous eye and also of an eye predisposed to glaucoma. Homatropin produces no change in tension in normal eyes but it does in glaucomatous disposed eyes.

People sixty years or older whose vision cannot be improved beyond 20/30, although there is no apparent reason to be found as all the eye structures are normal, have often been demonstrated by later findings to be incipient cases of glaucoma.

Dimmer says that bending of the blood-vessels on the upper, lower or nasal border of the disc is evidence of early glaucoma; often these vessels appear to be drawn towards the nasal side. The next thing we notice is the blood-vessels on the disc make a strong bend outward and the smaller vessels, which ordinarily take a straight course, make a similar bend. In questionable cases it is of great diagnostic importance to compare these findings with the other eye.

Pallor of the disc is a very early and suggestive sign in some cases and is due to a constriction of the vascular supply; the result of the increased pressure. Early cases often show a slight depression of the disc, not enough to be measured by the ophthalmoscope, but enough to be detected. Thompson suggests that the large so-called physiological cups approaching the nasal, are frequently true glaucomatous discs and that they should always be regarded with suspicion, because they often remain stationary for years and then become unmistakably glaucomatous. The typical cupping of the disc is a feature of established glaucoma and is often absent in the early cases. Posey states that a tendency of the scleral ring to become visible all around the disc and its disposition to broaden especially on the temporal side is one of the first things to excite one's suspicion.

Pulsation in the retinal veins is generally believed to be a sign of glaucoma, especially if mydriatics increase the amount of pulsation or cause the appearance of a pulsation that was not present before the use of the drug. We know very little about venous pulsation in normal eyes, therefore it is not safe to say much about it in diseased eyes. There is no pulsation in retinal arteries of normal eyes because the diastolic blood-pressure is higher than intra-ocular tension. If the intra-ocular tension equals the diastolic blood-pressure, then the retinal arteries will empty in diastole and fill in systole. During the acute attacks of glaucoma the choroid is congested, this causes a venous congestion of the eye ball and a distension of the vasa vorticosa.

Koeppe states that the vitreous structure becomes more opaque with the increase of tension.

La Grange states that just as the cheeks flush when one has been insulted, so the ciliary nerves of the glaucomatous subject speed up after deep emotion or excitement of a psychic, mental or physiological nature. In the beginning there is always some nervous excitement underlying every glaucoma.

In order to diagnose glaucoma in its earliest stages, the patient should be thoroughly examined. This is such a long task that much time must be given to it. A diagnosis should never be made on a single symptom, but every factor in the case, which can guide the judgment, should be taken into consideration and no diagnosis

should be made until every modern method at our disposal has been used.

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Discussion

Dr. William H. Johnson, Muscatine—I have greatly enjoyed this paper of Dr. Weih's on a subject that I consider the most important one with which an oculist has to deal. There is no eye disease that has such disastrous consequences and none, in my judgment, that is more often overlooked than chronic simple glaucoma. There are a great many important points brought out in this paper. Some that I consider most important should be emphasized. Elderly patients giving a history of facial neuralgia, sensations of light, mists and halos. We should ascertain, if possible, whether or not there is a family history of glaucoma. I now have two families in which there are twelve eyes affected with this malady. In one case the family history was of considerable importance in arriving at a correct and early diagnosis. The anatomical make-up of the eye, the hyperopic, the small cornea, the shallow anterior chamber and the small filtration angle. A recent meeting of the Chicago Ophthalmological Society was given over to the discussion of glaucoma. Dr. Gradle says, "That there are three factors, one or more of which were necessary to have an attack of glaucoma." First, a certain number of eyes are, on account of their anatomical make-up, predisposed to glaucoma. Second, he believes that the sympathetics regulate the vasomotor control of the blood-vessels in the choroid. The blood-pressure of the choroidal vessels is not the same as that of the general circulation. This is brought about by the equalizing effect of the sympathetics. A lack of the normal tonicity of these choroidal vessels due to some interference with the sympathetic system causes an increase of the intraocular tension. It is interesting and along this same line of thought to note that in syphilitic diseases of the spinal cord, such as tabes, the eyes of these patients are practically immune to glaucoma. The third factor predisposing to glaucoma is a sudden rise of the blood-pressure in the general circulation. The slit lamp has opened a new field of study in glaucoma. The finding of pigment deposits with the ordinary loop usually places the cases in the class of glaucoma secondary to uveitis. At the present time with the use of the slit lamp these deposits can be found in many of the cases formerly diagnosed as primary. Dr. E. V. L. Brown recently showed fourteen eyes in all of which a diagnosis of primary glaucoma had been made, in twelve of these eyes, pigment deposits were discovered by the use of the slit lamp. Weakness of accommodations, history of having to have glasses changed every few months is a most important early symptom. In taking the history care should be observed to learn of the conditions in the home, whether or not there is undue nervous excitement, worry, etc., and whether the cause of these conditions could be remedied. The nervous element is a most important one in bringing on an attack. Racial predisposition and persons who naturally have a nervous instability, Hebrews and Egyptians, are especially susceptible to the disease. The most important aid to early diagnosis is the perimetric examination. This is a procedure that requires considerable time if our results are to mean anything and I believe that many of us do not make use of it on account of the time that it requires. It should be a routine in the examination of every patient over fifty, whose visual acuity is diminished any appreciable amount, if this dimunition cannot be otherwise accounted for. We should all have some reliable tonometer and use it routinely in this class of cases. The present cost and complicated mechanism of the slit lamp makes it impractical for general use, but it no doubt is an important aid in making a diagnosis and in the observation of glaucomatous eyes. No one symptom is sufficient on which to base a diagnosis. We

should gather all the evidence we can by using all the recognized methods at our disposal. This should include a thorough general physical examination. If we do this and then institute early treatment there should be fewer eyes destroyed by this disease.

Dr. Geo. C. Albright, Iowa City—I have but a single question which I would like to ask the Doctor. He mentions the loss of pigment and the accumulation of this pigment in the region of the Schlemm's canal. Does the Doctor regard this accumulation of pigment as one of the causative factors in glaucoma; the pigment interfering with the out-flow of the intraocular fluid?

Dr. Thomas R. Gittins, Sioux City—I would like to have asked Dr. Weih if he found much reference in the literature to the relation of glaucoma and migraine. I remember a few years ago that Dr. Van Epps of Iowa City felt that quite a number of migraine headaches, so-called, were really glaucoma.

Dr. E. P. Weih, closing—I wish to thank Dr. Johnson, Dr. Albright and Dr. Gittens for their remarks. In answer to Dr. Albright's question if the accumulations of the iris pigment cells in the Schlemm's canal region were a causative factor in glaucoma and if it interfered with the outflow of intraocular fluids, I will say that this question does not come within the scope of the topic under consideration. However, one can often find these pigment cells, also adhesions, in the angle of the anterior chamber and under certain conditions blood can be seen in Schlemm's canal, therefore they should be considered as one of the numerous possible causative factors. In answer to Dr. Gittens' question, if in reviewing the literature I found many cases where general practitioners were treating the headache of early stages of glaucoma for migraine, will say that I have a patient who after careful examination was definitely diagnosed glaucoma. This patient then went to a general physician complaining of his headache and was told that he had migraine probably due to his liver. In the literature there is much written about migraine headaches and glaucoma.

A FEW ASPECTS OF THE SUBJECT OF BLADDER TUMORS*

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It is my object in this paper to discuss only three parts of the subject of bladder tumors and in order to emphasize my points to touch upon only certain phases of these topics. The material of the paper is largely based upon an analysis of a series of ninety-nine cases of tumor of the urinary bladder seen at the University Hospital during the past eight years. I will not go in to all the details of this analysis.

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The first thing that I would like to emphasize is the relative high percentage of malignancy found in tumors of this organ. It is much higher than we formerly thought it to be or higher than we are ordinarily accustomed to thinking of it even now. There are two explanations for our misconception. In the first place, pathologists have disagreed and do disagree very much in their ideas about these tumors and use a multiplicity of terms in describing the same tumor, and in this way have given us no satisfactory classification that has been generally accepted. In the second place, malignancy of the urinary bladder is quite different from malignancy elsewhere, and the clinical manifestations do not suggest the true nature of the condition.

In reference to the classification we can roughly, but not entirely accurately divide all bladder tumors into three or four general classes on the basis of the tissue from which they arise. First, tumors of epithelial origin; second, tumors of connective tissue origin; third, tumors of muscle origin, and fourth, a very small class to receive those tumors not included in the first three groups. The first class, epithelial tumors, certainly comprises 90 per cent or more—probably 95 per cent—of all the primary bladder tumors. True primary tumors of the last three classes occur so rarely that they are almost curiosities and need not be taken into consideration from a clinical standpoint. In this series of ninety-nine cases there were only two tumors that would not fall in Class I. They were two sarcomas. One was undoubtedly a secondary tumor being a direct extension from a pelvic sarcoma. In the other case—a child of eight years—it was an unsettled question as to whether the sarcoma originated in the bladder wall and then involved the retroperitoneal structures or vice versa. As a matter of fact, it was also an open question as to whether or not the tumor was a true sarcoma.

The epithelial tumors are divided into: (1) papilloma; (2) carcinomata; (3) adenoma, and (4) cysts. Again, the last two groups are very rare and for our purpose need not be considered. We have left then the papillomata and the carcinomata and it is the disagreement of opinion upon these two classes and the multiplicity of names given to these types of tumors and also the original misconception of the true nature of the first class that has lead to the confusion in a very large measure. No one will disagree as to the true nature of the carcinomata. We have had, however, an incorrect idea that the papillomata were largely benign. This was the original idea, but the past twenty or twenty-five years and es-

pecially the past fifteen years has brought about a very radical change until now the large proportion of this great class of tumors is definitely demonstrated to be malignant. These tumors do not look malignant. Sections from different areas may show no signs of malignancy while sections from other areas of the same tumor may show the malignant changes. Further, being located in the urinary bladder they do not have the opportunity to show the clinical signs of carcinoma. All of this has led to the misunderstanding.

The papillomata comprise certainly more than 50 per cent of all bladder neoplasm and with the change in conception of their true nature has come a change in our entire idea of all the bladder tumors as a class. Many men now hold that all epithelial bladder tumors should be considered malignant until proven otherwise and many pathologists hold that they are all potentially malignant.

In this series of epithelial tumors sixty-seven pieces of tissues—either the whole or a part of the tumor—were sent to the laboratory for histological examination and in sixty-five of the reports malignancy was mentioned. In the two cases where it was not mentioned, subsequent histories of the cases showed it to be present.

Malignancy of the urinary bladder is a little different from malignancy elsewhere. It is true that it produces very great local effects through bladder obstruction, irritation and infection with the resulting effect on the kidney function and all the general damage secondary thereto, but one is not struck with the real malignant changes. The bladder is so constructed that it does not facilitate metastasis and we do not see a high percentage of this type of change. Furthermore, when the tumor does get outside of the bladder by direct extension—and this is the most frequent mode of metastasis—we do not see even then but a relatively low percentage of distant metastasis.

For these reasons then we have failed to be impressed early with the true nature of the growths.

In this series of ninety-seven epithelial tumors the diagnosis of malignancy was made upon one or more of the following: (1) the undoubted clinical findings at the time of examination, such as the history, the appearance of the tumor, evidences of extension and so on; (2) the histology of a piece of the tumor obtained through the cystoscope or at operation or at autopsy; and (3), the subsequent history of the case. On this basis a diagnosis of malignancy was definitely made in eighty-six of the ninety-seven cases of epithelial tumors. Of the eleven benign tumors all were small and easily destroyed by fulguration and eight of them at least no recurrence has been noted. This would indicate a malignancy then of a little over 89 per cent of the cases in this series and is in agreement with the more recent conception of this disease.

The second point that I would like to make is in connection with the diagnosis. While the cystoscope is absolutely essential in making the diagnosis and really is the only certain way of obtaining the required information, yet there are a few other signs and symptoms that help very materially.

Hematuria is the one outstanding signs of the disease and is present in some form at some time during the course in fully 90 per cent of the cases. To make it more significant it is a very early finding, being the initial symptom in from 30 to 40 per cent of the cases. Furthermore, it is almost always a gross hematuria and being such it alarms the patient and causes him to seek medical advice. Classically it is a gross symptomless hematuria but the presence or absence of other symptoms depend upon factors to be mentioned shortly. Its degree may vary from total absence to a severity, threatening exsanguination. Of the ninety-nine cases here considered hematuria was present either in the history or at the time of examination in ninety-four. Of the remaining five, one was the child with a sarcoma and four were cases of very small benign papillomata. In eighty-eight it was gross and six microscopic. In twenty-nine it was slight, moderate in fifty-one and severe in eight. In three of the latter it was so severe as to require emergency measures; one requiring immediate operation and the other two —both being inoperable—blood transfusions. In forty-six cases it was the first symptom noted; in thirty-four it was or had been in the beginning absolutely symptomless. A gross hematuria in the absence of kidney symptoms or findings should make one think of a bladder tumor and when the sign is unaccompanied by any other symptom of any kind—that is when you have a symptomless hematuria—the only clinical diagnosis that one can make is that of bladder tumor. However, this is not pathognomonic. During the past eighteen months I have seen five cases with such a history that have proven not to have any bladder neoplasm.

I do not mean either that hematuria is a definite sign of bladder tumor. While it has been present in 93 per cent of this series of cases, I have records of its being a finding in 449 other cases admitted to the University Hospital during the same period.

Other local symptoms are due largely to the size, location and type of the tumor. Bladder

neck obstruction was present in forty-two of the ninety-nine cases and is due directly to the size and location of the tumor. This is an especially bad condition, as it leads either directly or indirectly through residual urine and infection to serious secondary changes in the renal function and is the most common cause of death in the end.

Bladder irritation was present in seventy-five of the cases and could be partially ascribed to secondary infection in forty-four. When not due to infection it is explained by the location of the tumor and the ulceration that so many of the carcinomata undergo. Next to the advanced tuberculous bladder the carcinomatous bladder is the most irritable. In all of the irritable bladders there is more or less pain of varying degree due to spasm.

Another type of pain sometimes met with and present in eleven of these cases is that due to extension of the tumor into the pelvis and involving a nerve.

Another thing of value in the diagnosis is the examination of pieces of tissue found in the urine. While this must be interpreted with care, yet, when taken in connection with other suggestive symptoms, is often enough not only to make the diagnosis but to determine the type of tumor. In sixteen cases such a finding occurred and in fourteen the tissue was well enough preserved to allow the pathologist to make a definite diagnosis that was confirmed by other means.

The cystoscope, however, is the only means of making an intelligent diagnosis and of obtaining the information necessary for the proper disposal of the case. Ninety-one of ninety-nine cases were cystoscoped. In the other eight cases four had previously been operated and in the remaining four the cases were so advanced as to make cystoscopy both unnecessary and useless.

The third thing that I wish to take up is a very brief resume of the treatment.

Treatment through the cystoscope. Before Beer in 1910 introduced the use of the high frequency current and the process termed fulguration there were all sorts of very ingenious methods for removing papillomata through the cystoscope. Nitze reported 150 tumors treated through his operating cystoscope with one death and only twenty recurrences—a record yet to be equaled by any method. However, fulguration has proved so successful that all previous trans-urethral methods have been discarded. Its employment is limited and is applicable to only selected cases. Its practicability depends largely upon the nature, size and location of the tumor. It is recommended by its simplicity and lack of danger and especially the fact that no method of treatment gives so low a percentage of recurrences in the form either of the return of the original tumor or the appearance of transplants as this. It is ideal for the papilloma whose pedicle can be reached or whose size is such that destruction can be brought about in a reasonable number of sittings. It is also of value in some of the pure carcinomas and in this series I have six such cases where the tumor has been destroyed. In two there have been no recurrences in two years and in four the recurrences are readily controlled by further application of the same method. Of the eleven benign cases in my series, this method alone has produced the only cures of the whole series.

Of the open operation various procedures have been and are in practice from simple cystostomy for drainage to complete excision of the bladder and transplantation of the ureters. Of course, any type of operation will depend entirely upon the nature, location and type of tumor. However, these bladder tumors have such a tendency to transplant themselves that most any form of purely cutting operation is quite unsatisfactory. No means to completely overcome this difficulty has been developed but some procedures do lessen it. Radical excisions of the whole bladder or large portions of it have not been accompanied by results of enough brilliance to offset the very great risk to the patient. In any attempt at excision of the tumor means must be taken at the time of operation, first to remove all of the tumor, if possible, and second, to prevent their recurrences and transplants, and following the operation procedures in the form of cystoscopy and fulguration must be carried out to take care of these recurrences if they occur. Every case of tumor should be cystoscoped two or more times each year and like syphilis we never know whether or not they are cured.

Of the various methods of preventing recurrences and also of allowing the excision of the more difficult tumors probably the best is that recently introduced in the form of surgical diathermy in which tissue coagulation on a big scale is carried out by means of a well controlled high frequency current. According to this method the bladder is opened and a good exposure of the tumor is obtained, and then, with the appropriate electrode, the high frequency current is passed into the tumor and by its production of heat in the tissue of the tumor itself the tumor is coagulated. The process is carried out until the tumor is completely destroyed down to the base. In this way, the tissue is destroyed as the process proceeds and all of the spaces are closed ahead of the tissue destruction. It seems safe to say that by this method not only will we in the future get

better results so far as recurrences and transplants are concerned, but it also makes the removal of these tumors more simple and allows us to treat many of them that heretofore have been considered inoperable.

Nothing has been said so far as to the use of radium and x-ray and much could be said both for and against each.

As to radium my personal experience has been altogether too limited to allow me to say anything for or against it. Certainly we find in the literature reports of some brilliant results, but there has been also some equally disastrous results, unfortunately, not so promptly reported. Certainly we can say that to apply radium to the bladder region—either on the skin or in the rectum—or even in the bladder without some means of accurately applying it directly to or into the tumor, is folly. That is, if radium is to be used it should be applied directly to or into the tumor, probably best by means of needles through a suprapubic cystostomy or in a capsule fastened securely to the tumor base at the time of excision. It appears, however, that diathermy will largely take the place of radium.

The last word in x-ray treatment has not yet been said. With the introduction of higher voltage machines better results may be looked for. In our series it has been used and I do believe that there is evidence that it reduces pain and probably does retard in many cases the rate of growth.

However, our results from any and all methods of treatment have been so poor that I would certainly be the last person to recommend the discontinuation of any form of treatment that has ever helped in any way.

To sum up then the treatment I believe that it is good judgment to use in the first place any method or methods that will destroy growth and prevent its return, and then to follow up the case over a period of many years with those procedures that will discover the recurrences and take care of their proper treatment.

As to the result in the series of cases under consideration I have the following to say:

Of the total, fifty-one cases are now known to be dead.

Ten of the cases that were considered to be operable or subjects for treatment refused operation or any form of treatment. Three of these are now dead.

Twenty-three cases were so bad that no treatment whatever was recommended.

Nineteen cases were far advanced and certainly beyond the point where any form of treatment for the removal of the tumor was practical and in these nineteen cystostomies for drainage alone was done.

In twenty-two cases excision of the tumor by one method or another was carried out. In seven there has been no recurrence to date and of these seven, one was excised seven years ago and one five years ago. The other five were excised within the past three years. In none of these seven is a cure claimed, but probably time will prove that a cure has been obtained in three or more of these cases. In another seven of this same group there has been recurrences in the form of transplants that are now under control by fulguration. In two cases recurrences appeared and the patients are now in a hopeless inoperable and untreatable condition. In five recurrences have been followed by death. One case died, three weeks following the operation, of pneumonia.

Fulguration alone was used in fourteen malignant cases and of these, six showed complete destruction of the tumors, but it is too early to claim any cure. In four of them the original tumor occurs at intervals and further fulguration controls the recurrency. Three of the cases were not improved but refused further treatment and two of them, I understand, are now dead. One case died during the course of treatment from causes that have no relation whatever to the bladder tumor.

Eleven cases of benign tumor were treated by fulguration alone and cures were evidently obtained in all of them.

Discussion

Dr. C. W. Losh, Des Moines—The two outstanding features of this paper are: First—The frequency of malignant findings in apparently simple papillomas of the bladder, and second, the importance of arriving at an early diagnosis, in order that proper treatment, such as fulguration, might be instituted. The early symptom, hematuria, is one that can hardly be overlooked and the importance in definitely determining the source of the hematuria, can easily be done by a cystoscopic examination. Knowing that metastasis from tumors of the bladder is rare, with an early diagnosis the growth can be fulgurated with very gratifying end results. Fulguration through the cystoscope, as stated by the essayist, must only be done in selected cases; those where the tumor is not particularly close to a ureteral orifice, where there is a definite pedicle, and where the growth can be controlled through the cystoscope, otherwise the cystostomy is indicated. My experience with heavy doses of x-ray and radium has not been satisfactory. During the past year I have had some four or five cases of malignancy either in the bladder or adjacent structures, treated in this manner and the only results obtained was partial relief of pain. Otherwise,

they gradually became worse, in fact in my opinion the end was hastened. I will admit that all these cases were far advanced and possibly if x-ray and radium had been used early the results might have been different. The best treatment then, at the present time, is fulguration with or without excision, this should only be done by an experienced operator, one familiar with the cystoscope and cognizant of the dangers associated with fulguration. I wish to commend Dr. Alcock upon stressing, first, an early diagnosis and second, the importance of hematuria whether it be microscopical or macroscopical. If more attention was given to microscopical hematuria an early diagnosis could be determined, prompt treatment instituted, followed by permanent recovery.

Dr. A. G. Fleischman, Des Moines—I am glad to hear Dr. Losh emphasize the significance of hematuria. If the symptom of hematuria were evaluated in its proper significance, more of these patients would have their condition diagnosed earlier, with the result that many complications that occur in the later stages could be avoided. I concur with the essayist that all growths of the bladder are potentially malignant; too much attention must not be given to the cystoscopic appearance of neoplasm of the bladder, as often growths that appear as benign are truly malignant in character. In my experience fulguration has not given the results that Dr. Alcock has alluded to. Surgical excision of vesical neoplasm in my hands has not been very satisfactory, and I am of the belief that this opinion is unanimous among the urologists of this country. During the last four or five years surgical diathermy has been employed with considerable success by many urologists. The advantages of removing growths of the bladder by this method are many. First, it is absolutely bloodless if the proper kind of electrode is used. Second, it produces a total destruction of the mass in such a way as to minimize metastases by sealing off all the vascular structures near the site of the tumor. Third, general anesthesia is not necessary because sacral anesthesia combined with abdominal field block works very satisfactorily, and the latter method of anesthesia eliminates considerable shock that attends the former.

HOMEOPATHIC MEDICAL COLLEGES

According to the Hahnemannian Monthly, there is but one homeopathic medical college in the United States that gives a full course in homeopathic medicine on a sound financial basis and that is the Philadelphia College. The New York Homeopathic College continues to operate as a full homeopathic school, but is severely embarrassed financially. It has buildings and other property estimated at $2,000,000, but with a debt of $350,000. It is estimated that unless a fund of $1,000,000 can be raised within a comparatively short time, the New York Institute will be obliged to close its doors. This school has been in operation sixty-five years.

MEDICAL TREATMENT OF EMPYEMA WITH SPECIAL REFERENCE TO CHEMOTHERAPY*

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Interest in diseases, like interest in art, literature and public affairs, runs in certain definite cycles. A few years ago following the discovery of salvarsan, interest was focussed upon syphilis in a way it never had been before. During the past two years as the result of the discovery and the use of insulin, the study of that ancient and almost prosaic disease diabetes mellitus, has excited and thrilled the entire medical world. Certain infectious diseases such as influenza, because they appear in an epidemic and periodic manner, produce definite recurring cycles of interest. After this interest has abated somewhat, we can then look back and appraise the results of this period of intensive study.

During the World War physicians had an unusual opportunity of studying medical problems. Problems of nutrition involving large armies or even the entire population of certain countries demanded accurate and immediate solution. Certain infectious diseases notably typhus, influenza, pneumonia and meningitis were seen in such numbers as probably will never be seen again by the physicians of this generation.

At this time an old and somewhat commonplace disease, empyema, forced its unwelcome attention upon the medical profession. Before the war the average physician had not had any very great experience with empyema. The occasional case that wandered into his practice was diagnosed by the aspiration of a small quantity of pus, turned over to the surgeon and operated upon. Some recovered, some died, and the mortality rate was largely a matter of interest to the surgeon. Many cases of neglected empyema also appeared at clinics from time to time—neglected because the study of empyema itself had been neglected.

The treatment of influenzal empyema by the dictum of "when you find pus resect a rib" was followed by an appalling mortality. The mortality rate of 84 per cent at Camp Funston and of 65 per cent at Camp Wheeler emphasized the dangers of early operation in empyema, and made many physicians wonder if we were not dealing with an entirely new type.

While the very high mortality rate observed in the army camps was due in part to the severity of the infection, yet previous studies had already

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shown that empyema was anything but a benign condition. Moschowitz, who studied the cases in Mt. Sinai Hospital in New York, from the period 1904 to 1914, found an average mortality of 28 per cent. He collected further statistics which show that the death rate in empyema before the two great influenza epidemics varied from 18.9 per cent (Lilienthal) to 55 per cent (Lavrow). These statistics prove the great seriousness of empyema, in the decade preceding the influenza epidemics.

The disastrous results of early operation in influenza empyema which were so uniformly noted, constitute the most important single observation on this subject. And conversely the marked improvement in the mortality rate following delayed operation in these cases, remains the most important therapeutic lesson learned in regard to this disease.

At the time the value of delayed operation was coming to be gradually appreciated, several observers introduced less radical methods of treatment. Mozingo irrigated the chest with Dakin's solution through a catheter and obtained excellent results. Manson treated forty-three patients by repeated irrigation with chlorinated soda through a catheter. All of his patients were cured by this method and no secondary operation was necessary.

During the influenza epidemic of 1919 and 1920 forty cases of influenza empyema came under my observation. In most of these cases the empyema appeared within four or five days after the onset of the pneumonia and frequently even earlier. The fluid at first was fibropurulent but rapidly often within twenty-four hours became frankly purulent. Because of the evident coexisting bronchopneumonia, early operation was not attempted. The alternative presented itself of either merely waiting until operation seemed safe or trying in some way to influence favorably the course of the empyema.

Since the investigation of Churchman had shown that gentian violet has a marked bacteriostatic effect upon Gram positive organisms, and as we were dealing with a streptococcic and a pneumococcic infection, we began treating these cases with instillations of gentian violet.

The technique of this treatment was very simple. The chest was first aspirated with a needle, all the fluid possible withdrawn and then 100 c.c. of an aqueous solution of gentian violet was introduced into the chest and allowed to remain there. We began at first with a very dilute solution 1:5000 and in the succeeding injections increased the strength rapidly to 1:1000.

The results of this treatment were very encouraging. Twenty-seven patients were treated by this method and fourteen or more than one-half cleared up completely and no subsequent operation was performed. In eight patients the treatment was only partially successful, later operation being necessary. Five patients whose empyema was complicated by a co-existing bronchopneumonia did not respond to this treatment and died.

In most of the cases where a later operation was necessary, we felt that operative procedure had been simplified by this treatment. I remember one patient particularly, who was desperately ill with a bilateral empyema, whose respirations often were as rapid as eighty per minute, and who, it seemed, could not possibly recover. Under the gentian violet treatment the empyema on one side cleared up completely so that a later operation on the other side was carried out with no risk. This patient made a complete recovery.

This experience during the influenza epidemic suggested a further trial of this method in empyema associated with the usual lobar pneumonia or bronchopneumonia. We hoped that perhaps empyema produced by the less virulent pneumococcus and occurring apart from such an appalling epidemic, would give us even better results.

A short time after the influenza epidemic I saw a case of empyema associated with pulmonary tuberculosis. The patient was acutely ill, had a high fever and the aspirated fluid showed a pure culture of staphylococcus aureus. This patient was treated with gentian violet, and following a single instillation of a 1:500 solution, the pleural fluid became sterile on culture and remained so. Soon after this observation, Waters, of the Loomis Sanitarium, reported two cases of tuberculous empyema treated with gentian violet. The fluid of these patients showed staphylococci and pneumococci both of which disappeared following treatment. I have recently treated by this method two additional cases of tuberculous empyema who showed staphylococcus aureus in the pleural fluid. In both instances the fluid became sterile on culture but both patients unfortunately had a marked pyopneumothorax with collapse and carnification of the lung, and subsequently died. While this treatment in my cases of tuberculous empyema did not produce a cure, it did apparently prolong life and what is particularly striking, it demonstrated the marked bactericidal or bacteriostatic effect of the dye.

In 1922 my colleague, Dr. Robert C. Davis, treated eighteen cases of empyema with gentian violet. Fifteen of his cases were in the seropurulent and three in the encapsulated stage, and

all but one were caused by the pneumococcus, the exception being a case of streptococcic empyema. All of his patients recovered without rib resection. His results were much better than in my earlier series, due, I believe, to the fact that treatment in his patients was instituted earlier and also because his cases were mostly of pneumococcic infection and not of the virulent streptococcic type I had encountered.

During the past two years Dr. Davis and I have continued our studies on this subject. Empyema has not been so prevalent as during the influenza epidemic and it has also appeared in a less virulent form. Our results have been on the whole very good but there have also been a few failures. A summary of all of our cases shows that fifty-seven patients with empyema have been treated with gentian violet. Forty-five cleared up completely and twelve were operated upon. In all of the failures treatment was not instituted in an early stage, and this, we believe, was in part the cause of the poor results. In some instances this delay in treatment was because the condition was not diagnosed sooner. In others, the treatment was not suggested until the empyema had been present for some time and other forms of medical treatment, including frequent aspiration and irrigation with Dakin's Solution, had failed.

We cannot emphasize too strongly that this treatment, if it is to be successful, must be instituted early. If we wait until extensive adhesions or encapsulation have occurred, the problem becomes to a considerable extent a mechanical one and surgical treatment is indicated. Adhesions and encapsulation make thorough aspiration and irrigation with gentian violet very difficult. Some patients, however, even in this stage have cleared up under the gentian violet treatment but in most instances operation with a loosening up of the adhesions and drainage of the encapsulation has been necessary.

The average number of aspirations necessary in our first series of patients was fourteen. In Davis' series the number of aspirations varies in most cases from four to fourteen. In my later cases the number of aspirations has been much less, varying from three to seven.

No untoward symptoms have ever been observed following the instillation of the gentian violet. Most of the patients treated at some time have spat up some quantities of the dye. The patient should be warned in advance of this probable occurrence, or else he may be alarmed when he coughs up sputum of a deep violet color. This phenomenon shows that there is usually a connection between the pleural cavity and the bronchus and is evidence for the correctness of Moschowitz's view that empyema takes its origin from a small abscess in the pulmonary tissue which ruptures, infecting the pleural cavity and establishing communications between this cavity and the bronchus.

Gentian violet has marked advantages over most of the substances suggested for intrapleural instillation since it is practically non-irritating, non-toxic and yet highly bacteriostatic. Churchman has shown that in vitro, dilutions as high as 1 to 1,000,000 inhibit bacterial growth, and this effect is also quite marked in the pleural cavity. In one patient seen recently with a streptococcus empyema, the fluid became sterile following three instillations and in another patient with a pneumococcus empyema, the fluid was sterile after one instillation.

In our earlier cases we used a very dilute solution of 1 to 5,000 for instillation but later we have employed solutions of 1 to 500 and 1 to 250. These stronger solutions have a greater bacteriostatic effect and are apparently neither irritating nor toxic.

The question is frequently raised as to whether repeated aspirations of the pleural cavity without instillation of gentian violet would not cure empyema. In light of the experience of McCrae and of others, it seems quite probable that repeated aspirations alone, may at times clear up an empyema. The use of gentian violet, however, we believe, hastens this process and often cures patients who would not clear up under simple aspiration alone. Since gentian violet produces no bad effects and is so highly bacteriostatic, we believe its use is indicated in such patients.

One of the most important and difficult questions to decide is when to operate if operation seems necessary. Our rule has been to give the gentian violet treatment a trial for two weeks and then if the patient is not clinically improved, if the temperature has not shown a marked and progressive fall, and if the pus is not sterile, then rib resection is indicated.

Some critics of the method have suggested that our best results are obtained in patients who do not have a thick pus and are therefore not true empyemas. This criticism, we believe, is not valid. Moschowitz has shown that in empyema there are three stages: the formative stage, the acute stage and the chronic stage, which is the stage of frank pus.

Our answer to these critics is that we treat most of our patients in the formative and in the acute stage and the majority of them are cured before the stage of frank pus is reached.

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PROGRESS IN THORACIC SURGERY*

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Infection and new growths constitute the greater proportion of disease conditions amenable to surgical treatment. The thorax is perhaps as frequently the seat of such lesions as any other region of the body, but the surgical treatment of its lesions remains relatively undeveloped. The reason lies very largely in the fact that there are special problems in thoracic surgery which differ fundamentally from those of other parts. Antisepsis and anesthesia were the basic requirements for the development of surgery in general and of abdominal surgery in particular. The special problems in thoracic surgery are inherent to its structural and functional relationships. The thoracic organs are encompassed by a bony framework which make them relatively inaccessible. The thorax, in addition to containing the great vessels and important nerves, is the seat of two of the three vital organs which constitute "the tripod of life". Many of the organs of the body may be entirely dispensed with. The function of the gastrointestinal tract may be suspended for days, but to interfere with the heart or lungs even momentarily threatens life. The diagnostic difficulties are often great and the exploratory operation for the purposes of diagnosis as compared with its use in abdominal surgery is of very limited application. The technical problems involved in such operations as drainage of mediastinal or pericardial suppuration, or resection of the lung or esophagus are baffling, and special procedures involving the use of differential pressure anesthesia, or the endoscope, require expert knowledge and skill. Thoracic disease frequently reduces the patient to such a critical condition as to preclude an operation of any magnitude and in a large proportion of chronic cases the patient presents himself for surgical treatment after irreparable damage has been done. Partly due to these inherent difficulties of thoracic surgery and partly because of the absorbing interest in the less difficult, more rapidly developing and more remunerative fields, there was a general apathy with respect to thoracic surgery until the urgency of the Great War and of the streptococcus pandemic compelled consideration of its problems. The interest and impetus to the development of thoracic surgery so aroused has been largely sustained.

Even though the development of thoracic surgery has been slow, real progress has been made. Even a brief and fragmentary review of advance along fundamental lines, as well as in the treatment of specific conditions substantiates this statement. We have begun to realize the importance of prevention and of early diagnosis and efficient treatment. We have added to our knowledge of pathology of the earlier stages of disease processes during which it is still amenable to surgical treatment and we have learned to better correlate symptoms and pathology. We have established certain fundamental principles for our guidance in treatment. We are learning to appreciate the value of pre-operative preparation of the patient, such as rest, diet, postural drainage, and antiseptic solution irrigation, of the vital capacity test as a measure of the patient's condition as an operative risk and as a criterion of the results of operation. A clearer differentiation of pathological condition makes possible a better selection of operative treatment. Necropsy findings following unexpected fatalities have brought home to us the important fact that a chronic process may have damaged vital organs, particularly the heart and kidneys, far beyond any clinical manifestations of such damage and has brought

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home to us the realization of the safeguard of a several stage operation.

Among methods of treatment that have developed may be mentioned regional and differential pressure anesthesia, artificial pneumothorax collapse of the lung, phrenicotomy, extrapleural thoracoplasty, posterior extrapleural mediastinostomy, the combined thoraco-abdominal pericardiotomy and lobectomy. The military surgery of the great war brought out important methods for localization and extraction of foreign bodies in the lung, the closed method and antiseptic solution irrigation of empyema, the prevention and treatment of hemothorax, the value of combined thoraco-abdominal approach in cases of injury in the region of the diaphragm, and emphasized the extra-ordinary resistance to pneumothorax of healthy young individuals as contrasted with the appalling fatality that followed the pneumothorax incident to the small opening for drainage of an acute streptococcus empyema in the case of critically ill toxemic patients.

A brief review of present methods of treatment of the commoner thoracic disease conditions and results obtained affords specific examples of progress.

Empyema—Up to a few years ago the prevailing conception regarding the treatment of empyema could be summed up in the simple formula "rib resection and drainage". The forbidding mortality following this treatment during the streptococcus epidemic rudely shattered this complacent conception. We now recognize that early in the acute streptococcus empyema rib resection and open drainage is absolutely unjustifiable. Repeated aspiration or the closed method of drainage only are permissible in the early stages.

By the same token the closed method of drainage is indicated in a critically ill patient suffering from any type of acute empyema particularly in its incipient stage. This operation performed under local anesthesia on the patient undisturbed in his own bed, replacing a portion of the pus aspirated with normal saline or Dakin's solution, will tide over the crisis in case of patients that would not survive the ordeal of being transported to the operating room, general anesthesia, the sudden evacuation of pus and open pneumothorax. In any case of acute empyema except in the presence of a large bronchial fistula, the closed method of drainage combined with antiseptic solution irrigation, in my experience, has yielded better results than the open operation. If efficient irrigation cannot be arranged for at regular intervals of about every two hours during the day, and two or three times at night the open method of drainage combined with such irrigation as can be arranged for is preferable.

In chronic empyema we have arrived at a much clearer understanding of causation and prevention, a fuller knowledge of pathology and better methods of treatment. In a series of three hundred and ten cases at the Mayo Clinic late diagnosis, from three months to ten years after the onset of symptoms, was the chief cause of chronicity in 23 per cent. Inadequate drainage usually with respect to the length of time drainage was kept up was the chief cause in more than 50 per cent. Drainage must be kept up as long as a cavity persists and pus forms. The fact that the drainage opening has healed is in no sense an indication of healing of the empyema cavity. In many such cases the cavity will persist for months or years before the pus breaks through the chest well or into a bronchus. Foreign bodies in the cavity and fixation and fibroids of the lung are other causes of chronicity. In a small group of cases empyema will recur after years of complete healing. Such recurrence is due to a persistent infection in the thickened pleura or the recurrence of a healed bronchial fistula. In such cases through excision of the thickened pleura or obliteration of the bronchial fistula is necessary to a permanent cure.

Greatly improved results in the treatment of chronic empyema both as to conservation of structure and function as well as a much lowered mortality has followed the preliminary antiseptic solution irrigation and the several stage operation. By a combination of these methods, large cavities of long standing have been reduced from 50 to 95 per cent in capacity, thereby greatly conserving structure and function, and the mortality following operation for large cavities that have persisted has been reduced to under 2 per cent. This low mortality includes cases with tuberculosis, and those with extensive secondary damage to vital organs from the prolonged suppuration.

Tuberculous empyema are more common than is generally recognized, comprising 15 to 20 per cent of the cases that I observed at the Mayo Clinic. Open drainage does great harm to patients with a sterile tuberculous exudate whether serous or purulent, because of the secondary infection that invariably follows. Drainage alone never results in healing and the secondary infection increases greatly the difficulties of further treatment. In any case of suspected empyema giving a history of a preceding idiopathic pleurisy with effusion, of so-called "primary empyema", or in which there are other evidences of tuberculosis, the exudate should be aspirated and cul-

tured. If the exudate proves to be sterile open drainage should not be instituted. The exudate may be aspirated repeatedly to relieve mechanical embarrassment and if the exudate persistently recurs an extrapleural thoracoplasty should be done for the collapse of the cavity.

Most cases of chronic tuberculous empyema which I have observed have had the misfortune to have been drained and so secondarily infected. In such cases preliminary irrigation with saline solution, if the pleuræ are not thickened or with Dakin's or other antiseptic solution if they are thickened, followed by a several stage plastic operation, will result in a cure in practically all cases, except those with an active progressive tubercular lesion. In cases with very large cavity and complete lung collapse I have performed first a several stage extra-pleural collapse and later a resection of as much of the parietal pleura as necessary to secure complete healing.

Pulmonary suppuration—Pulmonary suppuration includes abscess and bronchiectasis and the combined lesions of abscess and bronchiectasis. Progress has been made in the studies of prevention, etiology, pathology, and in the better correlation of symptoms and lesion, resulting in the selection of operation more suited to the pathology present. In acute abscess expectant treatment, including bronchoscopic lavage, pneumothorax collapse, drainage, lobectomy and cautery extirpation, are advocated. Each has its indication but no one form of treatment is suitable to all. Expectant treatment including bronchoscopic lavage and pneumothorax collapse is indicated in cases of centrally located abscess. In these cases the nearest exit for the pus is through a large bronchus. Drainage through the chest wall is difficult and the danger of hemorrhage is great. This is the type of abscess that most frequently progresses to a spontaneous cure. In case of peripherally situated abscess a spontaneous cure may result and such cases should be treated expectantly if the symptoms and constitutional reaction is mild and the patient is improving. If there is no definite improvement during the period of a few weeks, or if the sputum is profuse and foul, and the patient is acutely ill and losing ground, drainage should be instituted at once. The nearest exit for the pus in peripherally situated abscess is through the chest wall. Drainage through the bronchus is in the great majority of cases so incomplete that chronicity rather than healing results from prolonged expectant treatment. Bronchoscopic lavage in these cases is illogical, and pneumothorax collapse is often impossible on account of adhesions. If collapse is possible and is brought about there is risk of perforation of the abscess into the pleural cavity and a resulting empyema which is always a serious complication.

In case pleural adhesions are present drainage is instituted by a single stage operation, following accurate localization of the pus with the aspirating needle. If adhesions are absent, incomplete, or in case of doubt as to the presence of adhesions, a two stage operation affords the greatest protection against infection of the pleural cavity and should be carried out unless the drainage is so urgent that the risk of empyema becomes the lesser evil. Accurate localization of the abscess and a sufficiently large window over it to allow suturing of the lung to the parietal pleura around the abscess are important to successful treatment. In order to lessen pain and to steady the chest wall so that the patient can evacuate the purulent sputum, the ribs are not resected at the first stage operation, but left in place as splints until the second operation. Suturing the lung around and under the ribs denuded of periosteum is readily performed. The abscess should be explored for secondary pockets and the drainage opening kept patent until the abscess has healed.

In chronic abscess further expectant or palliative treatment is obviously contraindicated. In these cases drainage operation should be the first step in treatment. If a well defined cavity is present, improvement will always follow drainage and a residual persistent cavity can be later obliterated by a plastic operation.

In some chronic cases repeated searching exploratory aspiration in the involved area, as localized by the physical findings and roentgenogram, will yield at most only a few drops of pus. Exploratory incision will reveal a dense sclerosis, the surfaces exposed by the incision being honeycombed by multiple abscesses and sinuses. A few such cases that have come to necropsy have shown similar findings throughout the whole involved portion of the lung. For such a condition extirpation of the diseased portion of the lung offers the only hope of a cure. A cautery lobectomy in stages, in my opinion, offers the most to these cases, but the risk of death on the table from embolus and of a fatal secondary hemorrhage must be recognized.

Bronchiectasis—The treatment of bronchiectasis has been very discouraging and has been characterized as the most thankless task in the whole domain of surgery. Drainage, bronchoscopic lavage, pneumothorax collapse, extrapleural thoracoplasty, and lobectomy have been attempted and abandoned because of the failure of these

methods to produce results or because of the high mortality following the radical types of operation. It is therefore particularly gratifying to be able to record very encouraging progress in its treatment. This progress has been the result in part of the better recognition of its varied pathology, particularly as to its distribution, and also to the selection of a several stage operation suited to the pathology present.

Bronchiectasis may be strictly localized, or diffuse with respect to one lobe or one lung, or it may be bilateral. In a series of three hundred and eighteen cases at the Mayo Clinic, it was diagnosed as unilateral in 36 per cent. Most cases first observed after years of symptoms were probably unilateral operable cases following early recognition and prompt treatment. Cases with bilateral involvement are obviously unsuited to any form of treatment, but their recognition may be a matter of a great difficulty and uncertainty. In case of some patients producing large amounts of purulent sputum the physical and roentgenological findings may fail to localize the disease or to determine whether the pus comes from one lung or the other or from both. Bronchoscopy may also leave the localization in considerable doubt. In such cases I have used a pneumothorax collapse of the lung chiefly suspected as a therapeutic test. If the symptoms clear up the case is considerable suitable for an extrapleural collapse, otherwise not.

The first consideration as to treatment is the possible presence of an etiological foreign body. Bronchoscopic removal of a foreign body in a bronchus will bring about a cure in recent cases without extensive lung involvement.

For diffuse unilateral bronchiectasis an extrapleural collapse in stages has, in my experience, proven safe and effective and this is the only operation which so far has proved both safe and effective. The operation involves the complete removal of the ribs from their articulation with the transverse process posteriorly to the costochondral junction anteriorly. Usually the third to the eleventh ribs inclusive are removed and in five or six stages. The operation is done under combined nerve block and gas-oxygen anesthesia. After the resection of the ribs posteriorly the nerves are injected under direct vision with a few drops of 95 per cent alcohol. This accomplishes a threefold purpose. It makes the convalescence relatively painless, a very important consideration in a several stage operation. The coughing is made relatively painless which is important in the prevention of post-operative retention of sputum and the consequent risk of flooding of the bronchial tract and resulting pneumonia, and the anesthesia persists throughout and beyond the time necessary for the complete resection so that the lateral and anterior resection of the ribs can be done in a relatively anesthetic field. Usually the ribs are resected first posteriorly in two stages, removing eight to ten centimeter segments. The lower lateral segments are next resected in toto, then the upper anterior and lastly the remaining upper median segments through a mid-axillary incision. The operations are done from one to two weeks apart depending on the condition of the patient.

Thirty-four patients have been operated upon during the last four years. There has been no post-operative mortality. All the patients have been relieved of symptoms, the amount of sputum decreasing from 50 to 95 per cent or more. One patient died about a year later, a case of actinomycotic bronchiectasis, not recognized as such until after the operation had been completed when sinuses developed in the chest wall. The improvement has been constant in all other cases.

There is a distinct group of cases of combined abscess and bronchiectasis which are most baffling from the standpoint of both diagnosis and treatment. The physical findings and x-ray in these cases show extensive lung involvement but it is impossible to determine what proportion of the changes are due to multiple discreet abscesses and what part to fibrotic changes or how extensive the associated bronchiectasis may be. The pleura is also often thickened in these cases, clouding the roentgenological plate and thereby further obscuring the findings or entirely blotting out all lung markings. The severity of the symptoms of suppuration and the amount and fetor of the sputum are the only criteria of the extent and gravity of the process.

The choice of treatment in these cases is very limited and the risk of any form of radical treatment is great. Lobectomy, cautery extirpation and extra-pleural collapse are the only alternatives. Most cases are in too poor condition for lobectomy. Partial cautery lobectomy involving the extirpation of the larger portion of a lung seems an almost equally formidable operation. I have performed extra-pleural collapse in (.) cases with improvement, approximating a symptomatic cure in a number of such cases.

Pulmonary Tuberculosis—Generally speaking the principle of rest in the treatment of tuberculosis is well established. In case of pulmonary tuberculosis this is achieved by collapse of the lung. If the lung is not adherent to the parietal pleural collapse is easily accomplished by artificial pneumothorax. If there are extensive adhesions the lung can be collapsed by thoracoplasty.

On consideration which has prevented the more extensive adoption of this method has been the assumption that it is not indicated if there is any definite evidence of bilateral involvement. It has been definitely shown however in some cases of bilateral involvement that a lesion and even a fair sized cavity in the opposite lung has healed following thoracoplasty. If this proves to be the rule as it has been shown to be in case of extirpation of one of two bilateral organs as for example in case of nephrectomy for bilateral renal tuberculosis, a wide field of usefulness will develop for thoracoplasty in tuberculosis.

Bronchial Fistulæ—Bronchial fistulæ secondary to empyema, abscesses or bronchiectasis complicate the treatment of the primary condition and present a special problem in the treatment of the bronchial fistula. Much progress has been made in the matter of healing the bronchial fistulas, the first essential to the cure of the primary condition. Small, single, or multiple recent fistulas complicating empyema will usually heal spontaneously, following effective drainage and irrigation of the empyema cavity. The majority of large, single, or multiple fistulas can be healed by persistent silver nitrate cautery which destroys the endothelium, permitting the formation of granulations and scar tissue contractions. Only exceptionally in my experience has it been necessary to do plastic operations such as decortication and suture of a bronchus or muscle or skin plastics.

Bronchial fistulas that discharge any considerable amount of purulent material should not be closed. This closure will result in the purulent discharge being coughed up and involves a distinct risk of brain abscess. I have lost one patient from such a complication.

Progress has also been made in the treatment of other conditions such as new growths of the chest wall, lung and esophagus, of mediastinal, pericardial, and subphrenic suppuration, of benign lesions of the esophagus, and of diaphragmatic hernia, and eventration of the diaphragm. We are beginning to realize that chondroma is a potentially malignant tumor in that it recurs, and kills. Early radical extirpation is a relatively safe and curative operation. Radical resection for early sarcoma prolongs life and has been curative in some cases. Lobectomy for malignant tumors of the lung in a few cases has resulted in a lasting cure. Resection of the thoracic esophagus and the cardia for carcinoma has been successfully performed and has resulted in at least one permanent cure. Extensive mediastinal suppuration has been generally considered to be uniformly fatal but in the last two years I have had three cases with from a half to one liter of pus in the posterior mediastinum following exploration for malignant growth that have recovered following Dakin's solution irrigation. The closed method of drainage and irrigation for suppurative pericarditis has resulted in a cure. Possibly this method may obviate the difficulty of efficient drainage of the posterior *cul de sac*. Encouraging results have followed earlier diagnosis and a two stage operation for subphrenic abscess. The silk thread and bougie dilatation technique has yielded remarkably satisfactory results in cardiospasm and cicatricial stricture of the esophagus. We are learning to better differentiate the types of diaphragmatic hernia and the type of operation suited to each. Early diagnosis and operation before strangulation has occurred, has greatly lowered the operative mortality. Lerche has recently described a new operation for eventration of the diaphragm which seems rational and feasible. Ganglionectomy for angina pectoris has been reported to have yielded favorable results. The approach to the cardiac valves as used by Cutter and the cardioscope of Allen suggests the possibility of a new field of intracardiac surgery. The Trendelenberg operation for removing a pulmonary embolus has been successfully performed.

It may be said, therefore, that although progress in thoracic surgery is beset with special difficulties and although this field remains relatively undeveloped substantial progress is being made and what has already been accomplished together with the awakened interest in this field of surgery may be confidently expected to furnish the impetus to more rapid and important advance in the near future.

THE ART OF MEDICINE*

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Tradition and idealism are two factors which rob any form of work of its monotonous drudgery. The exactions of the practice of medicine are probably unparalleled by any other profession or vocation. It therefore behooves us to indulge, occasionally, in a little flight of sentiment, during which we recount the virtues and achievements of our profession, and pay reverential respect to those who have established these virtues and attained these achievements.

I have never applied my mind and hand to a more grateful task than the one which is now before me. As I ponder over the personal traits

*Read before the Polk County Medical Society.

which collectively constitute the art of medicine I picture to myself the triumph of Pasteur over rabies; of a Lord Lister over a sepsis; of a Morton over surgical pain; of Banting, Best & Macleod over diabetic coma; and the general practitioner over the grueling hardships of country practice. Fundamentally, all of these men possessed the most essential elements of the art of medicine, viz.; a love of humanity and a desire to relieve some of its physical distress.

A critical scrutiny of the conduct of successful practicing physicians probably affords us the most abundant source from which to gather the data concerning the practical artful application of the science of medicine. I shall therefore crave your indulgence from time to time, as I make use of personal observations to illustrate the various features which I shall attempt to emphasize.

An esteemed member of the local medical profession, who has recently retired from active practice, has always endeavored to impress upon the minds of the younger physicians the value and necessity of paying just as much attention to the art of medicine as to the science thereof, and his own professional conduct, serving as it has to make him master of this art, has given to him a degree of popularity and success seldom exceeded by any physician.

Since entering the practice of medicine in this community twenty-three years ago, it has been my opportunity and privilege to closely observe the behavior and methods of the physicians who preceded me, and to study the building up process as it has gone on among the younger men, and from these observations I have drawn one conclusion, and that is, that any degree of success always bespeaks the existence of some form of ability. Look about you and pick, if you choose, your most bitter professional enemy and, just for the sport of the thing, allow your judicial faculties to dominate your prejudices and you will find, much to your surprise, that the very qualities in him which cause your antagonism and which enable him occasionally to "beat you to it" are, after all, the expression of some type of ability. Even the quack doctor can give us pointers on the reading of human nature, and the chiropractor can give us "cards and spades" on business methods. If the ne'er-do-well disgruntled citizens who spend so much time in muck-raking would use one-third of that time in making a careful study of the traits which make their hated rivals successful, we would have many more prosperous farmers, laborers, and physicians and there would be no need for socialistic calamity howling.

There is in all probability no vocation in life which calls so insistently for artful pursuance as does the practice of medicine. You may eat cornmeal mush and care nothing about the personality of the farmer who raised the corn. His finger nails may have been grimy and he may have displayed tobacco juice on his hickory shirt front when he planted or picked the corn, yet it means nothing to you when you eat the mush, but when your stomach is a little touchy and your nerves are a little on edge, it is a very important matter how the physician talks, looks, and what sort of an aroma he carries about him when he calls upon you. The first five minutes of social contact between a physician and his patient usually spell confidence or distrust for the patient; success or failure for the physician. Any man with a good mind can acquire a working knowledge of the science of medicine, but not every man is endowed with a pleasing presence and a successful approach. It is needless for me to elaborate in this loose manner upon the personality traits which make a physician a success or a failure in the practice of medicine, but I would like to reduce the art of medicine to a critical analysis and let logic lead us where it will.

In the first place, what is a physician and what is his function? For the purpose of this analysis we may say that a physician is a practitioner of the healing art. Life is the sum of those forces which resist death. All forms of life wage a constant battle against the invasion of destructive forces. To this rule the life of the human race is no exception. The physician is therefore a general who marshals various defensive and remedial forces against the invading hoards which jeopardize the safety of the human race. If the human race were on a mental plane with the cattle and swine of the fields, the science of medicine would be all that a physician would need, but when the process of evolution lifted us to a level of refined sensibilities and aesthetic discriminations, the necessity for psychic management became apparent, therefore the physician must be able not only to understand and alter the functions of the human machine, but must be qualified to handle the mind that drives the machine as well. If riding in an auto driven by a maniac, there is little comfort afforded a passenger by knowing that the steering gear is sound and functioning properly and that the brakes are in perfect working condition, especially if the driver has a delusion that the auto is an aeroplane and can jump ditches and loop the loop with safety. Many a good human machine has been wrecked by an unbalanced mind. The physician then finds that knowing and treating the body is

frequently the smallest part of his work. He must needs therefore study the human mind, both with respect to its normal and its abnormal activities.

If we know the normal, it is not hard to recognize the abnormal. The art of medicine has much to do with an accurate knowledge of the human mind and with a skillful management thereof. In other words, he who knows not human nature cannot be possessed of the art of medicine. What does human nature want in this world anyway?

First—It wants to avoid death.

Second—It wants to be fed.

Third—It wants to reproduce its kind.

Fourth—It wants supremacy over its associates.

Those of you who are students of psychology and biology will recognize in the four wants just mentioned the three fundamental biological instincts—fear, sex and ego, this biological psychic trinity being amalgamated in the Godhead—self-preservation.

The art of medicine consists very largely in recognizing the above primitive instincts and at the same time making your patients feel that they are living on an intellectual and ethical plane high above the lusts of the flesh. Even the woman of the underworld retains a vestage of that defense reaction which we call modesty, and not infrequently she is more exacting in her demands for its observance than is the woman of chastity. Camouflage may be wrong and deceitful but woe unto him who practices medicine without some of it. A criminal is presumed to be innocent until proven guilty, and a physician should presume that a woman is refined and chaste until he proves her otherwise, and when he does, it then all the more behooves him to make her think that he still believes her a lady.

It is no disgrace to have the self-perpetuating instincts of the animal, but we can never attain to a high state of civilization until we become broad minded enough to comprehend the fact that the primitive instincts are the motive power which, when properly restrained and directed, lead to true intellectual and social advancement. Unbridled sex instinct, unsuppressed desire for class or mob supremacy, and unrestrained fear point unerringly to social retrogression and not to progression. The political dangers of today rest in this atavistic tendency. Some statesmen have become dangerous demagogues. The Titian has awakened in the breasts of the industrial workers and the mal-contents of political parties have recently manifested a tendency to become mobs. Civilization is as civilization does, and is not as it proclaims itself to be. True civilization cannot be born save through the pain and travail of self-abnegation and the suppression of primitive instincts. He who would save his life ethically must loose it, in a measure, biologically.

A glimpse at idealistic social attainments should not deter us as physicians from recognizing the true natures of our patients. Let us give them credit for their ideals, but understand them as ethically veneered animals, who above all things fear death; who are jealous of their ability to procreate; who fear being deprived of the necessities which maintain life and who fear encroachment upon their latitude of self-advancement and self-expression.

Let us now lay down, as being fairly well established, the fact that a physician cannot possess the art of medicine without a knowledge of the conflicts which are waged between primitivism and idealism in the minds of his patients. Knowledge of this sort helps him to understand the patient's fears, hopes, ambitions and self-accusatory disillusionments. Having such knowledge, wherein yet lies the remainder of the art of medicine? This may be answered as follows. After a physician understands people, the art of medicine consists of a pleasing, satisfactory adaptation of medical practice to the peculiar needs and demands of the people in a given locality.

Since the science of medicine will take care of organic diseases, the art of medicine must primarily subserve four functions. It must enable the practitioner to get a chance to apply his science (get him patients): It must enable him to hold his patients: It must enable him to psychically supplement the virtues of his physical therapy and not infrequently its application must constitute the whole treatment.

What traits of personality secure for the physician a satisfactory clientele? In order of their importance I would name the following: (1) Sociability; (2) Publicity; (3) Poise; (4) Self-confidence; (5) Personal presence and appearance.

When I speak of sociability I do not mean that a physician must be a society man, but I do mean that at every turn of the road he must meet people more than half way. Churches, lodges, clubs, etc., are all right in their places, but a smile and a name remembered and spoken, together with an inquiry about the baby's first tooth, admit one to a human brotherhood that has the Shrine and the K. K. K. beaten to death for business getting.

Publicity—I speak the term in a whisper lest some one take offense. Medical ethics forbid advertising, which is undoubtedly right, but there may be such a thing as hiding our medical light

under a bushel. To come out in the papers and advertise as a great specialist who sure-cures a long list of ailments is one thing, while making dignified popular scientific talks on medical subjects is quite another. Years ago my father, a Presbyterian divine, said to me, "Son, don't use your church affiliations to get business, but there is no harm in using the business that comes to you through church affiliations." This idea may be applied to publicity. Don't make scientific speeches or write scientific articles for publication unless by so doing you really benefit the public and the cause of medical publicity, but there is no harm if the world comes to know who you are through the association of your name with worthy scientific propaganda. The great art of professional publicity is to be found in getting your name before the public in such a way as to be known as a patron of, or promoter of, some worthy public cause, be that cause charitable, religious, social, or educational. The man who would successfully profit by this type of publicity should learn early in his career to finesse the "I". There are many avenues of legitimate publicity. After all, publicity simply means—known by the public. I can remember in my early years of practice how a much beloved physician always had a travel article published in one of the daily papers on his return from his prolonged vacation trips. They were "good stuff" both for the people and for the doctor. The public was entertained and the doctor was advertised and it was all done in a dignified manner and no one was hurt by it. This doctor had enemies who turned up their noses, but everyone who turned up his nose should have profited by Doctor P's shrewdness.

During the early days of automobiles Dr. G. drove a "red devil" of an automobile. He wore his hair long and he drove the machine up to speed capacity. The wind blew his hair out behind and if the artist who conceived the picture entitled "The Forecast of Coming Events" had seen Dr. G. pursuing his comet-like course through the village streets, I am sure the stork would never have been in the cast. Now Dr. G. hurt no one by these eccentricities and he did make himself noticed. If public interest flagged at any time, he proceeded to have his automobile roll him down an embankment.

During this same medical publicity epoch, Dr. G. R. possessed a handsome coupe and coachman and was the most indefatigable reader I ever knew. He simply had no time to read at home or in the office so he read in public as his coupe bumped over the stony way. Now Dr. G. R. did no harm. He violated none of the laws of medical ethics and incidentally the people said, "My, that Dr. G. R. must be busy and he must be a student, because he even reads while he is riding from one home to another."

I have not mentioned these instances in a spirit of criticism, nor wholly for the purpose of affording amusement, but largely for the purpose of illustrating various innoxious methods of bringing about publicity.

Poise is an exceedingly important factor in the medical art. A rattle brained physician subjects himself to severe ridicule and criticism. In the paraphrased words of another, to be smiling when everyone else is angry; to be alert when everyone else is stupid; to be calm when everyone else is excited and to be self-confident when everyone doubts you, constitutes poise. Look about you and find the physician who has poise and you will probably also find a successful practitioner.

Self-confidence and poise are so closely related that the subject demands little elaboration. Here must be interjected a note of warning. There is a vast difference between self-confidence and bravado. Bravado is only the defense reaction for a feeling of inferiority, while self-confidence indicates an ability to command one's mental resources in a time of emergency.

The personal appearance and general presence of a physician constitute part of his art. Three-fourths of our medical clientele is made up of women and women like to see a well groomed man. The intellectual woman may pierce the vapor circle of a physician's foul breath and detect his intellect and scientific acumen shining like lamps in a London fog, but even her aesthetic sensibilities may revolt and lead her to seek a lesser scientific luminary whom she may safely approach without sounding her fog signals. A physician's dirty fingernails may remind the philosophical patient that we are all common clay, but philosophy is easily broken down when those fingers are introduced into the buccal dispensary of philosophical dicta. The Ladies Home Journal and other magazines which fall into the hands of women display carefully worded paragraphs which tell of how some beautiful woman is studiously avoided by her male associates and how unhappy she is until she learns of the virtues of Nonspi. Would that some physicians might add deodorants to their other artful blandishments. Proper attire and a well policed body give a person self-confidence and comfort and are splendid embellishments for a kind heart, sparkling wit, and scientific ability.

With the foregoing I have partially covered the phases of the art of medicine which help the physician to get business. I now come to the consid-

eration of the art of holding business. Here another set of personal traits upon the part of the physician come into play. To hold patients, the physician must be possessed of, in addition to scientific ability: (1) Dependability; (2) Kindness; (3) Sympathy; (4) Generosity; (5) Honesty; (6) Resourcefulness; (7) Tact.

A physician cannot last in a family if he has not proven himself faithful in attending to the family needs and in protecting their interests. Lasting loyalty is founded on lasting faith, and lasting faith is only inspired by constancy and dependability.

Kindness—Ah! here is the key note of medical art. Kindness is the one trait which, when possessed by the physician, can make up for a multitude of artful deficiencies. Clumsy hands in kindly service become gentle. A kindly smile beaming through an unkempt beard is like sunrise in the cane-brake. A kindly sentiment crudely expressed is like a drink of crystal spring water from an iron dipper. Kindly silence is frequently resonant in its expression of sympathy. Kindness cannot be assumed or imitated. It eminates alone from love.

Sympathy is one of the outgrowths of kindness. It is a specialized form of kindness. To be explicit, it is sensory kindness. Smypathy feels the thing that hurts the other fellow. Sympathy is the soft, harmonious response of one soul which has been attuned by grief to the painful touch of another's adversity.

Generosity is an essential factor in kindness and does not mean the giving of money only. It means the giving of time and advice. Also a giving of the benefit of the doubt. A generous physician will give freely of himself for the benefit of his patients, and when I speak of giving himself I am simply speaking of self-sacrifice. It is foolish for a physician to allow himself to be imposed upon either in a financial way or otherwise, yet he must not be stingy with his time and service. It is a noteworthy fact that a physician who allows himself to be dictated to by his patients is soon looked down upon. There is no half way place in the association between doctor and patient. One or the other must be in the saddle and no popularity or prestige is gained by letting the patient "ride" you. The physician in asserting his authority does not have to do it in an objectionable, antagonistic manner, but he should ponder well what he exacts and after exacting the same he should stand pat. In the matter of generosity simply apply the golden rule and you will have no trouble.

Honesty is not only a part of the Art of Medicine but it is the chief factor in the art of living. The calling of a physician is an exalted one. Of him who hath much shall much be required. If the people cannot depend upon the honesty of the doctor, in God's name, what can they depend upon? The family physician, the specialist, and the surgeon frequently hold in their hands the key to the patient's life terrestrial or celestial. The life of a bread winner or a mother of a large family frequently hangs in the balance. Can the physician betray such a trust? Some do. An unwarranted surgical operation, neglect, a desire to keep a consultant out of the case, and an attempt to cover up some error in treatment are the commonest ways in which medical dishonesty is revealed. The pseudo-surgeon who is trying to get a big following and make a big showing in a hospital, is apt to see a possible operation in every case that comes to him. This surgical mania is sometimes due to deliberate dishonesty, sometimes to ignorance, and sometimes to an exaggerated notion of the efficacy of surgery. But when you examine three patients in one week, as I have done, and find nothing about them requiring surgical treatment and then find that all three have been told by the same surgical aspirant that they must go to the hospital at once for a major operation, you begin to doubt that surgical aspirant's honesty. We have come to a pretty pass when we tolerate this type of human sacrifice to the gods of avarice and ego. It takes a long time to establish a reputation for honesty, but when such a reputation has been established it becomes one of the basic constituents of the art of medicine and is the steel cable that moors the physician's clientele to him.

Adaptability is very essential to the medical art. To be adaptable one must be resourceful. Resourcefulness is partly a natural attribute and partly an acquired one. To be resourceful one must not only have a quick apperception, but must have profited by considerable experience. The physician should not scorn any form of knowledge. The more you know and the more things you know about, the better, because knowledge makes one resourceful, but do not forget that many people who know much are not at all resourceful because they are not naturally endowed with the ability to utilize their knowledge. It will avail little when lost in the mountains to know that streams run down hill and that people live near streams, if you become so panic stricken that you can neither recall nor put into practice what you know. Resourcefulness then is partly born in the physician and partly acquired. If he already has it, he can greatly increase it by the acquisition of a large fund of general information.

Tact is a personal attribute which I do not believe can be acquired. It is the oil which keeps all forms of social machinery running smoothly. I have already referred to sympathy as being sensory kindness. Let me here say that tact is motor kindness. Tact is that ability which enables one who feels for the other fellow to act and speak in such a manner as to make him the most comfortable. The man who accidentally bumped into the bathroom where a lady was taking a bath and was quick witted enough to say, "Pardon me, Sir" had the right idea of tact. Tact makes people comfortable in your presence. The tactful physician does not frighten his patients, therefore they do not hesitate to consult him or recommend him to their friends.

Thus far I have attempted to outline the elements in the art of medicine which get business and hold it. I now wish to speak of the power of suggestion and its relationship to medicine. The human mind, in spite of civilization and culture, is still primitively mystical, as evidenced by the gullibility of even the most enlightened. The Christian Scientist, clairvoyant and chiropractor live upon the credibility of these people. It is a very nice point of discrimination as to just how far we are justified in using intrinsically inert measures for their psychic effect. Personally I can see no harm in utilizing any harmless measure for the cure of disease, if we do not make unwarranted claims for the efficacy of the treatment. All of the "pathys" and "isms" do some patients good in a psychic manner, but the quackish part of such things comes in when the cause of the malady is misstated in order to prove that a given method of treatment is rational. I have frequently resorted to some spectacular line of treatment for its psychic effect and have simply stated to the patients that I believed the treatment would do them great good and have allowed their imagination to do the rest. In resorting to any kind of treatment it is well to make it a dignified procedure no matter what its physical effect may be. All due credit to our good homeopathic friends, whatever the effect of their medicines may have been, the half-hourly alternating doses of number one and number two have had much to do with the potency of the remedies administered. In order to be artful in treatment then, the physician should dignify his treatment, and by word, demeanor, or implication lead the patient to look for results.

In some cases psychic treatment becomes the physician's entire mode of attack. Psychic treatment does not necessarily consist of an ultra-scientific, psycho-analytic seance conducted by a trained psychiatrist. Any influence brought to bear upon the mind of a patient which relieves mental or physical morbidity is psychic treatment. The most valuable approach to psychic treatment is a confession made by the patient. I think it is safe to say that two-thirds of our psycho-neurotic patients are never understood. A master of the healing art will usually be found to be an admirable Father Confessor. Patients do not readily reveal their painful secrets and the skeletons in their closets to rattle brained, poorly poised physicians. The fanatical physician also closes up their well-spring of confidence. To be a good confessor the physician must be experienced, wise, tolerant, broad-minded and sympathetic, without religious or sentimental scotomata or astigmatism, and he must be possessed of "charity for all and malice toward none" if he would learn just what morbid ideas are responsible for some of his patient's symptoms.

After receiving a patient's confession it then becomes a part of the physician's art to give corrective advice. No hard and fast rules can be laid down for such a thing. Each case is a law unto itself, and the results of such advice depend largely upon the wisdom of the advisor. I can only say that here the physician's responsibility is great. Clean advice can only come from a clean mind; calm advice from a calm mind; just advice from a just mind; and constructive advice from a constructive mind. Thus you may become easily impressed with the necessity for a physician, who would be artful in medicine, to possess a broad education, a broad experience and high ideals. We may scoff at tradition; we may shun sentimentalism and we may make a business out of the practice of medicine, but no physician will ever get a real thrill out of his work who does not become proficient in the art of medicine and the art of living.

In concluding this homely declaration of my ideas concerning the artful attributes of a successful medical practitioner I would like to be accorded your indulgence while I relate two incidents which truthfully and graphically reveal the innate kind heartedness of two physicians, the kindly ministrations of whom may be considered characteristic of the humanitarian attitude of the medical profession at large.

* * * * * *

He was a short, thick set, grizzly old chap with stooped shoulders and rotund abdomen. His blue eyes keenly scrutinized you from behind shaggy eye brows, and at times his stern face seemed repellent. His hands, which had busied themselves for over forty years in deeds of mercy, had grown gnarled and clumsy, yet to know him intimately dissipated all thoughts of a gross ex-

terior. Such a man was Dr. H., railway surgeon, general surgeon, Civil War surgeon, general medical practitioner and kind hearted gentleman.

One day I had reason to visit the doctor's office, and I happened to be there on one of those rare occasions when he was not busy. The office clerk had gone out to lunch and I found the door of the inner office open. Partially as a joke and partially as the result of uncertainty I entered the inner office very quietly, and as I did so, I noticed the old doctor standing in a far corner with his back to the door. He was stooping over, industriously pawing around in a yellow paper sack, much as a rogue bear would paw around in a garbage barrel, and all the while he was chuckling quietly to himself. At this point I cleared my throat to announce my presence. The old doctor turned himself about and a sheepish grin o'er spread his face.

"What on earth are you doing Doctor?" said I.

His grin broadened into a smile, the smile became vocal and the little old fellow laughed until his sides shook.

"Well! Doctor you caught me this time" said he, "So I suppose I might as well tell you the story. I have a poor little cripple girl down south of the railroad tracks, who has no one to bring any pleasure or sunshine into her life; no one to buy her such trinkets as please little girls of her age. As I walked down the street this morning I noticed a lot of little artificial Easter chicks in the shop windows and it just popped into my mind that this little girl would probably have no one to buy her any, so when I got to the office I just sent my clerk out to buy two or three so I could take them down to her this evening, and I was just having a lot of fun thinking how pleased she would be."

This old doctor has gone to his reward and is forgotten by many, but I know of at least one person who has been made a better man by having been permitted to know of this kind act. I pass it on to my readers because every "good deed in a naughty world" glorifies and sweetens our outlook on life.

The second incident which I shall relate illustrates the fact that kindness is not only a glorifying influence but is not infrequently rewarded in a very substantial manner.

* * * * * *

It was a night of bitter cold and the drifted snow had blocked the country roads against automobile travel. The frost, in designs of filmy lace or pearl white brocade, had richly curtained the windows of rich and poor. From the windows of a modest cottage in a little Iowa town, the mellow light of a reading lamp struggled forth, cutting the inky blackness of the night. Seated beneath the lamp, with his feet upon the fender of a huge hard coal burner, was Doctor M., calmly reading. The smoke from a partially unfurled five cent cigar wreathing his head with a fragrant, murkey halo.

Could you have been a silent, invisible observer of this scene of homely content you would probably have decided that Doctor M. was an ordinary looking man of the type of which the ranks of humanity are largely made up. You would have observed little about him which would have led you to suspect that he might become the hero of this or any other story or anecdote, but the story of the commonplace, when properly told, not infrequently excels in touches of heroism and pathos those inspired by conquests of the sea and gallantry of the battle field. Doctor M. was, and is (for he still lives), a common, honest, faithful, intelligent, country practitioner, who has never made any pretentions to greatness, who prizes the privilege of being a common man, who is honest to a fault, and who has faithfully applied his intelligence to the task of kindly deeds and the aleviation of human suffering.

On the night in question, as the doctor sat thus peacefully oblivious to the rigors of the cold without, the strident clamor of the telephone suddenly broke in upon his consciousness and with a sigh of regret and possibly a mild orthodox cuss-word, he laid down his paper and ambled over to the phone.

"Hello! This is Doctor M.—Oh! hello John. What's the trouble?—It's the wife is it?—Say John, how are the roads? Drifted full eh?—Well wouldn't that beat you. Well! there's no chance of my getting out there in 'Henry' and there isn't a livery horse to be had in town.—Well John, if the woman needs me I'll get there some how, so tell her to sit tight and I will come if I have to make it a-foot", which in point of fact he had to do, covering a distance of five miles through drifts waist deep in a temperature that hugged zero.

After two hours of soul-trying travel a very much exhausted and short winded doctor arrived at the home of his patient and found that his services were required to guide a little voyager into a bleak and snow-bound world. Just as the sky began to pale in the east a soulful wail announced the expected arrival.

As the doctor packed his instruments into his bag preparatory to leaving, his eye took in the poverty of his surroundings, and he no doubt wondered why those least prepared to care for them always seem to have the largest number of children, and being human, he probably wondered

whether he would ever receive any remuneration for his strenuous night's work.

On his way home the doctor met one of the farm hands employed by the Widow B., who lived in the neighborhood, who sang out, "Hello Doc! Who's sick down to John's?" "Oh!" said Doc, "John's just got a new boy. Everybody doing fine."

On arriving home Dr. M. found two or three calls awaiting him, and after a hasty breakfast, started out as usual, never considering the fact that he had slept none the night before. The incident was closed, it being only one incident of the many that make up the life work of a country practitioner.

The snow drifts melted. The spring rains came. Roads that had been blocked by snow drifts became impassible because of mud. The pussywillows thrust their fur clad noses from crevices in the willow twigs, and the robins called to each other in the woodland pasture.

The Widow B., who lived out by John's fell ill and sent for Doctor M. Being aged and afflicted with an incurable illness, the doctor had to make many visits, and what had previously been a casual professional acquaintance between the two blossomed into a sincere friendship.

"Doctor", said the Widow B. one morning as the doctor sat by her bedside, "Isn't it an awful bore to you to have to come so often to see an old lady like me whom you cannot cure?"

"No", replied the doctor. "It is not a bore. I am glad to come. My only regret is that I cannot do more for you. The nicest things that I know of in this world are babies and nice old ladies, and I like to visit both."

From the mouths of some physicians such words might have been considered flattery and insincere, but to those of us who know and love Dr. M. these words will be recognized as pregnant with sincerity, and were so accepted by the Widow B.

The Widow B., though she lived in a modest home, was the possessor of several hundred acres of valuable land and not a few thousand dollars stood to her credit in moneys and securities in a local bank. One day when the doctor was making his regular call upon her she said, "Doctor, I realize that I will probably never get well and I want to make a will. Will you please ask my banker to come out with you the next time you come? I want him to make my will and I want you as one of the witnesses to it."

Accordingly, a day or two later the banker accompanied the doctor to Widow B's. home and proceeded to draw up the will. After having indicated all the other provisions of the instrument, the same having been set down in writing, the old lady turned to the doctor and said, "And now Doctor I feel that I want to do something for you."

"Why should you do anything for me?" said Dr. M. "I have done nothing for you that I have not been paid for. You owe me nothing."

"Well", said she, "I have my reasons. You do much for others for which you get no pay. You have a hard time to collect your bills and besides there are other good reasons that I know of why I should do this."

Turning to the banker she hesitated a moment and then her face brightened with decision. "No! I am not going to put it in my will. Things might get mixed up somehow after I am gone. Hand me my check book."

Forthwith she wrote her check in favor of Dr. M. for one thousand "iron boys" and in the lower left hand corner she wrote "A gift to Dr. M." Not being a witness of the scene, and the story having been told me in a modest manner by the doctor himself, I cannot correctly or adequately describe the waves of emotion which were depicted upon the doctor's face, but the doctor did say that his banker friend was so pleased for him that he trembled all over.

A day or so after receiving the gift Doctor M. met a son of Widow B. and, fearing that the heirs might think that he had unduly influenced the old lady, he frankly told him all of the circumstances pertaining to the gift. The son laughed and said, "Well Doc.! I'm glad she did it and I think I can tell you one of the principal things that prompted her to do it. Do you remember the winter night that you walked all the way out to doctor poor old John's woman? Well, Mother heard about that and I think she made up her mind that it was mighty white of you to take care of poor folks like that and so she calculated to do something for you that would help out a bit on some of the cases you don't get any pay for."

This interesting story was told me by the doctor himself as we sat in the rotunda of a hospital in a neighboring city. As the tale was unfolded the doctor's eyes filled with tears and I had a funny desire to blow my nose myself. I was so rejoiced over his good fortune that I made the doctor tell the story to several of my colleagues and it was darned funny that one after another they all seemed to get sudden colds in their noses at about the same part of the story.

The spirit of Doctor William McClure of the Bonny Briar Bush still lives in the hearts and souls of many a good physician and God forbid

that the financial exigencies of a complicated social environment ever stamp this spirit of altruism out of the medical profession. The thousand dollar gift of the Widow B. was a material blessing to my friend Doctor M. but far and above all was the priceless thing for which it stood—appreciation.

HEAD INJURIES*

Francis R. Holbrook, M.D., Des Moines

In the past injuries to the head have been badly managed and this mismanagement has been accurately reflected in the results obtained.

There are two reasons for this unsatisfactory situation, first: we have focused our attention on the condition of the skull, utterly ignoring the condition of the skull contents. Second: we have recognized the presence of intra-cranial trauma but have failed to do anything to relieve it.

The first of these reasons can be dismissed with the statement that a fracture of the skull, unless it is a depressed fracture of the vault is a matter of distinctly secondary importance. The question of paramount importance in every case of head injury, is not the status of the skull, but the condition of the brain and its appendages.

Passing to the second cause for our lack of success in the management of these cases, we can say, that the thing which has retarded intelligent treatment of intra-cranial injury has been the old classification of cerebral trauma into concussion, contusion and compression. In the light of more recently determined pathology of the brain and as a result of experiments of physiologists, this classification must now be discarded.

It is now conceded, that in the great majority of cases of injury to the brain contents, we are dealing with the problem of intra-cranial pressure.

The train of clinical symptoms commonly observed in these cases, is due to disturbances within the skull cavity, resulting in an increase of the pressure. The basis of intra-cranial pressure is the cerebrospinal fluid. This fluid has a definite circulation.

It arises in the choroid plexus of the lateral ventricles, passes to the third ventricle, thence to the fourth ventricle and then to the cisterns at the base of the brain. From these it passes up through the sub-arachnoid spaces of the brain and is absorbed into the dural sinuses.

The sub-arachnoid spaces of the brain and spinal cord are continuous, hence the fluid readily finds its way into the latter spaces. Anything that causes obstruction to the normal circulation of the cerebrospinal fluid, results in an increase in intra-cranial pressure, because the secretion of the fluid in the choroid plexus goes steadily on and if it cannot circulate its normal place of accumulation is in the basal cisterns. Accumulation beyond a certain point here results in pressure on the medulla and eventually the pressure is sufficient to cause death.

These anatomical and physiological facts, give us a rational basis on which to formulate our treatment. First of all, we must determine in all cases whether we are dealing with an increased pressure.

This is ascertained by doing lumbar puncture and with the aid of a mercury manometer attached to the spinal needle, reading the pressure in the spinal canal.

If this be above normal, removal of some of the fluid is indicated, from 5 to 10 or 15 c.c., and another reading is made in a few hours. More fluid is withdrawn at this reading if indicated. Repeated readings are made until it is certain that the pressure is not increasing.

It is fundamental that an increase in intra-cranial pressure must be discovered early, hence lumbar puncture with reading of the pressure should be a routine measure in all cases. If we wait until we have the clinical symptoms of pressure, such as slow pulse, stertorous respiration, coma we have lost our chance to be of any real help to our patient and death will promptly ensue.

Spinal drainage has practically supplanted the operation of cranial decompression as a remedial measure in head injuries. Decompression operations are now done for the most part only when localizing symptoms are present.

The same surgical rules apply to the treatment of shock in head cases as to any other surgical condition, nothing is to be done until the shock has passed.

Every depressed fracture of the vault is to be operated upon as soon as an operation can be undertaken. It can frequently be done in a few minutes without any anesthesia.

If localizing symptoms of pressure develop, then craniotomy must be done. Localized symptoms of pressure are the result of one of two causes, as a rule, either depressed bone or extra-dural clot: the latter most commonly the result of a torn middle meningeal artery.

*Abstract of a paper read before the Polk County Medical Society at its meeting in September, 1924.

VINCENT'S ANGINA DEVELOPING DURING TIME NEOARSPHENAMINE WAS BEING ADMINISTERED INTRAVENOUSLY IN TWO KNOWN CASES OF LUETIC INFECTION AND IN ONE CASE DIAGNOSED SYPHILIS FROM CLINICAL SYMPTOMS

ROBERT EMMET JAMESON, M.D., Davenport

1. Male, laborer, age thirty-seven, married, had a 4-plus blood Wassermann. Was given intravenous injections of neoarsphenamine. Had had four injections, after fourth injection patient did not call at the physician's office on the appointed day or time for his treatment. He did call about ten days after the last intravenous injection complaining of a severe sore throat and said he had been ill for several days, which had been troubling him since the third or fourth day following the intravenous injection of neoarsphenamine, the attending physician had a culture made also an examination (microscopic) and the report was that the patient had Vincent's angina. The patient showed every evidence of being a very sick person and he was advised by his attending physician to go to the hospital which he did that evening, and local applications of neoarsphenamine was administered every two hours day and night, also intravenous injections, two were administered. The patient gradually grew worse and died on the fifth day after entering the hospital.

2. Case, Mr. O. G. H., laborer, single, chief complaint sore on penis (chancre), exposed to possible venereal infection two and four weeks previous to the time sore appeared on penis. History and clinical evidence with Wassermann blood test which was reported 4-plus, lead to the diagnosis of luetic infection. Patient advised to begin treatment immediately which he did and 0.3 neoarsphenamine was administered intravenously. The patient had two more intravenous injections of 0.6 neoarsphenamine at weekly intervals; after third injection the patient called on the day he was to have his fourth intravenous injection and asked to be excused from treatment, saying he had been feeling badly for the past five days, which had begun second day after intravenous salvarsan, his chief complaint was sore throat, and examination was made, this patient was found to have Vincent's angina. Local applications were applied and in three days the patient was relieved of the symptoms and no further trouble complained of; he also continued his antiluetic treatment.

3. A young man had been treated by his family physician for about two or three weeks for sore throat, which did not respond to treatment as the attending physician had hoped it would, the patient was referred to me for treatment due to the fact that the left tonsil had a sore. When I examined the patient with his past history I suspected a luetic infection, and chancre of the tonsil. A blood test was made, the patient was found to have a negative Wassermann, and a second specimen of blood was taken and Wassermann test made which also was reported negative. I was still under the impression that it was a syphilitic infection and advised antisyphilitic treatment; he agreed, and same was begun. First a 0.3 neoarsphenamine intravenous was administered and he was to have weekly intravenous injections. On the second visit to my office he said his throat felt much improved and after second intravenous injection of neoarsphenamine 0.6 that he felt perfectly well. He had in all six intravenous injections. After the sixth intravenous injection the patient did not return for treatment until sometime after the day set for his regular treatment. He called, however, and said his reason for not coming sooner was that he had again developed a sore throat and had been to see another physician who said he did not have syphilis, but did have Vincent's angina, and the patient was rather put out because I told him I suspected a luetic infection. However he continued treatment for Vincent's angina and I believe was cured of that, for I did not see him again.

4. I have learned from other physicians that they have had similar experiences and with this in mind is my reason for reporting these cases, hoping that other physicians in the state who have had similar experiences will also report their cases of patients who have had known syphilitic infections, and were under neoarsphenamine treatment when they developed Vincent's angina. I am sure the columns of the Iowa State Medical Journal will publish such cases so that we may all have the benefit of each case report.

STATE MEDICAL HISTORY

No more interesting history than an accurate account of the lives of physicians in this state, from early times down to the present. Merely as a matter of interesting literature, the story would be well worth telling and well worth putting into permanent record. Aside from this, however, the history of medicine in this state should be compiled and preserved as a record of a great profession for the sake of history itself.

—Rhode Island Medical Journal.

The Journal of the Iowa State Medical Society

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LIFE INSURANCE WITHOUT MEDICAL EXAMINATION

Life insurance has become a very great business, has acquired a vast experience and is in a position to take up some apparently radical methods. It has been a tradition that the only safe risk for life insurance was based on a medical examination, and some states require it by law, as Illinois and New York. As far back as 1902 some British and Canadian companies began to write unexamined risks. The Sun Life of London began in 1902, at an increased rate and we are informed that now the status has so improved, that the cost of the unexamined is the same as the examined.

The Aetna Life Insurance Company announced in September that thereafter on business examined within two years, additional insurance up to $10,000 would be issued without medical examination. The Travelers and Connecticut General have been setting aside one month a year during which time this privilege was available to certain schedules. It appears to have been a short experimental period. The Prudential very shortly offered on industrial policies, in writing twenty year endowment policies up to $2,000, without medical examination. This is interpreted by the insurance press to indicate a general movement towards unexamined business.

It has been asserted that this sentiment has grown out of the fact that the physicians' findings and conclusions have been the most uncertain element in the business as a business. This is the feeling among executives in the field work. As remarks the California and Western Medicine editorially:

> With all the statistical and actuarial data that have accumulated through the years, it should be about as easy to estimate the hazards of life and thus fix a safe premium rate without a medical examination as it is with one. Therefore, when considered purely from an investment standpoint, it undoubtedly would be easy to fix a profitable premium rate without a medical examination. The rate would, however, per force be a higher one.

There is an important factor which may aid the insurance companies in the matter of risks. Many important insurance companies have developed a medical, nursing, hospital and welfare service departments of their own, for the benefit of their policyholders and through this agency may remedy some of the defects which impair the risks as determined by the medical examiner and thus secure to the insurance company some desirable risks that were rejected by the examiner for remediable conditions.

There can be no doubt that the advantage of life insurance is so great that a modification of present methods within the limits of safety is very desirable.

The popularizing of health examinations will be a helpful measure in this direction. There is a possibility of the insurance companies, through their own medical and welfare departments, forestalling private health examinations. To what extent these movements may lead to what is known as state medicine, it is impossible to predict. To one who is watching the trend of events, as they effect the medical profession, wholesale medicine in some form seems almost certain. It will be found impossible to arrest this tendency, and it is useless to cry out against it; we should rather watch the course of these evolutionary measures that seem to be moving in directions contrary to our interests as individual practitioners, at least, to a great number of people and a large group of physicians.

Americans have so raised their standards of health and consequently so extended their expectation of life that the larger life insurance companies are constantly liberalizing the rates on protection. One such concession has just been announced by the Prudential Insurance Company and it is a marked departure from common practice. Because of these improvements in health, this company is now considering applications, without medical examination, for additional ordinary insurance, on the life of any policyholder up to and including forty-five years of age, nearest birthday, on whose life an ordinary policy has been issued at standard rates with full

medical examination within twelve months prior to the application for new insurance.

The amount may be up to $10,000 but must not exceed the amount of the preceding policy except where it was for only $1,000. In that event the new policy may be for $2,000. This concession also applies to policies on the lives of women.

In insured groups the mortality is almost invariably lower, age for age, than in the population at large. According to the American Men Table, which represents the mortality experienced by the insurance companies in the years 1910-15 the death rate for males, at age twenty, was 3.92 per thousand and the expectation of life 45.93 years; the corresponding figures for the general population in the original registration states, for the years 1909-11, were 4.89 for the death rate and 42.71 years for the expectation of life. At age 45, the death rate among the life insurance companies was 7.94 per thousand and the expectation of life 25.22 years, as against a death rate of 12.64 and expectation of 23.86 years for the registration states.

A MESSAGE FROM THE PRESIDENT

During the year, between the sessions of the Iowa State Medical Society, the officers and committees are in active charge of the interests of the society.

To some of our members the State Society does not exist except as a medium of presenting some very good papers and giving an opportunity for pleasant social reunion for a few days each May.

In reality the Society is in sessions all the year through and is accomplishing a great deal of work for the welfare of the whole profession of the state.

During the year 1924-25 the president, secretary, treasurer, and all the standing committees of the State Society, have realized that the full strength and efficiency of the medical profession, in this state, can only be utilized by having a closer union of all the men who are eligible for membership in their county society.

The county society is, in reality, the State Society. In the smaller group there ought to be found and discussed all the problems of the profession. From them should come the delegate, thoughtfully instructed in all the conditions which will make for the betterment of the deliberations of the House of Delegates. We trust that every county in the state will, this year, have its delegate reporting for each session.

One of the main activities of the officers this year, has been to visit county societies, where from any cause, they have not been actively interested in their own work and therefore not giving properly of their influence and aid to the State Society.

It is amazing how small the cause and how unimportant the reasons given why men, otherwise normal, will be at swords point with a professional brother. It is a pleasure to say that in many counties of Iowa where there has been discord and indifference to medical harmony there are now actively functioning county societies working for their common good.

Where men will continue to abuse each other in public they cannot expect to retain that public confidence which is necessary for establishing the influence which is the right and due of every medical man. If you continue to abuse another and he in turn abuses you, it is not surprising that your public will soon believe you both and turn to the quack who agrees with you both and lauds his own ability.

This year your program committee has arranged a program of merit. Every subject and every essayist has been carefully considered and we can assure the medical men of Iowa that if they will spend all the time of the program of May 13, 14 and 15 in Des Moines they will have definite benefit in their coming year's work.

We wish to urge one thing specially, and that is that every one stays through the program of Friday morning. There must be a last paper. The men on the end of the program are of special ability in their chosen field. They should have the courtesy of a full attendance. A few hours later getting home will not affect your work so much as to miss the excellent papers which are prepared for Friday morning.

This is the representative body in Iowa of the noblest profession in the world. You are a part of it. You should be proud to aid in its program.

There promises to be the best attendance of many years. Look over the program and prepare to give your views in the discussions.

FRANK M. FULLER.

TUBERCULOSIS, A FAMILY PROBLEM

The New York Association for Improving the Conditions of the Poor, has issued a pamphlet of nineteen pages based on a period of ten years. These observations are of such importance that we present a summary of the views of the Association.

The results of a ten-year demonstration of the home hospital plan of treating tuberculosis, under which the entire family is treated when a parent is afflicted, instead of sending the parent to a sanitorium and the children to an institution, are set forth in a pamphlet just issued by the New York

Association for Improving the Condition of the Poor, under the title "Tuberculosis, a Family Problem".

The report points out that when tuberculosis invades the home the usual recourse is to place the patient, either the father or the mother, in a sanitorium and to place the children in a preventorium, in a foster home or with friends or relatives. Separated from his family, the patient becomes worried and discouraged, a factor which alone retards his progress; or he is likely to leave the sanatorium before a complete recovery has been effected. Continuing, the report says, in part:

"If there ever was a disease in which the family and not merely the patient is the unit of treatment, that disease is tuberculosis. The Home Hospital is a demonstration of the results which can be secured by housing the tuberculous patient and his family in a wholesome environment, by supplying the family with sufficient relief to provide for an adequate standard of living, and by providing the necessary medical and nursing care not only to insure the recovery of the patient but to prevent tuberculosis from occurring among those members of the family who had not previously been afflicted.

"When the Home Hospital idea was first conceived the objection was made by some that without complete segregation of the tuberculous, many new cases would develop within the institution itself. In our ten years' experience no new cases of tuberculosis, either of children or adults, has developed while a family was in the institution. This remarkable record we attribute to the educational work with families as to the importance of fresh air and sunlight and to simple precautions regarding sleeping arrangement and the use of common towels, glasses and dishes.

"Judged by medical results the Home Hospital is quite as effective in arresting and improving tuberculous patients during residence as any sanitorium in the country. It is further one of the most effective measures yet devised for safeguarding the health of well members of the family both by building up their resistance and by preventing the spread of infection within the family. Despite the social, educational and economic handicaps which first brought the families to our attention, patients discharged from Home Hospital apparently live longer and are economically more productive than those discharged from other sanatoria.

"The fact that practically 60 per cent of the patients in spite of their tremendous handicap are able to assume full responsibility toward their families after discharge is abundant evidence of the lasting effect of Home Hospital treatment. Of those discharged as quiescent practically 50 per cent were found on the follow-up to be alive and gainfully employed."

The pamphlet contains tabulations, comparing the condition of patients on admission at Home Hospital with other institutions, and similar comparisons on discharge; a comparison of results achieved on discharge according to condition at Home Hospital and four sanatoria; after history of discharged adult patients, together with a detailed analysis of the cost of the Home Hospital plan.

EVIDENCE AND FINDINGS IN SPONGE CASE

(Moore vs. Ivey et al. [Texas], 264 S. W. R. 283)

The Court of Civil Appeals of Texas, in affirming a judgment for $8,750 in favor of Mrs. Ivey, plaintiff, states that in June, 1920, a physician operated upon her for a falling of the uterus, at the same time removing the appendix and puncturing a small cyst on an ovary. In November, 1921, the defendant operated on her for the removal of a stone in the left kidney. June 13, 1922, another physician removed a piece of gauze that passed through her intestine, described as about eight inches wide and from thirty-two to twenty-four inches long. The jury found that the defendant used and failed to remove the sponge or gauze before closing the incision; that his failure to remove it was negligence. Notwithstanding the defendant's high character and reputation as a careful and eminent physician and surgeon, the court is not prepared to hold that the finding of the jury that the sponge was left in the plaintiff in the operation performed by the defendant was so against the weight and preponderance of the evidence as to be clearly wrong.

Assuming, as the jury had the right to do, (1) that the plaintiff told the truth when she testified (a) that in a short time after the operation in June, 1920, she was so greatly improved in health as to suffer no pain until about April or May, 1921; (b) that during such time she was able to and did do all her own cooking, sewing and house cleaning, and also to care for her children, and (c) that she therefore discharged her servant; assuming (2) that the physician who performed the operation in June, 1920, told the truth when he said he used no such sponge in his operation as passed from the plaintiff's intestine; and (3) accepting as true defendant's testimony (a) that before he performed his operation he had roentgenograms made of the plaintiff and thereby discovered a stone in her left kidney, and (b) that had there been an abscess formed around a sponge at the time he made his diagnosis and examination, he would have been able to detect it by examination, this court thinks that the jury might have reasonably concluded that the sponge which passed from the intestine of the plaintiff was not in her body at the time the defendant made his diagnosis and roentgen-ray examination, just before he performed his operation, and, as a corollary, that the sponge was left in the body of the plaintiff in the defendant's operation.

The defendant contended that the finding of the jury that the sponge was left in the body of the plaintiff by him was based on a presumption drawn from conflicting evidence, and that the finding that he was guilty of negligence in not removing the

sponge before closing the incision made by him was based on the presumption first mentioned, and that therefore the last-mentioned finding was a finding which had for its basis a presumption based upon another presumption. The court holds, however, that the finding of the jury that the sponge was left in the body of the plaintiff in the operation performed by the defendant was not based on a presumption only, but rather on facts testified to by certain witnesses, which negatived that it was left by the physician who operated in June, 1920, and which, if true, proved the existence of the fact found by the jury in the first instance:

Since the jury found on sufficient evidence that the defendant left the sponge in the plaintiff, the court thinks that a further finding that such act constituted negligence on the part of the defendant necessarily followed.

Nor does this court think that the trial court abused the discretion reposed in it by statute in refusing a new trial because, while the jury was considering its verdict, (1) one juror mentioned that a neighbor had recovered a judgment for $15,000 because a physician had left a small piece of bone and a piece of gauze in her nose; (2) the jury discussed the probability that the defendant had insurance to protect him against loss in such cases, and discussed the probability that the plaintiff's attorney would get a portion of any recovery which they might award, and (3) the jury referred to the fact that some physician was threatened with a suit in an appendicitis case, and that a verdict against the defendant might have a beneficial effect as tending to make physicians more careful.

—Journal A. M. A.

ENTRAPMENT OF PHYSICIANS UNDER NARCOTIC LAW

(Newman vs. United States [U. S.], 299 Fed. R. 128)

The United States Circuit Court of Appeals, Fourth Circuit, in affirming a judgment of conviction of defendant Newman of violating the Harrison Narcotic Law, says that he was a practicing physician, duly registered as required by law. The two counts of the indictment on which he was convicted charged that he knowingly and feloniously gave, distributed, dispensed and furnished on May 7, 1922 and June 6, 1922, to one John Walter McDonald, a narcotic inspector, 16 one-fourth grain morphin tablets and 6 grains of morphin, on the respective dates, not in the course of his regular professional practice as such physician, and not in the treatment of any disease from which McDonald was suffering, and not pursuant to a written order therefor issued for the purpose by the commissioner of internal revenue. The first error assigned was the refusal of the trial judge to direct a verdict of not guilty on the ground of entrapment of the defendant by a government agent. There was a sharp conflict between the testimony of the government narcotic inspector and that of the defendant on the vital issues of fact involved; and there was no testimony by other witnesses, either on behalf of the government or the defense, concerning the transaction between the inspector and the accused. Under this conflicting testimony the court was right in refusing to tell the jury that it should acquit the defendant, because he was entrapped by the officer.

As the issue of entrapment was vital, the defendant was entitled to an accurate statement of the law of entrapment. It is well settled that decoys may be used to entrap criminals, and to present opportunity to one intending or willing to commit crime. But decoys are not permissible to ensnare the innocent and law-abiding into the commission of crime. When the criminal design originates, not with the accused, but is conceived in the mind of the government officers, and the accused is by pursuasion, deceitful representation or inducement lured into the commission of a criminal act, the government is estopped by sound public policy from prosecution therefor. The following instruction on the subject of entrapment, given at the request of the defendant's counsel, clearly stated in concrete form the whole law of the subject applicable to the facts of the case:

"The court instructs the jury that, while it is permissible for government agents and officials, through detectives and decoys, to entrap criminals, or to present opportunity to those having intent to or who are willing to commit crime, it is not proper for government officials, agents or decoys to incite to or create crime, for the purpose of prosecuting it or punishing it, and if the jury believe from the evidence that the government's agent and witness, John Walter McDonald, through false statements made by the defendant to the effect that he was suffering from a disorder of the stomach and required morphin for the purpose of relieving the pain incident thereto, or that he was an addict or had been an addict, and found it necessary to occasionally take small doses in an attempt to cure himself from the drug habit, and through such statements, which were false procured from the defendant the morphin for the dispensing of which the defendant stands indicted, and the defendant, believing the statements made by McDonald were true, was induced thus to violate the law, and that said defendant was not theretofore willing thus to violate the law, and would not otherwise have violated the law, then the jury should find the defendant not guilty."

Another instruction was right: that a physician cannot justify giving or selling morphin to an addict to gratify his desire for the drug, on the claim that it was given in the course of a physician's professional practice.

It appeared that the defendant had suffered imprisonment of approximately eighteen months in jail and the federal penitentiary, the greater part in the penitentiary, while his cases had been pending in the district court and in this court. A strong and persuasive appeal was made to this court that further punishment for the crime for which he was

convicted would be a great hardship. While this court was strongly impressed with this view, punishment within the limits of the statute is in the discretion of the trial judge, and this court can give no relief on this ground.

—Journal A. M. A.

HIGH BLOOD-PRESSURE

Dr. Louis F. Bishop of New York in the February 18, 1925, New York Medical Journal and Record, offers some well considered observations on high blood-pressure.

"High blood-pressure is a sign of some underlying disorder or autointoxication and is almost certainly a compensatory process. It is wrong to treat it simply by dilating the vessels or by depressing the action of the heart. Nitroglycerine is useful in any crisis that comes to a person with high blood-pressure and every one with high blood-pressure should have it at hand to use if anything goes wrong. A temporary or momentary reduction of the pressure to relieve pain or prevent damage has nothing to do with the old fashioned attempt to reduce blood-pressure by drugs or electricity. The essential thing to treat is the overeating, worry, and the neglect of exercise that are so often at the bottom of the underlying condition. The object of our treatment is not to reduce blood-pressure but to prevent a further rise due to a continuation of the underlying cause. While it is only sensible to give a person coming to one in an excited stage of blood-pressure disease a short period of rest in bed, nevertheless, physical immobility is the worst thing that can be inflicted upon a person with high blood-pressure."

POST-OPERATIVE PNEUMONIA

Mr. Henry Featherstone of Birmingham, England, in an extended paper on "The Causation of Post-Operative Pneumonia", published in the British Journal of Surgery for January, 1925, reaches the following conclusions:

1. Post-operative pneumonia occurs with grave frequency.
2. Often it is not recognized, and figures which purport to give its incidence are unreliable.
3. The anesthetic agent and the method of administration, save in special cases, seldom are decisive factors.
4. Age and sex are not of importance.
5. General health and local disease of the lungs may play a considerable part.
6. At operation, every care should be taken to prevent loss of heat, of fluid, and of blood, and especially exhaustion from trauma to nerve tissue, and to highly vascular parts.
7. Infection of the lung is often by means of aspiration in the presence of certain other factors.
8. Severe sepsis in other regions affects the lung via the blood stream.
9. There is evidence that lymphatic infection through the right half of the diaphragm leads first to pleurisy and then to pneumonia.
10. In the absence of severe sepsis, operations on the abdomen, and especially the upper abdomen, provide the start of the chain of events which lead to pneumonia.
11. Pain in the abdomen from operative trauma, or from inflammation, give rise to rigidity of the anterior abdominal wall and to reflex inhibition of the diaphragm, together with some spasm of the lower intercostal muscles.

The lower lobes of the lungs, then, do not freely expand and contract, so that congestion of blood with edema sets in. The bronchioles of the disordered region are more or less choked by this swelling of their walls, which has, perhaps, been increased from irritation by the anesthetic agent. Into this motionless and well-nourished region, germs and particles of debris arrive. The mode of access may be by the air or by the blood or by the lymph. In these circumstances the patient cannot cough owing to pain, and the exudate and the debris, which should have been expectorated or evacuated by the ciliated epithelium, lie undisturbed in the lower lobes. Closure of the bronchioles in this nearly motionless area, and absorption of air from the alveoli, now ensue (Elliott and Dingley). The result of the process is massive collapse of the lung or, according to Whipple, pneumonitis.

When the infection is particularly virulent, if the patient's resistance is low, and if the diaphragmic paralysis persists, we shall not be surprised to find true bronchopneumonia as the sequel, and it will be of coalescing lobular distribution, chiefly in the lower lobes, affecting those lobules whose obstruction determined the collapse of that portion of the lung.

GASTROINTESTINAL SYMPTOMS AND EPIGASTRIC HERNIA

Hernia in the linea alba has often been confused with gastric and duodenal ulcer, and sometimes the two conditions exist at the same time. The presence of a tumor or slitlike opening in the linea alba, with or without the protrusion of a small mass on coughing, will help to establish a diagnosis of hernia.

In ulcer the symptoms come on at a certain interval after eating, while in hernia the paroxysmal attacks have no relation to meals but usually follow physical exertion, and the patient finds the most relief is secured by assuming a doubled up position, which relaxes the linea alba—when the omentum slips back into the abdominal cavity the pain disappears. Epigastric hernia must also be distinguished from cholelithiasis, cholecystitis, gastralgia, gastritis, carcinoma, sarcoma, appendicitis, nephrolithiasis, abscess or tumor of the abdominal wall, and the gastric crises of tabes.—Leigh F. Watson: New York Medical Journal and Record, April 16, 1924.

THE STATE JOURNAL

"The journal of the state medical association should be something more than a periodical that prints the proceedings of the state association and perhaps an occasional report of a county medical society meeting", says Albert E. Bulson, Jr., editor Indiana Medical Journal (Bulletin A. M. A.). "It ought to be a live, up-to-date medical journal, with departments devoted to original articles of the best type obtainable, news and personal notes of interest to the medical men of the state, society proceedings, a monthly report from the Council on Pharmacy and Chemistry of the A. M. A., and should reflect the doings of medicine everywhere. The editorial department should be full of pep, and always in support of the highest ideals of personal and professional conduct on the part of medical men. The editor should not be afraid to speak in disparagement of duplicity or unethical conduct, or to offer constructive criticism of conditions that concern the practice of medicine."

BREATHING CAPACITY AND DELINQUENCY AMONG WOMEN

There is apparently an important connection between breathing capacity and delinquency among women.

Recent investigations by Dr. Frederick L. Hoffman, Lld., consulting statistician of the Prudential Insurance Company of America, into the present day human physique, with a due regard to age, sex and race, has revealed among other interesting results the striking fact that normal women usually have a chest expansion about three centimeters greater than delinquents at corresponding ages.

"While delinquents apparently have a slightly better general physique than normal women, as indicated by a somewhat larger chest and abdominal circumference, their breathing power is distinctly less", says Dr. Hoffman. "And this vital inferiority", he adds, "may have an important bearing upon mental development, for otherwise physically delinquent women exceed rather than fall below the averages for the different bodily proportions as ascertained by painstaking measurements."

Dr. Hoffman's investigation included a larger number of individuals and has covered a considerable period. In normal women at thirty years of age the chest expansion averages 11.2 centimeters against 9.8 for delinquents. At ages beyond this, the difference is still more marked, being 10.2 for normal women and 7.6 for delinquents. Expressed in inches the differences are:

Under 30—Normal women, the chest expansion is 4½ inches; delinquent women 4 inches.

Over 30—Normal women, the expansion is 4 inches; delinquent women 3 inches.

Only in breathing capacity did the measurements disclose an inferiority among delinquents. Thus, says Dr. Hoffman, the abdomen, which is a fair index of nutrition, was 88 centimeters circumference for normal women under 30 years, while for delinquent women it was 90 centimeters. Among normal women over 30 the abdominal circumference was 94 centimeters against 93 among delinquents. Average weight under 30 was 125 pounds for normal women and 130 for delinquents; over 30 the corresponding weights were 142 and 135 pounds.

Incidentally Dr. Hoffman says he is decidedly of the opinion that the tendency toward increased weight with advancing years among American women is to be viewed with apprehension as indicative of premature senility and greater susceptibility to a variety of serious organic diseases.

The data from which he derived his findings and conclusions included more than 4,000 measurements of both sexes of Caucasians, Negroes, Caribs and Indians of North, Central and South America. These measurements were all made under uniform methods either by himself or under his direction through the cooperation of health officers and physicians in charge of reformatories and correctional institutions.

CONFERENCE EXPRESSES NEW VIEWPOINT ON THE TREATMENT OF SYPHILIS

The indiscriminate use of the word "cure" in the treatment of syphilis should be discontinued and in its stead the patient should be made to think merely of an arrested condition as in tuberculosis. According to a report just made public, such is the opinion expressed by the conference of the United States Public Health Service and state venereal disease control officers last December at Hot Springs, Arkansas. This conference advised that persons undergoing treatment for syphilis should expect and seek observational control at appropriate intervals, and under proper medical care, throughout a period of years—instead of considering themselves cured after a few months' or a year's treatment—in order to avoid the late involvement of the heart, blood-vessels and nervous systems. The adoption of this attitude by the conference is disclosed by the report of the Hot Springs meeting which has just been published in pamphlet form by the Division of Venereal Diseases of the United States Public Health Service.

According to the printed report, the conference passed resolutions concerning the policy, management, methods and standards of examination, diagnosis and treatment to be followed by clinics supported in whole or in part by federal or state funds. The report says that medical responsibility for the health of a patient who has acquired syphilis or gonorrhea is not discharged by mere routine treatment during the infectious stage, but extends to the prevention of crippling, degenerative lesions during the patient's later life. One of the first essentials to such prevention is complete observational control with periodic re-examination. It is urged that such systematic checking must be carried out through a

period of years. Such a course is necessary, says the report, because a complete relapse of a patient treated for syphilis may occur in any case, however apparently hopeful at the start.

Among other things, the conference found that three years may be prescribed as the average period of treatment for the early case of syphilis before it is placed on observation. Five years has been widely accepted as the lapse of time required to reduce the infectious possibilities to a point where marriage may be contemplated. —Conkling.

THE GORGAS MEMORIAL

We are planning to establish a Memorial to William Crawford Gorgas, not of marble or bronze, but a permanent living organization in the form of a great health foundation, typical of his work in research and curative medicine that will unite laymen and doctors in an intelligent effort to obtain better personal health—a health guild that will be directed by the representatives of curative medicine.

Public ignorance is encouraged by professional reticence. If the profession is to maintain the high standing to which centuries of labor in behalf of suffering mankind entitles it, it is essential that a definite organized effort be made to familiarize the public with such facts as will enable it to recognize the fallacies of the cultists. A constant fund of proper health information carried to the individual through the pages of his daily paper, the columns of the general magazines, by means of moving pictures, lectures and the radio, will direct him to the proper source for medical advice, and gradually eliminate these "irregulars".

This is the age when people are knocking at all doors of knowledge and demanding that they be admitted. When this knowledge is not forthcoming from the proper source, substitutes are offered—in many cases by those entirely ignorant of the subject they presume to teach.

Individual effort does not accomplish the desired result. A movement such as this must be conducted by a dignified, ethical organization, controlled by the medical profession, supervised by a cooperative lay and medical directorate.

Governing committees are being formed in each state on the basis of 100 members to every 1,000,000 population. Seventy-five per cent of the personnel of each committee will consist of medical men and 25 per cent of influential laymen and women. The permanent activities of the organization will be supervised by these governing committees in cooperation with the national executive committee. Every individual on the state committee is a contributing member and, therefore, has a pocket book interest in the successful outcome of the project.

This is one foundation that is controlled by the practitioners of curative medicine and should be supported by every progressive physician. Let us pull together—"the doctor for the doctor".

Medical Membership Committee—Frank Billings, George W. Crile, Surgeon-General H. S. Cumming, George E. de Schweinitz, Gilbert Fitz-Patrick, William D. Haggard, Seale Harris, Surgeon-General M. W. Ireland, W. H. G. Logan, Franklin Martin, C. Jeff Miller, Stuart McGuire, William J. Mayo, Samuel J. Mixter, Brigadier-General R. E. Noble, Ernst A. Sommer, George David Stewart, Rear Admiral E. R. Stitt, Ray Lyman Wilbur.

—Franklin Martin.

OPPORTUNITIES FOR GRADUATE MEDICAL STUDY IN NEW YORK

The committee on medical education of the New York Academy of Medicine has prepared a series of synopses of approved opportunities for graduate medical study in New York City which will soon be published for distribution. The synopses cover dermatology and syphilology, obstetrics and gynecology, internal medicine, neurology and psychiatry, ophthalmology, oto-laryngology, pediatrics, surgery, urology, and orthopedic surgery.

A bureau of clinical information is maintained at the Academy of Medicine, 17 West Forty-third street, where detailed information is available regarding opportunities for graduate medical study in New York, and also in other cities of the United States and abroad. The executive secretary in charge of the bureau is prepared to answer inquiries concerning ordinary internships, special internships or residencies, graduate courses in medical schools and teaching hospitals, and extension courses. Much information in regard to graduate medical work in England and on the continent is on file.

The bureau publishes a daily bulletin of surgical clinics which will be mailed free to visiting doctors on request. A weekly bulletin of medical clinics also is published. A book of the fixed clinics of Greater New York, with a transportation guide, has been prepared for the use of visitors whose stay in the city is limited, and is furnished without charge.

U. S. MARINE HOSPITALS REDUCE FIRE HAZARDS BY REMOVING OLD IMFLAMMABLE X-RAY FILMS

The Surgeon General, U. S. Public Health Service, has issued general instructions to remove from the clinical record files as many of the used x-ray films of inflammable type as are not essential for record purposes. The storing of nitrocellulose films, especially when filed as a part of the clinical records, is, of course, well known to be a serious fire hazard and in conflict with the fire regulations of most cities. Boards of medical officers have been called in the various marine hospitals for the purpose. One of the larger institutions has eliminated approximately 600 pounds of the old style used films from its records. The material has a small sales value. The use of fire-resisting films which are not more inflammable than ordinary paper, and the stor-

age of which, therefore, presents no special problem, was introduced in all marine hospitals on July 1, 1924.

UNITED STATES CIVIL SERVICE EXAMINATIONS

The United States Civil Service Commission announces the following open competitive examinations:

Junior Medical Officer
Assistant Medical Officer
Associate Medical Officer
Medical Officer
Senior Medical Officer

Applications for the positions listed above will be rated as received until June 30. The examinations are to fill vacancies in various branches of the government service, at entrance salaries ranging from $1,860 to $5,200 a year.

Applicants for these positions must have been graduated from a medical school of recognized standing, and, in addition, have had certain specified experience or post-graduate study. It is provided, however, that applicants for the position of junior medical officer who are senior students in a medical college, may be admitted to the examination subject to their submitting proof of actual graduation within six months from the date of making oath to the application.

The need is for eligibles who are qualified in the various specialties of medicine and surgery; there is no great need at this time for those who are qualified in general medicine or surgery.

Competitors will not be required to report for examination at any place, but will be rated on their education, training, and experience.

Graduate Nurse
Graduate Nurse (Visiting Duty)

Applications for positions of graduate nurse and graduate nurse (visiting duty) will be rated as received until June 30. The examinations are to fill vacancies in the Indian Service, at an entrance salary of $1,500 a year, with furnished quarters, heat, and light free of cost; in the Veterans Bureau, at entrance salaries ranging from $1,680 to $1,800 a year; and in the Public Health Service, at an entrance salary of $1,020 a year, with quarters, subsistence, and laundry free of cost.

Applicants for the position of graduate nurse must have been graduated from a recognized school of nursing requiring a residence of at least two years in a hospital having a daily average of thirty patients or more, giving a thorough practical and theoretical training, and also furnish evidence of state registration.

Applicants for the position of graduate nurse (visiting duty) must meet the requirements for graduate nurse, and, in addition, establish at least four months' post-graduate training in public health or visiting nursing at a school of recognized standing, or in lieu of such training, one year's experience, under supervision, in public health or visiting nursing.

Competitors will not be required to report for examination at any place, but will be rated on their education, training, and experience.

Physiotherapy Aide
Physiotherapy Pupil Aide
Physiotherapy Assistant

Receipt of applications for the positions listed above will close April 11, May 9, and June 13. The date for the assembling of competitors will be stated on the admission cards sent to applicants after the close of receipt of applications. The examinations are to fill vacancies in the Veterans' Bureau and the Public Health Service.

The entrance salary for physiotherapy aide in the Public Health Service is $1,020 a year, with quarters, subsistence, and laundry; for physiotherapy pupil aide, $720 a year, with quarters, subsistence, and laundry; and for physiotherapy assistant, $1,500 a year.

The entrance salary for physiotherapy aide in the Veterans' Bureau is $1,680 a year. In this service the entrance salary ranges from $1,000 to $1,400 a year for physiotherapy pupil aide, and from $1,320 to $1,600 a year for physiotherapy assistant.

The duties of physiotherapy aides consist of administering physiotherapy in its several branches—massage, electrotherapy, hydrotherapy, mechanotherapy, thermotherapy; active, passive, resistive, and assistive exercises and remedial gymnastics; keeping daily record of the work and progress of each and every patient coming under direction and treatment; making the required reports of the activities of the reconstruction work in physiotherapy.

The duties of physiotherapy pupil aides are the same as those for physiotherapy aides, except that they are pupils under the supervision and instruction of the chief aide in all the work above mentioned.

The duties of physiotherapy assistants are to administer to special cases the treatments of physiotherapy as massage, electrotherapy, hydrotherapy, thermotherapy, mechanotherapy; active, passive, and resistive exercises and remedial gymnastics; keeping a daily report of the work in progress on each patient coming under direction and treatment; making the required reports of the activities of the reconstruction work in physiotherapy.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the board of U. S. civil service examiners at the postoffice or customhouse in any city.

VETERANS' BUREAU HOSPITALS NEED OCCUPATIONAL THERAPY AIDES

There are about twenty vacancies in positions of occupational therapy aide in hospitals of the United States Veterans' Bureau, it is stated by the United States Civil Service Commission.

The Civil Service Commission will receive applications for these positions until April 30.

The duties of occupational therapy aides consist of giving instruction in the arts and crafts or in academic or commercial subjects, keeping a daily record of the work and progress of each patient, and making the required reports.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or from the Secretary of the United States Civil Service Board at the post-office or customhouse in any city.

SOCIETY PROCEEDINGS

Calhoun County Medical Society

The Calhoun County Medical Society met at the office of Dr. D. J. Townsend, at Lohrville, March 19, 1925.

The following program was presented: Public Health and Preventive Medicine, Dr. Van Meter. Diseases of the Respiratory System, Dr. Hutchinson. Medical Economics, Dr. McVay. Anesthetics and Pharmacology. Dr. Cartenson.

Linn County Medical Society Post-Graduate Series

Every physician in eastern Iowa should be interested in the Linn County Medical Society series of post-graduate study, which are held regularly on the second Thursday of each month.

February 12, 1925, Meeting

Dr. Frank S. Skinner, Marion, gave an interesting paper on Physiotherapy as an Aid in Treatment, giving the use, contraindications and results of the various apparatus as used in general practice.

Dr. Walter E. Sistrunk of the Mayo Clinic then gave an instructive paper on The Treatment of Tumors of the Breast, making a plea for early diagnosis on the part of the general practitioner and then stated that proper palpation was the chief early diagnostic sign. He told how to systematically palpate and just what you should expect to find in early cases. The lowering of the death rate from cancer of the breast can only be brought about by educating the public to come to the physician when they first notice a lump in the breast, and educate the physician to recognize malignant disease early.

March 12, 1925, Meeting

Dr. A. W. Erskine of Cedar Rapids in a paper on Radiation Therapy discussed the action and results of radium and x-ray treatment of various conditions and gave the percentage of cures of cases referred to him.

Dr. W. E. Post, professor of medicine of Rush Medical College, gave an instructive and practical paper on the Treatment of Nephritis. He commented on the recent work of Dr. Marriott of St. Louis, discussing the difference of both etiology and treatment when the underlying cause was streptococci or staphylococci. Many questions were asked and all present went away with a different conception of nephritis.

Coming Meetings of the Linn County Post-Graduate Series

Every physician is cordially invited to attend these meetings.

April 9—Dr. Wm. Engelbach of the Engelbach Clinic of St. Louis, will give an illustrated lecture on The Diagnosis and Treatment of Ductless Gland Disorders. It will well be worth while to hear this leader in the field of endocrinology as his talks are always very practical.

May 14—Dr. W. W. Duke of Kansas City will be present to discuss Allergy. Dr. Duke has several articles appearing in the J. A. M. A. and we can promise you an instructive evening with the latest in protein therapy. We will also have some cases to show on protein sensitization.

Dr. Printy of the Laboratory of Surgical Technique of Chicago will also give a demonstration of correct surgical technique at the same meeting.

B. L. Knight, M.D., Sec'y.

Scott County Medical Society

The Scott County Medical Society met April 14 at the LeClaire Hotel, Moline, Illinois. This was the first of the planned joint meetings with the Rock Island County Medical Society. Because of the natural community interest it seemed natural for these two societies to meet together. The multiplicity of medical organizations in this section and hospital staff meetings make so many meeting dates that the attendance is small, interest lags, and there is small incentive to ask speakers of reputation from a distance to address the societies. Meeting together is meant to correct most of these features. Separate business meetings were held by the societies with a combination program. Seventy-five men were present, whereas the attendance at separate meetings has been under thirty.

Dr. B. Frank Walters, successor to Dr. Lee Weber was elected to membership on transfer from Ramsey County Medical Society, St. Paul, Minnesota. The society voted to close the offices from May 1, to November 1, 1925, on Wednesday afternoons.

A movie reel entitled, Working for Dear Life, put out by the Metropolitan Life Insurance Company was shown stressing the desirability of periodical medical examinations during health so that beginning trouble may be found and corrected. The film states that the mortality rate was reduced 28 per cent in a group of 6000 policyholders who had these examinations carried out.

Dr. D. M. Berkman, Mayo Clinic, read a very instructive paper on Diagnosis of Chronic Abdominal Disease.

Dr. Chas. M. Elliott, Chicago, professor of medicine in Northwestern University gave a very excellent talk from lantern slide diagrams on Diagnosis and Treatment of Hyperthyroidism. He stressed the points of early diagnosis and early surgery for toxic goiter. He likened the goiter situation now with the appendicitis situation thirty years ago when surgery was given late and results were fatal or damaged organs persisted.

The next joint meeting will be held in Davenport in May.

Paul A. White, Sec'y.

AMERICAN PROCTOLOGIC SOCIETY

Preliminary Program

Meeting—Ambassador Hotel, Atlantic City, N. J.
May 25-26, 1925

Monday, May 25, 1925—First Day

9 A. M.—Presidential Address: Dr. Frank C. Yeomans, New York, N. Y. (10 min.)

"Anesthesia in Rectal Surgery", Presentation: Dr. G. Milton Linthicum, Baltimore, Md. (20 min.)

Opening Discussion: "Spinal Anesthesia", Dr. A. J. Murietta, Los Angeles, California (10 min.); "Sacral Anesthesia", Dr. L. A. Buie, Rochester, Minnesota (10 min.).

Case Reports: "Congenital Malformations of the Rectum and Anus", Dr. J. F. Saphir, New York, N. Y. (5 min.); "Functional Stenosis of the Rectum", Dr. A. A. Landsman, New York, N. Y. (5 min.).

"Proctologic Advances Revealed in the Literature of 1924", Dr. T. C. Hill, Boston, Massachusetts (20 min.).

2 P. M.—"Ano-rectal Fistulae", Presentation: Dr. Collier F. Martin, Philadelphia, Pennsylvania (20 min.).

Opening Discussion: "Probable Relation of Tuberculosis", Dr. W. A. Fansler, Minneapolis, Minnesota (10 min.); "Surgical Treatment", Dr. J. D. Stewart, New York, N. Y. (10 min.)

Case Reports: "An Unusual Case of Rectal Fistula", Dr. W. M. Beach, Pittsburgh, Pennsylvania (5 min.); "Mercurochrome in Proctology", Dr. D. A. Kraker, Newark, N. J. (5 min.); "Multiple Diverticula in Rectum", Dr. I. L. Ohlman, Pittsburgh, Pennsylvania (5 min.).

Presentation of Unusual Specimens and New Instruments

(5 Minutes Each)

Tuesday, May 26, 1925,—Second Day

9 A. M.—Hemorrhoids, Presentation—Dr. Louis J. Hirschman, Detroit, Mich. (20 min.)

Opening Discussion: "Ambulatory Treatment", Dr. E. H. Terrell, Richmond, Virginia (10 min.); "Composite Operation", Dr. E. G. Martin, Detroit, Michigan (10 min.).

Case Reports: "Preliminary Report of a New Treatment for Hemorrhoids", Dr. J. F. Montague, New York, N. Y. (5 min.); "Incomplete Removal of Hemorrhoids", Dr. W. H. Stauffer, St. Louis, Missouri (5 min.); "Ionization Technic in Pruritus of Perineum", Dr. H. E. Dunne, Washington, D. C. (5 min.).

2 P. M.—Cancer of the Rectum, Presentation: Dr. J. Rawson Pennington, Chicago, Illinois (20 min.).

Opening Discussion: "Treatment by Radiation", Dr. C. C. Mechling, Pittsburgh, Pennsylvania (10 min.); "Results of Surgical Treatment", Dr. J. M. Lynch, New York, N. Y. (10 min.).

Case Reports: "Treatment by Percy Cautery and Endothermy", Dr. Arthur Crookell, Seattle, Washington (5 min.); "Resection of Gangrenous Sigmoid with Recovery", Dr. John L. Jelks, Memphis, Tennessee (5 min.); "Multiple Adenomata of Rectum", Dr. Curtice C. Rosser, Dallas, Texas (5 min.); Multiple Polyposis of Rectum; Conservative Treatment", Dr. D. C. McKenney, Buffalo, N. Y. (5 min.).

Executive Session: (30 minutes).

Adjournment to attend the Meeting of the Section on Gastro-enterology and Proctology of the American Medical Association.

THE AMERICAN BOARD OF OTO-LARYNGOLOGY

The American Board of Otolaryngology will hold its first examination during the Meeting of the American Medical Association in Atlantic City, May 25 to 28.

According to the rules of the board, applicants are divided into three classes.

Class I. Those who have practiced otolaryngology ten years or more.

Class II. Those who have practiced otolaryngology five years and less than ten years.

Class III. Those who have practiced otolaryngology less than five years.

The type of examination is different for each class.

The secretary, Dr. H. W. Loeb, announces that thus far over three hundred applications have been made.

MEDICAL NEWS NOTES

Plans are in operation for a meeting of the physicians of northwest Iowa at Twin Lakes, July 16. Dr. P. W. Van Metre is secretary.

Osler Memorial Volume

This memorial, which the International Association of Medical Museums has for some time had in preparation, is nearly completed. It will contain about 300 pages, fully illustrated, and will sell for $10. In meeting the cost of publication, the Association has been assisted by members of the late Sir William Osler's family and numerous friends. The book will contain general articles, an account of Osler's early life and recollections of his work in Montreal, Baltimore and Oxford. Among the

contributors are Dr. W. William Welch, Lieut-Col. Fielding H. Garrison, Drs. Thomas MaCrae, Howard A. Kelly, J. George Adami, Llewellys F. Barker, Sir Thomas Clifford Allbut, Sir Humphrey D. Rolleston, Sir William Hale-White and Sir Arthur Keith.

Pasteur Memorial

Dr. Frank Billings of Chicago is chairman of a committee working to raise a fund of $100,000 for a monument to Pasteur to be erected in Chicago, and a research scholarship open to all American students.

Pasteur Relics

Two small flasks and a U-tube, used by Pasteur while dean of the faculty of sciences of the University of Lille, from 1854 to 1857, have been sent to Columbia University by Professor Pascal, of France. The pieces are to be displayed in the Chandler Chemical Museum. Pasteur began his study of fermentation while he was at the University of Lille.—Medical Journal and Record.

The annual dues to the Canadian Medical Association have been fixed for 1925 at $10.

The Council Bluffs Nonpareil in the April 1st number prints a rather interesting discussion before the Council Bluffs school board, that takes us back to the time before Lady Montagu introduced inoculation for small-pox into England from Turkey in 1718. The mortality from the disease was so like a plague and Lady Mary believed that purposeful inoculation of the real disease would be a great saving of life. It appears this proposal met with the same opposition met with in Council Bluffs against vaccination more than two hundred years later. Notwithstanding, Lady Mary Montagu had her children inoculated.

While reading the Nonpareil account, our mind went back to the awful days before Jenner. We could hardly believe that a city so famous for its intelligence as Council Bluffs, could take us back 207 years and revive the experiences of Lady Montagu.

The dangers from inoculation of small-pox were so infinitely greater than vaccination that it places the England of the eighteenth century far in advance of a far famed city of America of the twentieth century.

HOSPITAL NOTES

It has been announced that the East New York Hospital will be sold at auction, in order to recover $15,095, the amount of an unpaid judgment obtained by a patient who was injured in a collision of a hospital ambulance and the automobile in which he was riding.

PERSONAL MENTION

Dr. Frank Fuller of Keokuk and Dr. Granville Ryan of Des Moines, have been elected members of important boards at the recent meeting of the American College of Physicians at Washington, D. C.

Dr. Ross Hunt, a graduate of Northwestern University, is to locate in Winterset.

Dr. Clifford, who has been practicing in Grand Mound for the past three years, has moved to De Witt. Dr. Clifford is a graduate of the Medical School of the Iowa University.

Dr. Jessie B. Hudson of Carroll, will locate in Sheffield, Iowa.

Dr. C. E. Broderick of Newton, a graduate of the Iowa University School of Medicine, 1918, will locate in Cherokee in the practice of eye, ear, nose and throat.

Dr. Davis, assistant superintendent Mount Pleasant Insane Hospital, has resigned to accept the position of assistant superintendent of an Indiana Federal Hospital. Dr. E. A. Steward of Mount Pleasant has been appointed to succeed Dr. Davis at Mount Pleasant.

Dr. H. J. Brackney of Sheldon has been appointed surgeon for the C. M. & St. P. Ry. Company, as an assistant to Dr. Cram.

MARRIAGES

Dr. Ernest J. Voight of Burlington and Miss Myrtle Manusch were married at Galesburg, Illinois, February 24.

Dr. Voight is a graduate of the Iowa University School of Medicine.

OBITUARY

Dr. Amanda Clara Shryer of Durant, died at Mercy Hospital, Davenport, February 21, 1925, at the age of sixty-seven years.

Dr. Shryer was born in Germany, November 25, 1856. Her maiden name was Amanda Clara Kauf. She came to America when she was sixteen years old and had lived in Durant forty-three years. She became a medical practitioner about twenty-five years ago and practiced in Durant during this time. Her husband died several years ago.

Dr. A. B. Conaway, formerly of New Sharon, Iowa, died recently at Glendale, California.

Dr. Conaway was born in Ohio May 12, 1849. Graduated from the Ohio Medical College and practiced in East Springfield, Ohio, for a few years before he came to New Sharon in 1880, where he practiced medicine until 1897, when he moved to Pasadena.

While a resident of New Sharon Dr. Conaway was actively interested in political and Masonic affairs. He was elected senator from Mahaska county and served in the Twenty-fourth and Twenty-fifth

General Assemblies. He was a candidate for nomination as governor before the republican convention which nominated Governor Drake.

Dr. Conaway was interested in organizing Drake University College of Medicine and was a member of the first faculty. He was a member of his county, state and national associations and also a member of numerous Masonic organizations.

Dr. James Coburn Burbank, a graduate of Hahnemann Medical College, Philadelphia, died at the home of his son, Fred B. Burbank in Sioux City, March 1, 1925, at the age of ninety years.

Dr. Burbank practiced medicine in Freeport, Illinois, for fifty years and had lived in Sioux City nineteen years. He was also for several years a practitioner in Clinton, Iowa.

Dr. John Bingham Roberts of Philadelphia, died November 28, 1924, as the result of injuries received in an automobile accident, at the age of seventy-two years.

Dr. Roberts was well known in this country, not only through his success as a practicing surgeon, but also for his teaching in various medical schools and colleges, and his writings on his specialty. Among the last were many articles and papers on surgery and medicine and such well known works as the Paracentesis of the Pericardium, A Compend of Anatomy, Surgery of the Human Brain, Treatise on Modern Surgery, Modern Medicine and Homeopathy, Fractures of the Radius, Modern Treatment of Fractures, and Deformities of the Face. Dr. Roberts was also a member of the editorial staff of several of the leading journals of medicine and surgery.

He was at the time of his death president of the American Surgical Association, former president of the American College of Surgeons, was president of the American Academy of Medicine in 1904, and president of the Philadelphia County Medical Society and of the Medical Society of the State of Pennsylvania. He held also the position of professor emeritus of surgery of the Graduate School of Medicine of the University of Pennsylvania, and was professor of surgery at the Philadelphia Polyclinic.

AMPOULE SOLUTIONS DAILY GROWING IN POPULARITY

The ampoules that are particularly to be recommended are made of imported glass, glass containing no soluble alkali that might have an effect upon the medicament. The ampoules, after being filled, are closed hermetically, under a gas flame; in other words, the glass at the neck is melted and fused, and the container is thus made airtight and watertight. In addition to this protection, it is necessary in some cases to protect the solution from the effect of light, and the ampoules are therefore put up in cardboard cartons which exclude the light.

All of which goes to show that conveniences are not gratuitous, but must be paid for by either the manufacturer or the user. In this case the manufacturer pays the major part of the price in the care required for assaying, sterilizing and encasing the medicinal solutions; but the user is supposed to keep the ampoules in their respective packages, and not let them lie around loose, until they are needed. In some cases, too, it is quite important that the date stamped on the package be consulted, for the ampouled solutions are not all indefinitely stable. This reasonable care cannot be considered a high price to pay for the convenience of having at hand a sterilized solution in individual doses for subcutaneous, intramuscular or intravenous administration.

THE PHYSIOLOGICAL TREATMENT OF HAY FEVER

It is now universally known that hay fever is due to the hyper-sensibility of the patient towards one or more foreign proteins generally those of the pollens of neglected and useless weeds.

The pestiferous pollens are usually present in all parts of the United States between June 1 and September 1. They are present in the atmosphere, being wind blown, and the patient inhales them into the nose.

The pollens adhere to the sensitive and moist mucous membranes and if they are allowed to remain and penetrate the surface, soon set up an irritation and inflammatory condition of the terminal nerve filaments which quickly spreads to all the air passages.

In order to prevent the development and liberation of the poisonous proteids of the pollens, the nasal channel should be irrigated several times a day, thus washing them out as fast as they accumulate. In this way this distressing condition can be avoided.

This cleansing process can be accomplished by the Nichols Nasal Syphon, which suggests itself as a safe device owing to its unique and harmless suction action. In fact whatever treatment is prescribed the device will prove an additional aid inasmuch as it dissolves and draws out the pollens carrying secretions by irrigation, the only positive way of removing them.

The sufferers can use the apparatus at home several times daily, thus giving an antiphlogistic action which soon weakens the invasion often to the extent that the tissues eventually throw off the attack. As a preventive it is recommended that the Syphon be used daily before the seasonal time of attack of the individual. In this way the annoyance can be avoided altogether, as has frequently been proven.

After each irrigation a bland oil should be used with an atomizer. This acts as a prophylactic as it covers the membranes with an oil coating which prevents the pollens from adhering to them and starting the irritation.

The Journal of the Iowa State Medical Society

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PRESIDENT'S ADDRESS*

FRANK M. FULLER, M.D., Keokuk

The records of the wars of nations, the motives or lack of motive for these wars, the part that leaders have played in the progress of the world, and the rise and fall of peoples have been the chief points stressed in what is called history.

There is a deeper significance, however, in the record of all the elements which have entered into the development of the human race, from its existence before history was known to be recorded down through the long vista of light and dark ages to this time of fartherest advanced civilization.

Mysticism, religion, alchemy, astrology, astronomy, science, medicine, have all been elements which have shaped the course of peoples.

Of these, what we now call the science and art of medicine has found its way, through narrow and sluggish and through deep and swift currents from the earliest records, now being excavated to this day.

Self preservation being one of the fundamentals of human nature it was natural that man should form the ways, in his earliest existence, for the protection of his life and health.

Osler says that "The slow, painful character of the evolution of medicine from the fearsome, superstitious mental complex of primitive man, with his amulets, healing gods and disease demons, to the ideal of a clear-eyed rationalism is traced with faith and a serene sense of continuity".

When we consider that the history of man goes back to the pliocene period, only just now being revealed, and that man has been in existence on this earth for two and possibly three million years, and when we find in the discoveries of the earliest of these recorded times that man was struggling to find means of preservation of health and life, it makes us ponder the reason, and the purpose of the hurry and the rush to push forward the knowledge of the world.

Primitive man had no such conception of medicine as has existed since recorded history of so-called modern times. His was the protection of charms, of amulets, of superstition and of the efficiency of objects of nature. There were men of certain character who came to be trusted or feared for the special knowledge of human ills they possessed. As in all times there were abuses of the high privilege by men of low motives, but all through the growth of man it is evident that "medicine arose out of the primal sympathy of man with man; out of the desire to help those in sorrow, need and sickness".

Accidents and attacks of wild beasts were the early lot of man and his endeavor to meet his need was the beginning of medicine.

As in all things, where the nature of the causes are not understood, there was a very crude understanding of disease. It was supposed to be due—mostly to some mysterious and supernatural cause. It is even so today, where a phenomenon cannot be explained, it is ascribed to some indefinite supernatural influence.

So it was, in the slow progress of the race, where disease was believed due to some malign influence, it was necessary to be rid of it to exorcise the evil spirit or charm away the devils or placate some wrathful illdefined god. It was in this way that medicine became so closely associated with priestly influences and was so much in control of the religion of the time.

There is well defined record now being disinterred which shows the primitive methods of treatment of disease and the conception of its causes.

In the inconceivable ages before the glacial period and out of the struggles of the few survivors of that time there is very little that can be recorded that will connect medicine with its standing during what is known as the period of recorded history.

Out of the dark and little known periods of prehistoric time there came, full-blossomed, the civilizations of the Nile and of Mesopotamia.

Here, as compared with what the records of

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the world revealed in ages past, the science of medicine is shown in a very advanced state.

Where there is record of a magnificent material civilization there is also the evidence of man striving for causal relations in disease.

The Chaldean seers attempted to account for the ills of man through the influence of the stars, and astrology was developed as a means of determining when and how mankind could be free from menace of disease.

Egyptian wise men thought that through divination they could account for causes. The study of the liver, in which organ was supposed to lie the issues of life, became the one great source of information. From the Nile, this form of medical practice was carried to all the surrounding countries and was, later, adopted by the Greeks and finally by the Romans. Yet with all the ways that now seem devious to us, the men of that earlier civilization came into a very definite knowledge of many of the diseases known to us. There was a fair surgery done, dental work of a kind was practiced, and through a system of empiricism there came an extensive pharmacopoea.

However, causes were not known, and the supernatural and mystic still held the place of definite facts. Through the long years the history of medicine is a continuance of what may be termed stationary progress. But with the coming of the Greek mind there was a call for facts as a basis for all philosophy of life as well as for all science.

Out of the dominating part of Greece, a territory not larger than one of the larger counties of Iowa, there came a scientific, a political, an intellectual culture which, even today has its moulding influence in the world. It was impossible, in this fire test of thought, that medicine should remain as wholly in the control of religion as it had when men believed that what was not understood was not understandable.

The Greek philosopher of life was investigating all the elements in which he lived, the earth, the sky, the air, all came before his critical mind. How much they learned, with their limited means, is the amazement of the world today. The human body became the source of study, as it never had been before, anatomy and physiology took on definite shape and common diseases came to be understood and injuries treated as related to causes.

To quote Osler; "No God made with hands, to use the scriptural phrase, had a more successful 'run' than Asklepios—for more than a thousand years the consoler and healer of the sons of men. Shorn of his divine attributes he remains our patron saint, our emblematic god of healing, whose figure with the serpents, appears on our seals and charters. He was originally a Thessalonian chieftain and fought in the Trojan wars, and his sons Machaon and Podalirius became famous physicians. Nestor, you remember, carried off the former, declaring, in the oft-quoted phrase, that a doctor was better worth saving than many warriors unskilled in the treatment of wounds".

The temples which were erected to his worship at Cos, Pergamos, Epidaurus and many other places in Greece, and at later times in Rome, were marvels of construction and thousands of sick were treated in no mean way in these magnificent health resorts.

"From the votive tablets found at Epidaurus we get a very good idea of the nature of the cases and the cures. There are evidences of various forms of diseases of the joints, affections of women, wounds, baldness and gout. The inscriptions show that great attention was paid to diet, exercise, massage and bathing, and that, when necessary drugs were used."

For centuries the famous Oath of Hippocrates was used in the introduction of men to the practice of medicine. The attitude of the great founder of modern research is found in the expression that "where there is a love of humanity there will be love of the profession."

I would suggest that every man in this society read again the famous oath. I regret that time will not allow me to quote it here in full. But I will say that if all medical men would make this oath the base of their attitude toward patient and fellows of their profession, we would have, today, less of misunderstanding than now seems to exist in some places.

When we realize that the influence of Hippocrates has persisted through twenty-five centuries it is well to consider in what way he exerted his influence. With the extreme limitations of exact knowledge that he possessed he, nevertheless was able to instill into the world of his day, and into medical study ever since, his great independence of thought and action. "Fiction to the right; reality to the left", was the basis of practical work.

While the great Father of Medicine advanced in medicine, as Socrates had advanced in philosophy, there came one later, whose independence of thought in treatment of disease, founded our own pharmacopoea. Galen, renowned for his accuracy in the study of the body, for his advances in anatomy and physiology gave his name to that large number of pharmaceuticals known as Galenicals.

Out of the suggestions he made have come to us, today, our knowledge of sanitary water supply and sewage disposal.

Together with all knowledge and intellectual research, medicine was submerged during those black and wasted centuries of the "middle ages". Into the darkness of Europe there swept an influence, which was inimical to political life and was later swept out. But the invasion of Europe by the fanatical Arab was a renewing influence to the science of medicine. No race of men had, at that time, a more painstaking accuracy of observation in regard to disease. Their men of science were thorough and tireless. The knowledge of the Greeks which had been well nigh lost was restored in all its detail and applied with gain. The Arabic contribution to medicine at this time is the differentiation of many diseases, which had theretofore been confused. But their great value lies in the giving back to literature their translations of the works of the masters. They were the founders of the University of Montpelier and from there they gave an immense impetus to exact study of the human body.

The reaction from the slavish submission of the dark ages came strong during the thirteenth to the fifteenth centuries. "The sixteenth and seventeenth centuries did three things in medicine – shattered authority, laid the foundation of an accurate knowledge of the structure of the human body, and demonstrated how its functions should be studied intelligently—with which advances, as illustrating this period, may be associated the names of Paracelsus, Vesalius and Harvey."

The works of these masters can be compared, without apology, with the anatomy and physiology of today. A study of the medical history of their time is an inspiration to every man who desires to excel and should be a part of the course of every medical student of today.

Out of the works of such men and through the efforts of such as worthily followed them came the foundations of modern medicine. With Laennec and Pasteur and Lister there broke the light which now is beginning to shine brighter in the record of scientific medicine.

Why, you ask, is all this long review of that history which is familiar to many of you and which can be read by all.

Dry it seems and dry it is if seen only as a relation of fact of history. There is a lost art today and that is the art of reflection. If we stop to reflect on the real meaning of the history of medicine we find that there is a true inspiration and a stimulus in the development of our wonderful profession from its feeble incubation down to the power that it possesses in the world today.

There has always been, as there is today, a tendency to feel that our day and our way is the only day and the only way and that it is the best. When what we do shall have passed then the world will begin to decline.

Just now there is a feeling of doubt as to the future of medicine. What is to become of the family doctor, how are we to meet the problems of medical education? What is the meaning of the growth of cults and quackery? These are problems that many good men are feeling necessary of solution. They are, but we should stop to consider that they are problems that have always been before the medical profession. What we need is a greater consciousness of the greatness of our history and the permanence of the accomplishments of our profession through all the ages. There is no other history like it. The law has no such richness of achievement. There has not been in theology such progress of attainment. Painting, sculpture, architecture, have not been enriched, as has the science of medicine, by its passage through the centuries from the well nigh perfection of Greek and Roman effort.

When, thus, we review the history of medicine and consider the excelling growth of both its science and art it should arouse, in us, a true and justifiable pride in the accomplishment of the highest and noblest profession in the service of mankind.

The medical development of any given time represents the full total of the achievement of all past generations. It is the evidence of the mentality, the eagerness, the industry, the courage and the fortitude of the men who have given of their effort to the upbuilding of our present stage of progress.

From the earliest days of recorded history there are no names more revered than those of the men who have given, bit by bit, the marvelous structure of modern medicine. It is not necessary, here, to name them. You have in your knowledge the record of the ones who have laid the foundation stones and erected the superstructure of anatomy, physiology, pathology, physiological chemistry and the allied sciences of medicine.

The world has, everywhere, erected monuments to these whose self-sacrifice of time, strength and even life has added to the welfare of the race. In what other line of human endeavor will you find such a sum total of human benefit as is found in the accomplishments of scientific medicine?

What other body of men have, through the cen-

turies, worked with such generous and disinterested service for the improvement of the health of the individual and the protection of the community?

What have been some of the results of the accumulated labors of this volunteer army?

Through all history and down, even, to comparatively modern times, the world was swept by epidemics of small-pox, plague, yellow fever, malaria, diphtheria, and even measles. Wounds of war and of civil life were death sentences to thousands. Childbirth was the hand-maid of treacherous infection, and where the infirmity of age gave its thousands, the fecundity of youth gave its hundreds of thousands.

Water supply and disposal of wastes were merely the means by which typhoid fever was perpetuated in communities.

Milk and food supplies were accepted without regard for their effect on the health of the individual or their menace to the community.

There has been no power, there has been no influence in the world that could have rid the race of these destroying elements, until the profession of scientific medicine developed and held up the torch of accurate knowledge that whoever might look to it might be healed.

Any nation or body of government, which, would, today, allow typhoid or small-pox or malaria, bubonic plague or diphtheria to sweep unrestrained through its people would be shunned by the rest of the world as unworthy of intercourse.

Where did the world and its peoples learn so to protect itself? Alone through the teaching of scientific medicine. So freely has this teaching been given, so altruistically has the great body medical men been laboring that mankind and oft-times even we ourselves have forgotten how and when the knowledge came. Educational associations, great organizations of laymen, labor unions, school children, industrial plants, have all seized the knowledge of scientific medicine and applied it, without apparent credit for its source. It has been given and accepted as a part of the essential and necessary knowledge of the world.

The one purpose of this paper is that you, as representatives of this great profession, shall be reminded and shall never forget, that your profession holds within itself a heritage of which you may be proud. That today, with all the unworthy assaults made on this noble profession, it is not ignoble nor unworthy of you to display this heritage to the world. In this day when claims for confidence of the public, when demands for recognition of our legislatures are being boldly made by cults and faddists of every kind and description it is well to look to the value of these claims and the validity of these demands.

Sensible business men are calling for efficiency. Claims and assertions of ability are measured only in results.

Let us see what are the comparative results of the effort of scientific medicine and of those who claim to share the honors.

In time of war does the government call on the cults to furnish men to care for the health and life of the youth of the nation? Most certainly not. The first man who went to seek a location for an encampment was a representative of scientific medicine, a trained sanitary engineer. The next was a competent medical man to inspect the soldier as to his physical fitness. Then came the men of scientific medicine who cared for the men in camp, who used the means, discovered by medical men, for the protection of the soldier and the citizen as well, against typhoid, small-pox and the many menaces of army life.

I ask you to ask your people, yes, and your legislators, who it was that they demanded should be placed nearest to the line of combat to care for their sons, when sick or wounded in battle. Did anyone then, think of sending, in charge of the flower of the land, the cultist, the medical faddist, who is insistent on receiving equal rights with the trained medical man, in civil practice?

Not a legislator, not a congressman, not a mother nor a father, not a single normal citizen, would have consented, for a moment, to have had his son receive an "adjustment" for a piece of schrapnel in the spine nor for a soldier suffering from pneumonia or an attack of gas.

No, they called out the best trained skill there was in the great medical schools of the country, they demanded that the most efficient of the medical men in each community should have charge of the life and the health of the soldier. It was so in every country in the war. Why, if there is no reason, should every government on earth call on the men of scientific medicine, and on no others, for the sanitation, the medical care and the surgery of their soldier citizens?

Are governments, the world over, so blind or so stupid that they cannot see the virtues of faddist practice? Are they so indifferent to the welfare of the men who are defending them that they must insist that they be cared for by a decadent profession? Only one so blind that he will not see would try to claim such reason.

Again I want you to go home and ask your people, and ask your legislators, whom they place in charge of the sanitation and the public health of your communities. Would they trust the management of an epidemic of diphtheria or of ty-

phoid fever to any one but a carefully trained man of scientific medicine? Would they drink the water in their home town or in the statehouse, that was not attested pure by methods developed and approved by scientific medical men? Would they pass laws to test the purity of the food supply of their families by any methods which have been offered to the world by any group of faddists or cults?

Did any claimant to the confidence of the public ever, in the history of the world, offer a means of building the Panama Canal, until self-sacrificing men of the medical profession gave literally their lives to prove that malaria, "the executioner of the tropics", was caused by the mosquito?

The scourge of the south, yellow fever, has been made almost an unknown disease, in civilized countries through the efforts of scientific medicine.

Where small-pox exists today it is considered a reflexion on the intelligence of the people where vaccination has not been accepted.

Through the knowledge give to the world by scientific medicine and by it alone has typhoid been brought to the point of control where its sources can be found and its ravages checked. In the Spanish-American War, and in all wars preceding it, there were more deaths from typhoid than from battle casualties.

Was it scientific medicine or was it some vociferous cult that found the information and devolved the means for its application to the conditions of the World War so that typhoid was practically an unknown factor in camp or battle area?

There is not a field of endeavor in public health, in sanitation, in housing, in tuberculosis work, in water supply, in sewage disposal as well as in the treatment of disease where scientific medicine has not first been called on to furnish the basis for the work and then been asked to measure and judge the results.

Fresh air in the home and factory, proper light in schools and industrial plants, individual drinking cups, "swat the fly" campaigns, proper care of teeth and eyes, and every modern common devise for the conservation of health and life has been based on the facts and developed through the work of men of scientific medicine.

Let these facts and many more which occur to all of you, be published by you to the world and by that I mean to your own community, and you will be pleased to see the readiness with which they are accepted.

Read the history of the noble profession to which you belong. You will find in it inspiration for the work which so often is heavy with responsibility and discouragement.

You will be less disturbed if you find that your generation is not able to solve all the problems which have worn the minds of medical men from earliest history.

You will be proud, and be justified in your pride, to claim that all the advance that has been made in the care, the protection, and the lengthening of human life has come alone through the untiring and self-sacrificing and unselfish efforts of men who have worked in what I am proud to call scientific medicine.

SOME EASILY OVERLOOKED MANIFESTATIONS OF CIRCULATORY FAILURE WITH REMARKS UPON DIAGNOSIS AND TREATMENT*

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A good many years ago a friend and I were walking over Walnut street bridge, Philadelphia, discussing the physical diagnosis of diseases of the heart. In our youthful ignorance we agreed, like the three tailors in Tooley street, that it was a closed chapter, that all was known that ever could be known, and we had best devote our untapped energies in physical diagnosis to some other branch of medicine if we wanted to make discoveries.[1] Little did we think that in a small provincial town in England a man at that very moment was blazing a new path in cardiac diagnosis, and that his work was to revolutionize a subject we believed to be perfect and unchangeable.

Sir James Mackenzie and those who have trodden in his footsteps have created a new science, and with it a new language, that would sound strange to the ears of Corvisart, Stokes, Bamberger, Skoda, Grainger, Stewart, and Rosenbach.

If I venture tonight to touch upon the subject of heart disease, I am standing with one foot in the old world of physical diagnosis and with the other in the new world of laboratory diagnosis. The new, be it remembered, has not displaced the old, the one supplements the other.

I want to speak of some manifestations of cir-

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1. In this connection it is interesting to note that Andral in 1829 wrote the following: "Since the publication of the immortal researches of Corvisart, and of numerous other works subsequent to his, which have still further enlarged the dominion of science, the history of diseases of the heart and its membranes is to be regarded as almost complete."

culatory failure, the picture of which is very obscure, often misleading the unwary and sometimes the expert. Even Mackenzie—*il maestro di color che sanno*—I am sure has sometimes gone astray.

The term "failing heart power" gives the impression that the heart alone is concerned in the pathogenesis of the symptoms. That is our traditional mode of expression, but it is inadequate and incomplete. Hence, before going further I want to make it clear that when I speak of failing heart power I have in mind the entire circulatory apparatus, which though anatomically divisible into heart, arteries, veins and capillaries—is physiologically one great organ. Heart failure, therefore, nearly always means circulatory failure. The need to emphasize this conception comes from the fact that we have not hitherto given enough attention to the other components of the circulatory system, the heart having completely filled our horizon. Studies on venous pressure, capillary circulation, gaseous exchange in the lungs, and osmosis, are throwing a flood of light on the subject of failing circulation.

As a rule the earliest sign of failing heart power is shortness of breath on exertion. When that symptom obtrudes itself few men fail to recognize its meaning. Nevertheless, mistakes are common. If the dyspnea is pronounced and is associated with coughing and wheezing, the diagnosis of asthma is often made. If a murmur is detected, the term "cardiac asthma" is generally used; in the absence of a murmur the diagnosis is apt to be plain asthma.

Many men, especially those who have not served in a large municipal hospital, hold to the view *sans* murmur no heart disease. This is a very pernicious doctrine, for it means overlooking many instances of failing heart at a time when the condition is remediable.

I hear some one say if no murmur is present, how can you tell the heart is diseased? By ordinary physical examination, which usually reveals the following departures from normal:

1. Apex beat is a little to left of normal position.
2. Percussion reveals enlargement of area of cardiac dullness.
3. Auscultation is at times the least informing, although to the trained ear something in the sounds, a muffling of the first sound, perhaps a prolongation of it, is suggestive.

The electrocardiograph proves helpful in localizing myocardial lesions, but in daily practice is rarely available.

What about arhythmia? Arhythmia may be absent and yet the heart may be gravely diseased; the reverse is also true. Extrasystoles and auricular fibrillation while often found in failing hearts, are entirely compatible with normal function, and of themselves and by themselves are not of much prognostic value.

A gallop rhythm may be significant if it is of the cantering type, that is if produced by a duplication of the first sound like the Greek anapest meter.

One other sign is often present in cases of early cardiac disease—a few moist rales at the bases of the lungs on deep breathing. They may be heard only on one side, usually the one on which the patient is lying. Naturally when the stage of edema of the legs is reached, the diagnosis is no longer in doubt.

Gastric symptoms sometimes usher in failing circulation. Even if not the first manifestation, they may come to dominate the scene.

The following case is an illustration of what I have in mind. A married woman twenty-seven years of age consulted me on account of persistent vomiting. She stated that she had been well until April, 1922, when her vomiting began suddenly. She stayed in bed for a week and the vomiting ceased, but she continued to be a little short of breath, although able to lie flat, and had occasional attacks of palpitation. Since that time her chief trouble has been recurrent, painless vomiting. Her previous history is meager in points of significance. She has never had rheumatism; only a slight tonsillitis, no chorea. She was married eight years ago and has two healthy children, one seven years and one eighteen months old, with a miscarriage between them.

The attacks of vomiting, with the emphasis she laid upon them to the exclusion of other symptoms, made us at first suspect some primary gastric disease. Examination, however, showed a double mitral murmur, a large heart and a large liver without any edema anywhere. In this patient, the cardiac failure was rather advanced and yet vomiting was the chief symptom. It was evidently connected with congestion of the gastric mucosa and liver.

Another striking feature in this case was the marked enlargement of the liver without visible edema. One usually expects some degree of dropsy when the liver is greatly enlarged as a result of cardiac decompensation. It is, however, possible, as this case illustrates, to have the decompensation fall principally upon the liver. That organ can hold an enormous amount of blood. I am in the habit of comparing it to a lock in a canal—for a time it can hold back large quantities of stagnant blood, eventually, however,

there is a spilling over with the appearance of edema and ascites.

The important point in this matter is that such enlargement of the liver without familiar signs of decompensation is liable to lead to diagnostic error. In several instances I have seen the diagnosis of malignant tumor made.

Particularly difficult are the cases of mitral stenosis with enlargement of the left lobe of the liver producing a prominent tender epigastric tumor. Since the murmur of mitral stenosis is often inaudible, the cause of the enlargement of the liver will not be suspected, and the tumor will be interpreted as a malignant growth.

On one occasion a surgeon asked me to see a patient prior to operation for gastric cancer. There was vomiting, failing appetite, loss of flesh and the presence of a large tumor-like mass in the epigastrium. I found that the case was one of mitral stenosis with a left lobe enlargement of the liver.

Cough is a common feature of beginning as well as of advanced decompensation. In rare instances it is so severe as to be an overshadowing symptom, as in the following case: Mrs. T., a widow sixty-eight years of age, had for some time been troubled by a harassing, unproductive cough and insomnia. My first impression when I saw her was that she was suffering from chronic bronchitis with some degree of emphysema.

To my surprise I found on examination that the apex beat was in the anterior axillary line. There was no murmur, no arhythmia, no effusion, no edema. Treatment on the basis that the cough was an expression of cardiac weakness proved helpful, but not for long. The damage to the myocardium was beyond repair.

Here the old fashioned methods of inspection, palpitation and percussion gave the required information. The Hippocratic practice of using the eyes and hands and that of the immortal Auenbrugger of using the fingers were quite adequate for the needs of the situation.

That myocardial weakness may simulate malignant disease of the gastrointestinal canal may at first sight seem unlikely, but the following case as well as some others I might cite prove it:

I was once called to Johnstown, Pennsylvania, to see a man, fifty-four years of age, who was suspected of having malignant disease either of the stomach or bowel. The chief symptoms were great weakness, an epigastric pressure feeling with eructation of gas on exertion, poor appetite, loss of flesh and increasing despondency. When I heard the story and saw the patient, I was quite prepared to accept the diagnosis. An x-ray study of the gastrointestinal tract had been made but the pictures gave little information. On examination I found that the heart was somewhat enlarged, the sounds extremely feeble and the blood-pressure low. There was neither arhythmia nor murmur. With some trepidation I made a diagnosis of myocarditis—using that term in the clinical sense—and attributed everything to circulatory weakness. Under digitalis and other appropriate treatment the patient recovered in a short time and afterwards visited me in Philadelphia. The heart is still slightly enlarged but fully competent. I must confess that when I took the train home from Johnstown, I asked myself the disquieting question "Is it heart disease or is it latent cancer?"

Much more common than the resemblance to malignant disease is that to the severer forms of nervous or functional dyspepsia. Sometimes the gastric manifestations in early circulatory failure, as in the first case I mentioned, are so prominent that they focus the attention upon an innocent organ, the stomach, rather than upon the heart.

The following case is illustrative of this fact: L. P., physician, fifty-four years of age, had "suffered from gas"—bloating and belching—and from signs of epigastric pressure for several years. A noted gastro-enterologist whom he had consulted lavaged and dieted him but to no avail. When I saw him I found in addition to gastric symptoms, which were the only ones he stressed, a little shortness of breath and a sense of great exhaustion. Physical examination showed some enlargement of the liver, decided cardiac dilatation, with a distinct *bruit de galop*. The case was clearly one of progressive myocarditis with predominantly gastric symptoms, an interpretation confirmed by the denouement.

Ascites as a solitary transudate or exudate is attributed to cirrhosis of the liver, to tuberculous peritonitis, or to malignant disease. Nevertheless such a silent ascites may be due to cardiac failure and is an exception to the rule that ascites, dropsy and pulmonary congestion and perhaps hydrothorax are usually found in association in cases of heart failure. Adherent pericardium is the chief cause of ascites as a monosymptomatic expression of heart failure. Occasionally the cause is a chronic myocarditis. The diagnosis can be made by careful attention to the physical signs, in particular to the presence of marked increase in the area of cardiac dullness.

Hydrothorax, especially one sided, may be the only objective manifestation of a failing heart. As a rule the effusion is on the right side, but it may be on the left. If the case is one without a murmur, the cause of the hydrothorax may be

misinterpreted. An overlooked hydrothorax is often the obstacle to successful digitalis therapy—when the effusion is removed, the drug takes hold.

Pulmonary Edema – I have in mind the sudden so-called apoplectiform edema of the lungs, which sometimes occurs in cases of mitral stenosis. It is terrifying both to the patient and to onlookers. It may come on without the slightest warning, and has appeared occasionally during or after labor. In addition to sudden onset, a tendency to recur is one of its striking features. If properly treated, it is rarely fatal, but the physician must be familiar with its significance and management.

Pulmonary hemorrhage, as a symptom of cardiac disease, is quite well known. It is most frequent in mitral stenosis, the murmur of which, as I have already stated, is at times inaudible. That explains a fact well known to sanatorium physicians, that cases of hemoptysis due to mitral stenosis are very often diagnosed as pulmonary tuberculosis. One should always, in sudden pulmonary hemorrhage, think of this fact, especially if the patient is a young person.

A few years ago I pointed out the occurrence of *psychoses* during the course of heart disease. It is very easy in such a case to conclude that the patient has some form of independent insanity, when in reality the mental manifestations are dependent upon the heart lesion, more rarely upon digitalis.

One other subject because of its practical importance should be mentioned. As you know, in cases of failing heart with dropsy, the urine often contains albumin and tube casts. To many minds these urinary findings are proof of nephritis, of some form of Bright's disease. Such an opinion would receive corroboration if the physical examination showed a regular, murmurless heart. When not called nephritis, such cases are spoken of as cardiorenal or as chronic parenchymatous nephritis with hypertrophy and dilatation of the heart. The following story illustrates the point I wish to make:

One day I came into my wards at the Philadelphia General Hospital and asked the intern what he had for my class. He replied, "I have a good case of Bright's disease."

The patient had just had a hot pack and seemed greatly exhausted. On examination I found that he had general anasarca, and a perfectly regular heart without murmur. The urine contained a large amount of albumin. To all appearance the diagnosis was justified. Examination, however, showed that the case was one of great dilatation of the heart with secondary passive congestion of the kidneys. The hot packs were stopped, digitalis was administered and complete rest enjoined. In a short time the patient left the hospital with good compensation and normal urine.

The differentiation between cases of nephritis with secondary cardiac failure, which are the true cardiorenal cases, though better called renocardiac, and cases of primary heart disease with passive congestion of the kidneys, falsely called cardiorenal, is not easy. The phenolsulphonphthalein test is often fallacious, giving reduction in both types. The blood chemistry is likewise of little help. In time the therapeutic test may determine the correct diagnosis, for the primary cardiac cases often recover from the attack, while the true renal cases generally go on to a fatal termination. For rapid bedside distinction the character of the urine is of great value. In cases of congestion of the kidneys secondary to heart failure, the urine is dark, strongly acid and throws down a heavy pinkish sediment of urates. This does not occur in true nephritis. A feature in the history is also important, namely that heart cases often have a record of repeated admissions to hospitals, each for a cardiac break. This is not the history of nephritis.

Treatment—I now come to the subject of treatment. It is not necessary to dwell on the well known principles of rest and diet and digitalis.[1] I want to emphasize the importance of not overlooking a large effusion, which acts as a hindrance to the heart and prevents it from reacting properly to treatment. A single tapping may suffice to change the case completely, or it may be necessary to tap two or three times. Recently a patient, W. M., fifty-seven years of age, came to see me on account of great prostration and shortness of breath. He had been under treatment for heart trouble, but had been steadily getting worse. I found with aortic insufficiency all the characteristic signs, but that was not sufficient in itself to explain the man's disability and dyspnea. The discovery of a large effusion seemed to be an adequate explanation. I had him tapped and a quart of fluid was removed, with the result that he has been a changed man, and is eager to resume his occupation as a teacher of manual training.

Sometimes despite every effort the dropsy persists. The integument is full of water, the face puffy and cyanosed, the serous cavities filled, the genitalia swollen, the lower limbs enormously enlarged. The patient has to sit up night and day, gets very little sleep, and is in an altogether pitiable condition. I have seen patients in this state recover completely from the dropsy and the

1. When digitalis fails, apocynum canabinum may be used.

serous effusions and live for several years as a result of a simple procedure, very ancient though forgotten by many, namely scarification of the legs. The following case is an illustration:

Mrs. C. H., forty-two years of age, married, was seen on September 21, 1921, with Dr. I. V. Levi. The patient had been dropsical since July. The urine was very scanty—eleven ounces in twenty-four hours—and contained albumin and casts. She had been digitalized several times, and had come to have an absolute intolerance for the drug. Whether given orally or hypodermically it always produced immediate nausea.

I found her sitting up in bed; her face puffy, the cheeks purple, the lips of a maroon color. She was dropsical from head to foot; her legs were enormous; there was fluid in the abdomen and probably in the chest. The heart was enlarged to the left and irregular, and at the apex a blowing systolic murmur could be heard.

The heart rate on auscultation was 156, the pulse at the wrist 86, a deficit of 70 beats.

As there was no preparation of digitalis that had not been tried in the patient, either by mouth or hypodermically, there was no profit in persisting in its use.

At my suggestion the patient's legs were scarified with numerous incisions on the outer and inner surface below the knee. The result was wonderful. The anasarca entirely disappeared from the skin, and the patient was able to go home. I saw her again, and found her limbs of normal size; there was no edema but a well marked ascites was still present. This was removed by tapping.

Early this past summer I was walking through the lobby of an Atlantic City hotel when a man accosted me, and asked me to come over to meet his wife. I was somewhat non-plussed as he was a stranger to me, nor could I recall having seen the lady introduced as his wife, but when she told me her name, I remembered her at once. It was Mrs. H., the dropsical woman whom I had scarified two years before. She seemed perfectly well and was enjoying life at the seashore.

It may not be without interest to those who take pleasure in medical history to quote something upon scarification which I found in a book called "The History of Physick; from the time of Galen to the beginning of the sixteenth century," by J. Freind, M.D. "In a work by Sylvius de le Boe this author (de le Boe) relates from Asclepiades the manner of curing an Anasarca very exactly. This is by making incisions on the inside of the leg, about four fingers breadth above the ankle, as deep as generally those in bleeding are made. At first a little blood issues out; after, there is a continual discharge of water, without any inflammation, so that the aperture cannot be closed, till the humor is spent, and the swelling gone down: and this drain cures the distemper without any internal medicine. Leonides the Alexandrian, an author who lived after but near Galen's time, and whose remains we find chiefly in Aetius, says further, that if the incisions in the legs do not make a discharge quick enough, some ought to be made in other parts of the body; in the thighs, in the arms, or in the scrotum, if swelled, by which means a great quantity of watery matter may be evacuated. Archigenes adds, that by these scarifications, not only the swelling of the thighs and legs, but that of the belly has been found to subside. And, no doubt, where an Ascites is attended with an Anasarca this method may succeed in some degree; though in a simple ascites it must be ineffectual. The operation itself is mentioned by Hippocrates; and has been practiced from his time, down to our own days, with great success."

I once measured the amount of fluid by having a double-bottomed tray made on which the patient rested her feet. We collected 35 oz. of serum a day. That is by no means as much as is drained off in some cases, but it cannot be measured because it soaks into the dressings.

Southey's tubes may be used, but they have no great advantage over scarification. Infection is rare in either case, the serum being in a measure bactericidal.

I usually make about six cuts an inch to an inch and a quarter long on the outer and inner aspects of the leg below the knee. The incisions are carried through the integument into the subcutaneous cellular tissue. A little blood may flow at first, but it soon gives place to a continuous stream of watery serum.

When a patient recovers from typhoid fever or pneumonia, the credit seldom belongs to the doctor directly. The vis medicatrix naturae left to herself is capable of battling successfully with many acute and chronic infections. In cases of advanced circulatory failure with serous effusions, general dropsy, inactive kidneys, and the whole train of well known symptoms, nature left to herself lets the patient die.

But when we succeed, either by drugs or by scarification, in restoring the patient to fair health, then we have achieved a real triumph. Then we have fulfilled one of the greatest missions of the physician—we have done what nature unaided could not do.

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THE HYPERTENSION SYNDROME IN GENERAL PRACTICE*

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The subject of hypertension should be of great interest to all of us both personally and as physicians; personally because we belong as professional men to a group which is regarded as especially liable to the various disturbances associated with hypertension, and professionally because we meet with the evidences of this baffling syndrome so frequently, and so often with so little success. There is scarcely a branch of medicine in which the subject of blood-pressure does not at times obtrude itself in either diagnosis or treatment, and no factor so often daunts the spirits of the conscientious practitioner.

Apparently something about the taking of one's blood-pressure appealed to the imagination of the public from the very first, for it promptly became of so much interest that, perhaps some of us, at times may have wished that the sphygmomanometer had never been invented, but on the other hand the very interest of the public and the demand for relief of "high pressure", have forced us to give the subject the really serious consideration it merits.

The amount of this serious consideration may be gauged by the fact that in the literature in 1923 and the first six months of the current year, there are to be found over two hundred articles in the medical journals covering the various phases of the subject. A review of as much of this as has been available and of the standard text-books as well, is illuminating in one thing at least, and that is, that the whole subject is in a deplorable state of confusion, especially in regard to the etiology and treatment. There is one source of satisfaction, however, that the great number of observations being recorded, much valuable information is being gathered, new theories are being offered, older ones being disproven, a truer evaluation of data is being obtained and it would seem that a very much better understanding, if not a solution of the problem, may be hoped for before so very long in the future.

It is to be borne in mind that in using the term hypertension reference is not made to it as a disease *per se*, but merely as a prominent symptom, often frankly secondary to many organic diseases, at other times appearing with no demonstrable organic basis, but with the certainty of organic disease following its persistent presence. In many instances the question arises as to which is primary and which is secondary, and the difficulties of treatment are obvious; it is no wonder that there exists so much dissatisfaction in general practice on the subject.

For the present discussion, hypertension is referred to more or less as an entity, some times the chief complaint of the patient, at other times found in the routine examinations for various conditions, or it may be discovered accidentally in individuals taking periodic physical examinations, or in others seeking life insurance. With or without symptoms it is of serious import, as, barring accidents or intercurrent infections, there is always a possible termination in cerebral apoplexy, cardiac disease or uremia.

Whether hypertension is increasing in frequency is a question that confronts us, and the answer would seem to be in the affirmative, although it is impossible to state categorically that such is the case or to give the rate of increase. The best indications are to be obtained from the records of the vital statistics, and probably next to these, the records of our larger life insurance companies. The latter represent selected risks, and therefore may not be considered as an accurate index of the community as a whole, but if the causes of death for different periods of years be compared, very suggestive data may be obtained. Hypertension may be assumed as occurring at some time in cases reported as deaths from cerebral hemorrhage, thrombosis, chronic nephritis and many cases of heart disease, but this does not include all of its possible occurrences. On the other hand, there are fashions in diseases, and cardiovascular renal disease, and especially heart disease, are sometimes reported as the cause of death without proper certainty of diagnosis. In the living, the increasing frequency of physical examinations of the healthy and apparently healthy, the very general requirement in the last few years of blood-pressure readings in life insurance examinations, and the routine use of the sphygmomanometer in practice nowadays, may give an impression of increase in recent years that is more apparent than real. Statistics indicate that the death rate of individuals over forty-five is relatively higher than it was fifteen years ago, which is a very significant fact. Cerebral hemorrhage, organic disease of the heart and arteries, nephritis and cirrhosis of the liver are all showing a decided increase in frequency and of these, according to the U. S. Bureau of Vital Statistics, arterial disease showed the greatest increase of all. In Ohio, in the period from 1913 to 1923, of all assigned causes of death, 15.2 per cent were diseases of the circulatory system. In

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1923 there was an increase of 6,467 deaths from all causes over 1913, which is about proportional to the increase in population. The increase in deaths from diseases of the circulatory system, however, was 1,075, or 16.56 per cent, which indicates a definite and actual increase. Judging from the local reports in Columbus, it would seem that the rate was considerably higher than in the country districts, rather as one might assume to be the case. Unfortunately the nomenclature and classifications in statistics are incomplete and confusing; not all cases of diseases of the circulatory system are associated with hypertension. Bunn,[1] in a discussion of the deaths from heart disease, gives a chart of the incidence of such deaths in Ohio and states that at the age of forty-five and over, organic heart disease causes more deaths than any other disease.

In this table, the term organic heart disease undoubtedly includes not only valvular disease, but myocarditis, sclerosis of the coronary arteries, and in fact probably all cases manifesting cardiac symptoms, especially cardiac decompensation and very possibly many cases of sudden deaths of undetermined cause, but reported as heart disease for want of a better term. In this group, probably the great majority were really secondary to or a part of the hypertension syndrome, but just what per cent under the present careless methods of death reports, it is impossible to say.

Thus the question of the incidence of hypertension is in a state of doubt, but the fact remains that in general practice more cases present themselves for treatment and the tragedies of the syndrome seem more frequent.

Classification

Various classifications have been offered, but none is entirely satisfactory up to the present time. Warfield's[2] grouping is an illustration. He divides hypertension cases into two classes, subacute and chronic.

Under the former he groups the hypertension of pregnancy, eclampsia and the often more or less transient states associated with focal infections, exophthalmic goiter, acute nephritis, etc., in which the pressure usually returns to normal after the clearing up of the primary condition.

These do not belong to the present discussion, because the hypertension in such cases is usually an unimportant and transient factor, although it may be noted in passing, that Hinselmann[3] asserts that increased pressure in pregnancy is a valuable sign of impending eclampsia, and asserts that this syndrome is the result of a vasoconstriction due to a functional insufficiency of the vascular system. He would remove eclampsia and the kidney of pregnancy from the toxicoses and class them as overstrain of the vascular system.

It is of interest also as an etiologic suggestion, to note the observations of Peters[4] of Amsterdam in regard to the effect of renal decapsulation in cases of acute nephritis in which that operation brought about prompt reduction of the increased blood-pressure. The question cannot be answered at present, however, as to whether this lowering of the pressure, following the resumption of renal function usually promptly occurring after this operation, is due to the excretion of pressor substances abnormally retained in the blood, or to the mechanical relief of the increased resistance to the blood flow in the congested kidneys.

Under chronic hypertension, Warfield believes that most cases may be divided roughly into three groups. Group 1, includes hypertension with chronic nephritis; in such the clinical picture is that of chronic renal disease and the high blood-pressure is merely incidental. Albuminuria is variable, but persistent, casts are present, renal function is low, edema occurs sooner or later; the systolic pressure is often over 200 and the diastolic 120/140, and the termination is in uremia or cardiac decompensation according to which organ gives out first. The cases may be readily recognized and are to be considered and treated purely as cases of chronic nephritis.

Under the headings, group 2, essential hypertension, and group 3, arteriosclerotic hypertension, Warfield and some others, attempt to differentiate two classes of individuals in whom the predominating symptom is high blood-pressure, with an absence of renal symptoms, but with certain characteristics which he considers diagnostic and prognostic according to their type. Unfortunately, these distinctions are artificial and confusing rather than clarifying as they tend to suggest different varieties of disease, or separate disease entities. It would seem best therefore, to combine these two groups under the one term of essential hypertension to include all cases in which there is a definite persistent increase in the systolic or diastolic pressure unassociated with those recognized organic causative primary conditions such as chronic nephritis and some cases of cardiac hypertrophy resulting from valvular lesions.

The failure to recognize the secondary character of many of the symptoms of the hypertension syndrome is a source of much of the confusion and of the attempts to form various groups and types as representing different varieties of disease; the essential thing is, that there is a definite persistent period of increased pressure which sooner in some cases, later in others, leads

to organic changes in the circulatory system and the organs dependent there on, with resulting disturbances dependent upon the type of individual and his anatomic weaknesses. If we were all built like the "wonderful one hoss shay" with each part of our circulatory system built as strong as each other part, we too would "run a hundred years to a day", growing old slowly, with moderate hypertension, with gradual evenly disseminated arteriosclerosis resulting until an intercurrent infection would bring the termination.

As it is, however, one group of individuals may have inherited hearts of poor muscular quality, or through lack of proper exercise during adolescence, or through slothfulness and over-indulgence are obese and have more or less fatty hearts, when such individuals reach the danger period, the fourth and fifth decades, and acquire hypertension, their hearts soon reach their limit of hypertrophy and dilation follows with all the symptoms of cardiac decompensation. This is not a disease entity, but merely the results of the persistent high pressure in individuals with inherited or acquired cardiac weakness.

Another group may have inherited arteries of poor quality; as Osler observed years ago, there appear to be families with this anatomic weakness; or individuals through overexercise in youth, various infections, especially syphilis, dissipations, etc., may acquire weakened vessels, which under the strain of hypertension undergo premature, patchy sclerosis, especially of the cerebral vessels, and cerebral hemorrhage is the usual termination.

A third group may be anatomically sound originally, but by their manner of living, especially in over eating and over drinking, by lack of exercise, with possible presence of focal infections, inattention to proper elimination through the skin and intestinal tract, may throw excessive work on the kidney, and these organs already taxed to their limit, under the strain of hypertension slowly but steadily fail and uremia is the termination to be feared. The practical deductions to be drawn are that period of essential hypertension of at present unknown etiology is extremely variable in different cases, in some it may last for years with no apparent interference with the general health, so that the discovery of a moderate increase in blood-pressure alone, must not be stressed too seriously; on the other hand it must be remembered that its presence is always a source of increased body-strain which will seek out anatomic weaknesses, especially of the heart, blood-vessels and kidneys, and in the presence of such may lead to resulting serious or fatal impairment.

One must therefore obtain all of the available data in such cases, the family history, the personal history, occupation, habits of life, make a careful physical and clinical examination and so construct a clinical picture which will give an insight into the present status of the patient and the probability for his future. In this way many an individual may be relieved of his fears unduly excited by the knowledge that he has, "high blood-pressure", while others may be warned of the dangers in store and impending tragedies averted and perhaps indefinitely postponed.

ETIOLOGY

Practically everything that happens or can happen to an individual from birth, and even before birth, to middle life has been mentioned as a cause of hypertension, and very probably all of them contribute a portion to its production. Prenatal influences of heredity, the various diseases of childhood, the infections of adolescence, the character of home surroundings, dietary influences, under or over nutrition, occupation, habits, in fact all the vicissitudes of human life add their bit to the wear and tear of our organs and tissues, while some develop prematurely the hypertension syndrome with all its dangers, many others, paralleling them very closely in life conditions, pass on to advanced years, with only the slower changes which we expect with old age.

This is strikingly shown in the table drawn up by Fisk,[5] analyzing 13,308 cases of normal blood-pressure in which systolic pressure was from 20 mm., above to 15 mm., below the standard for age and comparing them to 1,021 cases in which the systolic pressure was from 20 to 40 mm. above the same standard for age.

In this table you see depicted many, if not most, of the factors often ascribed as causes of high blood-pressure, such as high protein feeding, alcohol both in moderation and in excess, the use of tobacco in moderation and also in excess, defective tonsils, caries of teeth, recession and pyorrhea and other dental defects, constipation, glycosuria and overweight. In almost all of these the difference in the incidence in the association with high pressure is strikingly small, except in overweight, where there is enough to appear of some significance.

From the study of this table two questions arise. First, have these factors, with the exception of overweight, any influence in the hypertension syndrome, if so what or how great an influence? Second, is there any specific, at present unrecognized, source of high blood-pressure?

In reply to the first query, it is hard to disregard fairly long established ideas or theories; but we must be ruthless where the truth is concerned,

especially if conservatism is holding us back from the proper treatment of such cases. It may be fairly assumed that all of these factors, alone or in combinations, act adversely, but the evidence points to the belief that they merely increase the wear and tear of the tissues, and that none of them is specific, nor any of them the important causative factor that has been believed. It may be that even overweight should also be included in the same category, as merely an adjuvant to the main underlying factor or factors, and that it acts largely mechanically in increasing the demands of the circulatory system, just as an oversize truck body on an undersized motor will cause excessive tension and wear on the engine, so in the obese a greater strain is thrown on the cardiac vascular system from not only the actual carrying of so much extra weight, often on a small frame, but also by the necessity of forcing the blood through the tissue infiltrated with fat.

And so it is with many other factors which have been cited as etiologic factors.

Heredity has been mentioned by many writers, and while in endowing an individual with deficient kidneys, blood-vessels or heart muscle it may determine the character of the later stages of the clinical picture and lead to the final outcome, it is difficult to see how it influences the primary state of pure hypertension.

Endocrine influences have also attracted much attention in recent years. The knowledge of the action of pituitrin, adnephrin, the opposite clinical state and low blood-pressure of Addison's disease, the appearance of the so-called climacteric hypertension in women, the often associated hypertension with hyperglycemia and hyperthyroidism, of necessity raised the question of internal glandular secretion influence. Endocrinology is a fascinating study and it is tempting to ascribe to the activities of these organs diseased conditions which are not as yet explained, but no definite knowledge has been arrived at as to whether excessive, deficient or imbalance of secretion of the ductless glands play more than an aggravating or secondary action in the production of hypertension.

Psychic and nervous influences will elevate the blood-pressure undoubtedly; Daland, years ago

A Study of 1,021 Cases of High Blood-Pressure and Related Impairments and Living Habits Compared with 13,335 Cases of Normal Blood-Pressure[5]

Physical Defects and Influential Living Habits	Normal blood-pressure 13,308 white males (20 mm. above to 15 mm. below the standard) Per cent all ages	High blood-pressure 1,021 white males (20 to 40 mm. above standard for age) Per cent all ages
High protein diet	38.4	38.5
Excess of tea and coffee	40.8	44.3
Alcohol, moderate	6.9	8.8
Alcohol, excess	.6	1.1
Tobacco, temperate	12.1	13.8
Tobacco, excess	33.1	31.
Functional heart signs	5.6	9.6
Valvular defects	.8	2.4
Hypertrophy	2.2	7.8
Myocardial changes	.1	1.0
Rapid pulse (90 and over)	7.7	18.7
Arterial changes	17.8	35.2
Tonsils, defective	26.5	26.9
Caries of teeth	8.1	9.7
Recession and pyorrhea	14.4	19.4
Heavy dentistry, x-ray advised	41.4	42.7
Insufficient dentistry	5.4	7.2
Gastric, acid stomach, etc.	17.8	17.9
Constipation	39.2	38.4
Albuminuria	14.7	18.1
Casts	3.9	6.6
Pyurin (marked or persistent)	2.7	3.5
Glycosuria	3.8	5.0
Overweight, 10 to 15 per cent	9.3	11.0
Overweight, 15 to 20 per cent	7.5	9.5
Overweight, over 20 per cent	12.6	25.5

drew attention to the effect of automobile driving, especially through crowded thoroughfares; E. Konig[6] took the blood-pressure of several hundred patients before and during surgical operations and found the pressure uniformly elevated before the anesthetic, dropping consistently under general anesthesia, but remaining high in operations under local anesthetics; he ascribed the rise in pressure to mental effect. Hediger is convinced that a mentally conditioned instability of the vascular system plays an important role in the development of hypertension.

Jansen[7] and his colleagues state from observations on animals and man, that the main regulation of the blood-pressure is on the organs controlled by the splanchnic nerves, and that the compensatory action is impaired in patients with hypertension.

Kylin[8] believes the whole condition (hypertension) to be a symptom of a disease of the vegetative nervous system.

Capillary spasm with or without nervous influence has also been mentioned.

In all of these the influence of the nervous system may be granted as part of the mechanism of increasing the blood-pressure, but it has not been demonstrated as yet as a primary force, but appears to be rather acting secondarily to stimuli outside of the nervous system. In the face of so much confusion and so many theories, the most rational plan would seem to be to seek for the presence in the blood-stream of hypertension patients for the presence of some pressor substance, perhaps a normal constituent, but which if retained or accumulating in the blood from faulty elimination, has the effect of causing slowly persistently increasing the blood-pressure.

F. Hogler[9] in testing the action of blood plasma in the cat's intestine found that the blood plasma hypertension cases had a stronger action than that of normal individuals.

Maliwa[10] in determining the protein cholesterol and bilirubin in specimens of blood drawing large quantities, 350 to 500 c.c., of blood, felt that he was able to make some suggestive distinction in cases of high blood-pressure.

The most significant of all thus far would appear to be the report of the work of Ralph Major and Walter Stephenson, in the Bulletin of the Johns Hopkins Hospital for May and June, 1924, in which they found a substance in the normal urine, methyl guanidine, which causes a marked and prolonged rise in blood-pressure. This substance is a product of metabolism and if it is shown to be decreased in excretion in cases by hypertension, it will point very strongly toward its retention in the blood with consequent elevation of the pressure. Some such activity of this or other substance would explain the whole syndrome better than any other theory. Take a typical case—history; a young individual passes through adolescence and early adult life exposed to the average vicissitudes of life, is active, often athletic, has perfect elimination through the kidneys, intestinal tract and skin; at thirty there is a tendency to slow up, the individual becomes immersed in business or family cares; the body weight usually shows an increase, a proof of the decrease in metabolic activity; in average healthy individuals the earlier good habits carry them through this decade without apparent detriment. Forty arrives, the "dangerous age"; the tendency toward sedentary habits becomes more marked, the weight increases, constipation often becomes a habit, skin elimination is decreased with increasing load thrown on the kidneys, conditions certainly favoring a decreased output of the products of metabolism and the retention of a theoretical pressor substance becomes not only possible but probable, with the development of an increase in the blood-pressure reaching from the higher limits of normal to an actual hypertension according to the amount of pressor substance retained. Hypertension once produced acts in a vicious circle and tends toward becoming persistent with slow but steady rise. During this stage any of the secondary factors, such as improper diet, sedentary habits, dissipation, tobacco, general or focal infections, constipation, endocrine disturbances, and especially overweight, by increasing or disturbing metabolism, increase retention, with consequent increasing pressure. Thus the primary stage, essential or idiopathic hypertension can be comprehended, the absence of organic basis understood and the variations in different individuals more or less explained. From this stage on, the progress is even more clearly defined; the hypertension once established, the heart, blood-vessels and kidneys bear the brunt and inevitable organic changes ensue, the final clinical picture depending upon anatomical weaknesses, inherited or acquired, intercurrent infections or other more or less accidental factors.

PATHOLOGY

The pathology the syndrome as a whole is chiefly the pathology of the secondary changes in the heart, blood-vessels and kidneys.

In the stage of essential hypertension, no definite pathology has been demonstrated. Attempts have been directed mainly toward histologic alterations in the arterioles and capillaries, Rouget cells, etc., but without definite results.

Warfield[2] says that in autopsies in patients

with high blood-pressure but dying from other causes, the renal tissue practically always show an increase of connective tissue about the finer blood-vessels, even in cases showing normal renal function during life. He continues, "The criterion is not what the morphologist finds but what the kidneys are capable of doing during life. Kidneys, which are functionally normal are for all purposes normal kidneys." This is rather a dogmatic assertion; much has been done in the study of renal function, but our criteria of normalcy are at present arbitrary, and one would be rather presumptuous to assert that we have reached our limits in this direction.

It may be that in these microscopic changes in the kidney are the causes of the impaired elimination of some such substances as methyl guanidine, or similar substances and that this is the true initial pathology of hypertension.

Treatment

The most interesting phase of the discussion of hypertension to the average practitioner is very naturally, the treatment, and yet an occasional review of the whole subject and especially of the investigations under way is necessary for a better understanding of the problems involved in the management of these cases and their treatment. We have drugs that will reduce blood-pressure and the temptation would be to use them unless one grasps the fact that this is worse than useless, in that it is merely treating the effects without attacking the underlying cause or causes, and therefore vasedilators have little or no place in the treatment except in emergencies or in the later stages, to avert impending catastrophies. From such a discussion also, it is evident that there is no routine treatment for patients with hypertension, and nowhere in medicine is the dictum more applicable, "to treat the patient and not the disease", and nowhere else is there more demand for sound judgment on the part of the practitioner.

A correct diagnosis must be made and this depends on much more than the mere use of the sphygmomanometer; a careful history is a necessity as is also a thorough physical examination, including the use of the ophthalmoscope if possible; the examination of the urine and the blood chemistry to finally complete the clinical picture and establish the diagnosis. By such means it is not difficult to recognize the early stages, the cases of pure essential hypertension, with at present no recognizable organic basis, and also the later stages with distinct evidence of pathology in the heart, blood-vessels or kidneys, or combinations of two or all three, and estimate with a fair degree of accuracy the probable termination. This is of course, most readily accomplished in hospitals with laboratories at one's command, but a fair estimate at least may be made anywhere and without laboratory equipment except a sphygmomanometer, test tube and specific gravinometer, as to whether a patient is in the early stage of essential hypertension or in more advanced stages with secondary organic changes.

From the history, the younger the patient, the fewer the symptoms and the shorter their duration, the greater the chance of an early stage. One should never be content with one blood-pressure reading; marked variations are characteristic of essential hypertension. The higher the readings and the more fixed at different times of the day, the more likely is it that the patient has passed beyond the early stage. Kylin[11] drew attention to this, as did also Fahrenkamp,[12] who advised taking the blood-pressure twice a day at least, and in a series of three hundred and sixty cases he took the readings three or four times a day and those with sclerosis of the kidneys, the blood-pressure never went below 200 mm., even under rest and dieting, while in the essential hypertension cases, the pressure varied from 220 mm., to 160 mm., under rest, going up under mental stress, exertion, the use of tobacco, etc. In his belief such variations excluded kidney involvement.

Roemheld[13] advocates taking the blood-pressure in the morning before rising or eating as giving the most reliable insight into the actual conditions in the circulation. He believes that if the pressure at that time is approximately normal, the hypertension is probably merely functional.

If on physical examination the heart is not found to be enlarged or but slightly so, the process can not have been of long duration and the evidence is in favor of essential hypertension, but marked enlargement, points toward the later stages. Palpable radials are not usually present until the case is fairly advanced, hence this condition is not found in the early stage, or in pure essential hypertension.

In the ordinary urinary examination, the presence of albumen, persistently present or in any quantity, indicates the kidney involvement and the secondary stage of hypertension. The absence of albumen however, does not exclude sclerosis of the kidney, and in such cases the blood chemistry and renal function tests are of great value. If these aids are not available, the simple taking of the specific gravity of the urine voided at different times of the day is of great assistance. Should the specific gravity be found to be persistently low, practically fixed within a

few degrees, renal sclerosis may be fairly assumed to be present.

If the ophthalmoscope shows changes in the vessels of the retina, similar changes may be assumed in the finer vessels elsewhere, and beginning sclerosis taken for granted.

The greatest difficulty in the treating of cases of hypertension is not in the recognition of the condition or the stage of progress, but in the management of the patient and in a certain degree, the attitude of mind of the practitioner. The latter, especially in the early stages, may go to one or another extreme and either make light of the condition and practically ignore it, or, if he is an alarmist, he may frighten his patient unnecessarily and make him a neurasthenic.

Even in the later stages the treatment is too often perfunctory until impending tragedy compels serious consideration. This is partly due to previous unfortunate experiences in trying to manage similar cases, for it is often exceedingly difficult, in the absence of pain and other definite discomforts or symptoms to make a patient realize that there are dangers in store for him when those dangers are perhaps some years ahead, and it is even still more difficult to induce the average patient to take steps to avert the trouble.

Human nature has changed but little in 3,000 years, since Naaman went to consult Elisha and was "exceeding wroth" because instead of enacting a spectacular miracle, the prophet sent him forth to work out his own cure.

People come to us seeking relief of high blood-pressure; they want some wonder working medicine or other treatment that will cure them without any effort on their part, but there is no such treatment. They too, often resent and refuse to submit to changing their regimen of life, restricting their diet, easing up in their business activities, refraining from excesses, taking more exercises until actually forced to do so by evidence of failing kidneys, a laboring heart, or a cerebral hemorrhage.

When therefore, a patient of forty odd years consults us and we make a diagnosis of essential hypertension, the situation should be thoroughly explained in a common sense way, not to scare him into neurasthenia, but that he may understand what the future has in store unless he take steps to avert the dangers ahead of him. The family history, the physical findings and habits of living should be thoroughly studied. Should he have foci of infection, they should be cleared up if practicable, not with the promise that such procedure will "cure" his high blood-pressure, but that in themselves they are sources of danger and they may be aggravating his condition. His business activities should be curtailed, as the worry and tension of modern business life undoubtedly aggravate a rising blood-pressure. This does not mean that he should retire from business, but simply to fit the load to a machine that is showing signs of wear.

Next, the diet, and many sins have been committed in the way of dieting this class of patient. It is so easy to say, "eat no meats" that this has become a routine treatment. In the table given above, the per cent of hypertension cases in heavy protein eaters is negligibly greater than in those with normal blood-pressure with similar habits, and Strouse and Kelman[14] report some very interesting observations in feeding hypertension cases with liberal amounts of protein and even with that anathema, strong stock soups, with no increase of blood-pressure. Herrick[15] gives evidence along the same lines in his account of six patients who consulted him for "high blood-pressure"; they had all been put on a non-protein diet, and as a consequence had made up the deficiency with carbohydrates, and all felt worse, their weight had increased and their blood-pressure was greater than before. He gave them a fairly liberal allowance of proteins, but reduced their carbo-hydrates, and limited their total intake of food in calories to about three-fourths of their normal requirement. They all showed prompt improvement in subjective symptoms, their weight decreased and their blood-pressure was markedly reduced.

In all probability the non-protein diet was first introduced in former days when the hypertension cases were only recognized in the late stages when kidney changes were practically always present, and later the same diet was gradually extended to all hypertension cases.

In the same way, probably, the salt free diet was tried with apparent benefit with hypertension with renal symptoms. O'Hare and Walker,[16] however, recently carried out some striking observations in regard to the giving and restricting of salt in essential hypertension with the conclusion based on careful clinical study and blood chemistry analyses, that salt plays little part in vascular hypertension.

In other words, as has been suggested, "It is not what one eats, but how much"!

The general plan of diet in an essential hypertension case should be a fairly balanced diet of easily digested food, containing sufficient vegetable fibre to stimulate good intestinal action, and rather under the caloric requirements of the individual, especially if he be inclined to overweight.

Elimination—as has been suggested the majority of hypertension cases are throwing an excess

of the load of elimination on the kidneys to the neglect of the intestinal tract, the skin and the lungs. The first of these last named, may be helped by the diet, but all the emunctories will be aided best by regular systematic exercise. Some individuals resort periodically to various health springs and indulge strenuously in massage, hot baths and aperient waters. They often feel much better for a while, and indeed such measures accomplish a great deal and may be recommended when patients will not submit to other advice, but they cannot compare in results to properly graded, regular systematic exercise, the year round. Unfortunately, while this should appeal to intelligent people as rational advice, it is usually like the advice of bathing in the river Jordan to Naaman! In these days of strenuous business life the saving of time has become a fetish, and rapid transit facility and especially the automobile, threatens to destroy the art of walking, which is one of the best exercises for the middle aged individual. If hypertension is increasing it may well be that the automobile, which threatens to make us a sedentary race, is largely responsible.

Other methods of treatment have been suggested among them electricity in various ways and by artificial light. The results are transitory and unsatisfactory. Peemoller[17] in reviewing these methods of treatment, states that in the use of the d'Arsonval's apparatus and similar electric devices, the real cause of the lowering of the blood-pressure is the formation and inhalation of gas (nitrous oxid) generated by the apparatus. Hence these appliances are simply another method of applying nitrites, and the effect is purely evanescent and of no real benefit.

There is no treatment that can take place of the three main principles, to lighten the business load the patient is carrying, a common sense diet and elimination, chiefly by systematic exercise according to his ability.

In the advanced cases with secondary organic changes, each case must be considered on its merits and special attention directed toward the structures showing the more serious signs of overstrain. In some cases cerebral symptoms suggest a threatening hemorrhage, and a prompt reduction of the blood-pressure may be indicated through venesection; this is but temporary relief which must be followed by rest, mental and physical, elimination and diet modified according to the special indications. In decompensated heart cases or in threatening failure of the kidneys, the hypertension is disregarded until after the immediate menace has been relieved.

It is needless to stress the necessity of securing the cooperation of the patient, but it is just as well to emphasize that in obtaining this cooperation much depends upon the mental attitude of the practitioner and upon his tact, firmness and good judgment.

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ABNORMALLY LOCATED GOITERS*

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The development of the thyroid from the ventral aspect of the entoderm close by the ventral end of the first pharyngeal pouch caudal to the anterior portion of the rudimentary tongue is too well known to require extensive repetition. As the embryo enlarges a bud of thyroid tissue develops away from the pharyngeal ventrally and a canal remains behind to connect it with the point in the pharynx where the thyroid originated, the dimple at the apex of the circumvallate papillæ, the foramen cæcum. As the embryo develops the gland descends through the tongue, becomes bilobed and occupies its worldly position below the thyroid cartilage, leaving behind it a fibrous tract which is normally the obliterated tube connecting the gland with its point of origin the foramen cæcum. Dependent upon the time relation of the fusion of the hyoid bone to the time of descent of the thyroid this so-called thyro-glossal tract is located behind, through or in front of the hyoid bone. If any portion of the thyro-glossal tract remains unclosed there then occurs the so-called thyro-glossal cyst.

It is now quite universally accepted by embry-

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ologists that the thyroid originates but from a single median anlage and that the existence of lateral anlagen has been disproven embryologically by the failure of the so-called ultimobranchial bodies which were thought to represent the lateral thyroid organs, to develop distinguishable thyroid tissue. Likewise, clinically, it is disproven by the fact that myxœdema frequently develops after the excision of lingual goiter, an example of which we reported two years ago in the Journal of Surgery, Gynecology and Obstetrics. It is at once obvious when myxœdema develops after excision of a lingual goiter that the goiter represents all the existing undescended thyroid tissue and that myxœdema should not occur if lateral thyroid bodies exist, since in lingual goiter only the thyroid of median origin is removed.

Since usage has established the terms lingual, sublingual, etc., goiter, even though they represent in reality only accessory or aberrant thyroid tissue they must necessarily be included in a clinical discussion of abnormally located goiter.

With the exception of the lateral aberrant thyroids which occasionally occur in the supra-clavicular space outside the sterno-mastoid muscles and are caused by segments of embryologic thyroid tissue becoming detached in development and remaining as rests until late in life, it is evident from the brief discussion of the embryological descent of the thyroid that the abnormally located goiters due to developmental defects must occur in the median line somewhere between the extrauterine position of the thyroid isthmus and the foramen cæcum at the base of the tongue. A few have been reported in the median position in the mediastinum and endotracheal thyroid tissue has also been reported, usually at the junction of the larynx with the trachea.

These aberrant goiters consist first of a true lingual goiter in which a mass located in the median line on the posterior aspect of the tongue projects above the level of the tongue. The tumor is dark red, lobulated and bleeds readily on scratching. In such a case operated in our clinic the size of the mass was of sufficient magnitude to interfere with swallowing and, as stated above, myxœdema resulted after its removal.

The intralingual goiter is similar as is the sublingual except for their location as their names imply. These goiters are as a rule solid masses of thyroid tissue although adenomata which could be shelled out have been reported.

Thyroids which descend below the hyoid rarely fail to reach their normal position although long tail-like masses representing the pyramidal lobe may run well up the neck.

Removal of the lingual, intralingual and sublingual goiter should be undertaken only when they are producing symptoms, which occur in the form of pressure or obstruction to swallowing food. The very great possibility that their removal may cause myxœdema should lead one to operate upon them only with very clear indications for doing so.

If surgery is to be undertaken, the true lingual goiters projecting into the mouth are best removed through the mouth. The mass may be excised by snapping and cutting each section individually, the removal being wedge-shaped in character so that the edges of mucous membrane may be co-apted over the defect.

Intralingual and sublingual goiters are best removed through the floor of the mouth and a transverse rather than a longitudinal skin incision should be made. Longitudinal skin incisions in the neck made from the median portion of the chin down the neck tend to produce unsightly and disfiguring scars of the check rein variety. The removal of goiters below the level of the hyoid requires no special mention as their operative treatment does not differ from that of the goiters of usual location.

Before leaving the subject of goiters due to developmental errors it would be well to say a word regarding the classification of these types of goiters from the point of view of their anatomical character rather than their location.

A true accessory thyroid is one in which the area of thyroid is in no way connected with the thyroid even by a band of fibrous tissue.

A pseudo-accessory thyroid is one in which the area of thyroid tissue appears to be separate from the gland but on closer examination proves to be connected to it by a narrow isthmus of thyroid tissue.

An allied accessory thyroid is an area of thyroid tissue separated from the gland by some distance but connected with it by bands of fibrous tissue. These are usually adenomata which have become extruded from the gland and have slipped either under the belly of the sterno-mastoid muscle so that they are external to it or into the superior mediastinal cavity. The fibrous bands are portions of their capsules still remaining attached to the site of the adenoma's origin in the thyroid.

The true misplaced goiters in the accurate sense of the term are the true enlargements of the thyroid itself which have acquired an unusual location.

The types of goiter which are prone to acquire unusual location in their order of frequency are

adenomatous goiter, most commonly single adenoma, colloid goiter and cystic goiter.

Encircling goiters have been by no means rare in our experience and have usually been of the colloid variety.

Diffuse colloid goiters are very apt to have well marked prolongations of their upper poles—the gland tapering upward into an apex so that an extension of several inches beyond the point of entrance of the superior thyroid vessels may exist. These prolonged superior poles may occupy one of two positions. They may extend directly up along the anterior border of the sterno-mastoid muscle until in extreme cases the upper limit of the goiter appears to be just beneath the ears, or the prolonged upper poles may slip inward beneath the superior thyroid vessels. The superior vessels in this type enter the gland well below the very apex of the pole where they so constantly enter in goiters of the primary hyperthyroidism or exophthalmic type. Having turned their apices inward they then pass directly behind the thyroid cartilage, the right and left upper pole passing inward from either side until they meet and often pass each other thus producing a complete encirclement of the larynx. We have occasionally seen respiratory difficulties with goiters of this type but due to the unyielding structure of the laryngeal box, stridor and difficulty in breathing in goiters of this type have not been common. Most of the completely encircling goiters have been discovered by us in the course of a thyroidectomy when the poles were found by the exploring finger to extend behind the laryngeal cartilage.

In the same way the nodular goiters appearing high on one or both sides of the neck are adenomata developing in the upper pole or poles and slipping out beyond the upper border of the omohyoid muscle.

As to the surgical removal of goiters of either of these types little need be said except that dislocation of the prongs of thyroid tissue projecting behind the larynx should be made by passing the finger behind the thyroid mass rather than in front of it, thus avoiding injury to the superior thyroid vessels which pass over and enter on the anterior surface. In this way the tongues of thyroid will be so dislocated outward that the cord of vessels making up the superior vascular pole will stand out plainly, entering well down toward the body of the gland and may be ligated or clamped in one grasp.

A little lower in the neck we have in a very similar way seen colloid and adenomatous goiter send projections posteriorly behind the œsophagus or trachea.

Still lower down in the neck adenomata arising in the body of the thyroid not infrequently pass beneath the sterno-mastoid muscle and even the great vessels to lay well external to the post border of that muscle.

As has been stated under the heading of allied accessory thyroid, adenomata may be so extruded from the outer border of the gland that they slip under the belly of the sterno-mastoid and appear in the post triangle of the neck as a discreet mass. Where a single adenoma is extruded in this way, no adenomata being palpable within the thyroid itself, considerable difficulty may arise in determining the true character of such a mass. Of considerable assistance in a condition of this sort is the demonstration of limitation of motion in the mass solely in the outward direction, since in being extruded from the true gland there remain bands of fibrous tissue from the capsule still connecting it with the thyroid and while the mass moves freely inward, upward and downward it cannot be pushed beyond the limit of these fibrous bands in the outward direction. Tumors of non-thyroid origin together with true accessory thyroids have no limitation of motion in any one particular direction.

Symptoms due to vascular obstruction by pressure on the great vessels of the neck have been reported but are unusual. We have many times seen the great vessels stretched out over large adenomatous masses which have pushed behind them but have not seen symptoms indicating obstruction of the vessels in any way.

The group of misplaced goiters which frequently produce definite symptoms (chiefly respiratory difficulties) are those misplacements occurring below the origin of the trachea or œsophagus since their symptoms are due to pressure upon these two structures.

We have seen retrotracheal and retroesophageal goiter anywhere from the origin of the trachea and œsophagus down to as low as was possible to reach with the fingers into the superior mediastinal cavity.

We have frequently seen tongues of colloid and adenomatous thyroid tissue sticking out from the posterior or inferior surface of the body of the thyroid, projecting behind the trachea well over to the opposite side flattening that structure either laterally or from behind forward and producing respiratory stridor with marked difficulty in breathing. Likewise we have seen adenomata both at the normal level of the thyroid and within the thorax slip behind the trachea and œsophagus and produce narrowing of those structures with marked difficulty in breathing and occasional difficulty in swallowing.

Descent of adenomata and tongues of colloid goiter into the superior mediastinum produces one of the most common and serious misplacements of all goiters. Exclusive of the aberrant goiters occurring in the superior mediastinum which are developmental defects and represent but an almost infinitesimal per cent of intrathoracic goiters, all intrathoracic goiters are either adenomata which originate in the normally placed thyroid and are pushed downward, or tongues of colloid goiter whose growth is guided downward by the anatomical structures about the thyroid. As we have often stated when one considers these anatomical structures it is most surprising that a great majority of thyroid enlargements do not progress downward into the superior mediastinum rather than anteriorly as they so commonly do.

To consider briefly anatomical factors tending to produce intrathoracic growth it should be recalled that the thyroid ascends and descends with swallowing, moulding for enlargements, particularly of the lower pole, a bed always in the downward direction, that the lower pole of the thyroid rests unopposed by any structure, directly over the superior thoracic aperture and finally that over its anterior surface run the sterno-thyroid, sterno-hyoid, omo-hyoid and sterno cleido mastoid muscles, with the exception of the omo-hyoid, all attached to the sternum and tending to direct any enlargement of the inferior pole of the thyroid downward behind that bone and into the superior mediastinum. These are the mechanical factors which bring about misplacements of thyroid tissue into the thoracic cavity.

One should suspect intrathoracic goiter in any case with respiratory stridor with or without the presence, but particularly in the presence of goiter. We wish to particularly call attention to the fact that we have had several cases of intrathoracic goiter and one case of an intrathoracic thyroid cyst in which attacks of respiratory obstruction amounting almost to suffocation were intermittent in character, the seizures being followed by considerable periods of very free and comfortable breathing. This we believe to be due to temporary changes in the circulation of the adenomata with temporary increase in size of the tumor. A considerable number of our cases of intrathoracic goiter have given histories of having been treated for asthma over long periods of time, although critical auscultation revealed the breathing as not of the typical asthmatic type.

Several have found it impossible to sleep on one side without producing respiratory difficulty, posture undoubtedly producing increased tracheal pressure. Not a few have complained of a feeling of pressure beneath the sternum and some of these cases in which the adenomata have insinuated themselves between the trachea and œsophagus have complained of difficulty in swallowing. A few of these patients with intrathoracic goiter have presented swelling of the face due to obstruction to the large veins of the neck, but in our experience a majority of these patients have had malignant intrathoracic masses.

Enlargement of the veins over the upper part of the chest has occasionally occurred and is indicative, we believe, of an intrathoracic mass of large properties. They are caused by obstruction of the thyroid veins entering the internal jugular causing a compensatory dilatation of the superficial thoracic veins. It has been possible to palpate the rounded top of a completely intrathoracic goiter in some of the cases and dullness over the upper chest has usually been present. Palpable deviation of the trachea from its median position as it enters the mediastinum has often led us to suspect intrathoracic location. The position of the trachea is one of the most valuable signs in the diagnosis of goiter of intrathoracic location. By far the majority of goiters of this type are adenomatous in character and originate most commonly in either the right or left lobe. If by chance they happen to originate in the isthmus, being perched upon the trachea, they tend to topple either to the right or the left with the result then that deviation of the trachea either to the right or the left is a very common, perhaps almost constant factor in intrathoracic goiter. Since the position and defects in outline of this structure may be quite accurately portrayed by x-ray this then is one of the very reliable diagnostic features of this condition.

Endotracheal examination often demonstrates denting, narrowing and displacement of that structure.

All goiters, the lower poles of which cannot be palpated while the patients swallow with the chin hyper-extended should be suspected of intrathoracic location, particularly in the presence of difficulty in swallowing or breathing.

We believe that intrathoracic goiters and those goiters tending to become intrathoracic should be removed early because they tend to produce tracheal obstruction and that often late in life, because they tend to progress downward extensively into the mediastinum making deep dissections in that direction necessary and endangering patient's lives following this procedure, by the not infrequent occurrence of mediastinitis and pulmonary complications.

Conclusions

Misplaced goiters quite often produce symptoms by interfering with swallowing (lingual, retrotracheal and retroesophageal goiters), by interfering with breathing, encircling retrotracheal and intrathoracic goiter. They require prompt and early surgical treatment.

A lesser group, particularly aberrant goiters, produce no symptoms but require differentiation from other lesions.

Still another group retrotracheal, retroœsophageal and intrathoracic goiters require surgical removal as a protection against the production of pressure symptoms and lest their late removal entail measures of such magnitude as to endanger life.

THE PRODUCTION OF URINARY CALCULI BY THE DEVITALIZATION AND INFECTION OF TEETH IN DOGS WITH STREPTOCOCCI FROM CASES OF NEPHROLITHIASIS*

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Infection is regarded as a common cause of calcification in tissues, but the hypothesis that certain microorganisms which infect many may have peculiar power in this respect is not generally believed. It was suggested to me during experiments with a streptococcus isolated from an excised piece of muscle in a case of calcifying myositis. This strain was peculiar, in comparison with strains of streptococci from the more common forms of myositis, in that it not only produced marked lesions in the muscles of rabbits when injected intravenously, but also produced very early precipitation of calcium salts in the lesions.[1] The etiologic relationship of streptococci to the formation of gall-stones was demonstrated by me a number of years ago in experimental cholecystitis produced by intravenous injection of streptococci from cholecystitis in man.[2]

During the preparation of immune serums, in which repeated intravenous injections of dead streptococci having different localizing powers were made, numerous concretions were found at necropsy in the calices and substance of the kidneys of the sheep injected with a pyelonephritis strain; no other lesions were found.

In a series of experiments in which nephritis followed the devitalization and infection of teeth in dogs with a staphylococcus from a case of nephritis, one dog developed pyelitis and cystitis, with marked calcareous deposits in the adherent exudate in the pelvis of the kidney and in the bladder.[3]

On the basis of these observations it was believed to be worth while to attempt to produce urinary calculi in dogs by creating foci of infection around the teeth with organisms isolated from the urine and foci of infection in persons suffering from nephrolithiasis, thus simulating the conditions so often present in patients. A large number of experiments were performed, in collaboration with Dr. Meisser, and I wish here to summarize briefly the results obtained.

Results in the Nine Cases Studied

Owing to the numerous instances of beneficial effects in other diseases from the removal of foci of infection and to the results obtained in our first case, the tonsils were removed and infected teeth extracted in the other patients studied. The extracted teeth and extirpated tonsils afforded us opportunity to obtain proper cultures for experimental studies.

All of the patients studied were men. Their ages ranged from thirty-three to sixty years. All were suffering from nephrolithiasis, had had typical renal attacks of from three to twenty years' duration, and the interval from the last attack to the time of our study ranged from two weeks to nine months. A history of acute infection which appeared to be a factor in the genesis of the urinary symptoms was obtained from three of the patients. Cultures were made from the urine of five of the patients. From three of these urines streptococci, usually with staphylococci and colon bacilli, were isolated. Foci of infection were found in the teeth or tonsils of all. The number of pulpless teeth showing periapical infection varied from one to seven in each patient. Most of the infected teeth had been rendered pulpless many years prior to our study. The teeth of dogs were infected with cultures from teeth, tonsils, and urine of one patient, from teeth and tonsils of two, from infected teeth only of four, and from tonsils only of two.

Twenty of the thirty-four dogs used in the experiments developed calculi and other lesions in the urinary tract, readily visible at necropsy. Twenty-six (75 per cent) revealed microscopic calculi in the medulla of the kidney, and twenty had localized areas of active cellular infiltration in the medulla. Thirty dogs (87 per cent) revealed either calculi or localized lesions in the medulla, or both. Streptococci or diplococci were demonstrated in, or adjacent to, lesions in the kidney of sixteen dogs, all of which showed ac-

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tive focal lesions on microscopic examination. Positive results were obtained in eight of the nine cases. In the negative case the teeth of only one dog were infected.

The duration of the experiments yielding positive results was one month in two of the dogs, from two to three months in eight, from three to six months in twelve, from seven to eight months in six, and ten months in two. The duration of the four negative experiments was only eleven, fifteen, thirty and forty-five days, respectively, because of death from distemper.

The number of dogs whose teeth were infected with cultures from the patients varied from one to twelve in each case. In two cases only one dog was used, in three cases, two dogs, in two cases, four dogs, in one case, six dogs, and in one case twelve dogs were used. The teeth of eighteen dogs were inoculated with cultures obtained from infected teeth, six with cultures from tonsils, and ten with cultures from the urine. Twenty of the dogs were anesthetized and fourteen died of intercurrent infection or as the result of the induced focal infection.

In nearly all instances cultures from the pus found in the pulp chambers, which showed many streptococci and leukocytes in smears, yielded streptococci resembling those inoculated, usually with small gram-negative bacilli. This was true alike of the three cuspids infected at the time of the operation and the one cuspid in each dog which was merely devitalized and sealed in a sterile manner.

The localizing power in rabbits of the streptococcus from the teeth was tested at the end of each experiment in sixteen of the thirty-four dogs.

Forty-two rabbits were injected. Focal lesions were found in the medulla of the kidneys in twenty-one. Lesions in other organs were rarely obtained. Five had lesions in the periosteum opposite the roots of the incisors, three in skeletal muscles, three in the myocardium, two in joints, one in the gall-bladder, and one had ulcer of the stomach.

Of the sixteen dogs from whose teeth cultures were made and injected intravenously into rabbits, ten, representing four cases, showed microscopic evidence of active focal lesions in the medulla of the kidney. Of the twenty-eight rabbits injected, twenty-one developed focal lesions in the medulla, and seven showed no changes. The remaining six dogs, representing four cases, showed no microscopic evidence of active lesions in the kidney, and all of the fourteen rabbits injected remained free from lesions in the kidneys.

Streptococci resembling those inoculated into the teeth were isolated from the urine at necropsy in fifteen of the twenty-three dogs in which cultures were made, from the kidney in seven of twenty-seven dogs, and from renal calculi in three of six dogs. The positive cultures from the urinary tract were all obtained from dogs whose kidneys showed active lesions on microscopic examination. The primary cultures of the streptococcus from the urine, kidney, or calculi of five dogs, representing three cases, were injected intravenously into sixteen rabbits. Of these eleven revealed localized lesions in the medulla of the kidneys, while five remained free from lesions.

The staphylococcus which was isolated in small numbers from the urine of our first patient, and from several stones and some of the teeth of the dogs, always failed to localize in the kidney on intravenous injection into rabbits and was not demonstrable in the areas showing beginning stone formation.

The strains of streptococci from the different cases with which positive results were obtained were much alike. All produced small, rather dry, non-adherent green colonies on blood-agar plates; all were of a low grade of virulence, and produced marked acidity in glucose broth.

The lesions in the kidneys of rabbits following intravenous injection were similar to the active lesions in the dogs. They were not numerous, and not necrotic, and were nearly always small and limited to the medulla. Those following the injection of the urine cultures were the more pronounced. By placing thin pieces of fresh tissues immediately into solutions of neutral red, and by treating sections of the fixed tissues with nitrate of silver, it was found that deposition of lime salts occurred in lesions in the kidney, and in a few instances in lesions of the myocardium, as early as forty-eight hours after injection. Microscopic examination of the kidneys of the dogs showed three main types of lesions; sharply circumscribed areas of leukocytic infiltration between the collecting tubules, more diffuse areas of round-cell infiltration, and deposits of oxalate crystals or amorphous lime salts, with little or no surrounding cellular infiltration. The number of bacteria in the lesions was always small; long search was often necessary for their demonstration. They were never found in normal tissue remote from lesions, nor in the kidneys of ten dogs in which localized areas of cellular infiltration were absent and in which the areas of lime deposits had healed. Sections of other viscera in some of the dogs that had stones were uniformly free from changes.

Control Experiments

Besides the twelve control dogs in our first case, we have studied the results in twenty-three additional dogs whose teeth were infected with cultures of streptococci or staphylococci from sources other than nephrolithiasis, and which were kept under the same conditions with regard to diet, and so forth, as those inoculated with the nephrolithiasis strains. Areas of rarefaction around the apices of the infected teeth from which the inoculated organisms were recovered were found in most instances. Five of the thirty-five animals revealed calculi and lesions of the medulla of the kidneys. The calculi were small and situated chiefly in the medulla or calices. Sections revealed small localized areas of infiltration and areas of lime deposits in the medulla, with little or no cellular infiltration, in which diplococci were demonstrated. Since the organisms inoculated into the teeth of these dogs had no affinity for the kidney, it was thought that the small calculi found in this series were of spontaneous origin, and that calculi in dogs may also be due to infection. Through the kindness of Dr. Hardenbergh we have had opportunity to test this hypothesis experimentally and are able to include, as a further check on our experiments, the result of this routine examination of dogs kept under similar conditions during the course of our study. Of 433 dogs examined, fifty (11 per cent) had urinary calculi. In most of these the calculi were small, flat and loosely adherent to the mucous membrane of the calices. The gums around the teeth of many showed varying degrees of infection. Urinary calculi were not found at necropsies performed by one of us on 581 dogs over a period of ten years. According to Hutyra and Marek,[4] calculi were found in only twelve (0.38 per cent) of 3,301 dogs examined at the Dresden Pathological Institute. The experience of others indicates a general low incidence of this condition in normal dogs.

The experiments to determine the etiology of spontaneous calculi in dogs consisted of culturing the medulla of the kidneys containing calculi, and the washed and crushed stones, of testing the localizing power of freshly isolated cultures on intravenous injection in rabbits, and of inoculating the teeth of dogs with the organisms isolated from the induced lesions in the kidneys of rabbits. Pure cultures of streptococci were isolated from the medulla of the kidney or from the stones of each of five dogs showing spontaneous calculi. One of these produced hemolytic colonies on blood-agar plates, one, indifferent colonies, and three, green colonies. The indifferent strain was injected into four rabbits, and one of the green-producing strains into one rabbit. All remained well and free from lesions, and the strains were lost. One of the remaining green-producing strains produced lesions of the medulla of the kidneys in two rabbits injected. The primary culture of the third green-producing strain isolated from the stone of one of these dogs produced lesions in the medulla in three of four rabbits, and one of two dogs injected intravenously. The strain from one of the positive rabbits produced lesions in the medulla of the kidneys of two rabbits, and the strain from the positive dog, in the one rabbit injected. Cultures from the kidneys showing lesions were positive in every instance, and negative where no lesions were found. Cultures from the blood were negative in all. The strain isolated from the kidney of this dog, culturally and morphologically identical to the one isolated from the stones, was without effect in four rabbits injected. No lesions were found, and cultures from the kidneys and blood were sterile.

The hemolytic streptococcus in the third subculture was injected intravenously into two rabbits. Both developed lesions in the medulla of the kidneys, and cultures of the urine and kidneys yielded pure growth of the streptococcus injected. This strain produced lesions in all of three rabbits injected. The culture from the kidney of one of these was then injected into two rabbits. Both died, and marked lesions of the kidneys were found at necropsy. The culture from the kidney of one of these in turn was inoculated into the teeth of two dogs. They lost weight, but seemed well six months later, when they were anesthetized. Both had developed calculi in each kidney, demonstrable by the roentgen ray. Sections revealed localized areas of lime deposits and circumscribed areas of relatively slight round-cell infiltration in the medulla, in which diplococci were demonstrable. The streptococcus inoculated into the teeth was isolated from the teeth and from the kidney stones and urine in pure culture at the end of the experiments. The cultures from the stones and kidneys produced lesions in the medulla of the kidney in all of seven rabbits injected intravenously, from which the streptococcus was isolated in pure culture in every instance. The blood was sterile in six and contained the organism in one.

Four control dogs placed under identical conditions during the course of the experiment were found free from calculi.

Since the work on lithiasis was done, the effect that the ulcer streptococcus might have when inoculated into the teeth of dogs was studied by Dr. Meisser in a large number of dogs which in

other respects were kept under similar conditions. In some of these, ulcer of the stomach was found, which was proved to be due to the streptococci inoculated into the teeth, but in no instance were renal calculi observed.

SUMMARY AND DISCUSSION

The streptococcus inoculated into the pulp canals was isolated from the infected material in the root canals or the periapical tissues of the pulpless teeth at the end of each experiment. This was true alike of the three cuspids which were devitalized but not infected. In some instances secondary infection by a small gram-negative bacillus, and more rarely by a staphylococcus, had occurred. The streptococci in the teeth in which secondary infection had not occurred were especially numerous at the periphery of well formed granulomas and where the bone was being absorbed. The findings around the teeth were similar to those following the devitalization of teeth in persons, as practiced in dentistry: the infected teeth became discolored, but remained firmly in place in the alveolar sockets; the infection caused rarefaction and absorption of bone in the periapical region without swelling, pain, or tenderness, and the cellular infiltration and distribution of the bacteria of well formed granulomas were also similar.[5] The experimentally produced chronic foci, aside from being the source of the streptococcus which tended to localize electively in the urinary tract, appeared to have a general deleterious effect. Some of the dogs lost markedly in weight and became more susceptible to intercurrent infection. This was particularly true in those in which unusually large areas of infection around the teeth had developed and in which the renal calculi were large. This finding supports the interpretation by Osborne and Mendel[6] of the infectious origin of urinary calculi observed in rats (eighty-one of 857) fed on a diet deficient in fat-soluble vitamins.

It is not clear why the four dogs infected with the arthritis streptococci failed to develop arthritis. Active infection around the teeth was found in all. The streptococcus from the pulp chamber in one of the dogs inoculated four months previously had retained its affinity for the joints of rabbits on intravenous injection. It would seem, therefore, that the joints of these dogs were not affected because of high resistance of these structures to invasion by this organism during the relatively short duration of the experiment.

Calculi or lesions of the medulla were produced in 87 per cent of the dogs whose teeth were infected with streptococci from the urine, infected teeth, and tonsils of nine patients with typical nephrolithiasis. The duration of the experiment on the dogs in which the findings were negative was too short for stones to form. This is in sharp contrast to the findings in an equal number of dogs whose teeth were infected with strains from other sources, and to those of a larger series kept under the same conditions but in which the teeth were not infected.

The experimentally produced calculi were similar in physical properties and chemical composition to those found in nephrolithiasis in man. The number and size of the stones were often proportional to the duration of the experiment. The other findings in the urinary tract were also similar to those occurring in patients with this disease.

If albumin, pus and blood were present in the urine, there were only small amounts; and the lesions in the medulla of the kidneys were relatively slight unless ureteral obstruction from an impacted calculus occurred, when marked ascending infection developed, just as it commonly does in patients with partial obstruction of the ureter, and as produced experimentally in dogs by Keith and Snowden.[7]

The streptococcus inoculated into the teeth of dogs was isolated from the kidneys, from some of the stones, and from the teeth at the end of the experiments, and its elective affinity for the urinary tract in rabbits was demonstrated on intravenous injection. The streptococcus from the teeth of dogs that showed active lesions in the kidneys had retained specific affinity for the kidneys of rabbits, while those from the dogs that showed no lesions or only healed lesions had lost this peculiar localizing power. The organism was found in the lesions in the substance of the kidney where crystalization and stone formation were beginning.

The results of our experiments and the clinical study by Keyser and Braasch,[8] and others[9] indicate that the factor of focal and other infections should be given thorough consideration in the management of cases of nephrolithiasis. And may not a stone-forming infection account in part for the unusual prevalence of this condition in certain localities? The demonstration of the presence of the microorganisms precisely where precipitation and crystallization begin suggests strongly that the mechanism of the production of stone is largely a local process and that the reactions incited produce the physicochemical conditions necessary, such as the nucleus and organic framework, for the formation of calculi. The common occurrence, however, of unusually large numbers of calcium oxalate and other crystals in

the urine and in the medulla of the kidneys of the dogs that developed calculi, and the loss in weight, suggest that more general effects of infection may also play a part.

The conclusion that primary urinary calculi are often due to streptococci which have elective affinity for the urinary tract and, it would seem, specific power to incite the conditions necessary for their formation seems justified.

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REPORT OF FOUR RATHER UNUSUAL EAR, NOSE AND THROAT CASES*

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The writer in reporting the following cases has in mind the fact that cases which to him have been unusual, may have been of frequent occurrence in the practice of older men in the profession than himself, and in the infectious cases may have occurred frequently in the practice of the younger ones, during an epidemic caused by similar microorganisms. However, in my own practice they were unusual, and because our experiences with them may be of some benefit to the members of the section, and because I wish to have the opinion of the members in discussion, for my own benefit, in similar cases in the future, I am reporting these cases at this time.

The first two cases which I will report were of unusual interest to me because of the gravity and virulence of the condition, with the rapidity of onset and extreme constitutional symptoms, and the consequent demand for prompt, thorough, and efficient treatment. The third case is simply one of an unusual pathological condition, complicating a very common condition, met with frequently by all of us. The fourth is one unusual in my experience and in which the etiology and proper procedure was very puzzling and concerning which I will be very grateful for a free and frank discussion by the members of the section in case I should again meet a similar condition.

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Mr. H., married, age forty-five, pool room operator, German, Protestant, December 30. Family history negative; social history negative. Past medical history: usual childhood diseases; no severe illness or accidents.

Present history: Patient first became ill on December 28, starting with a swelling in the right floor of the mouth, patient was very restless, could not sleep, swelling rapidly enlarged. Has had three or four rather severe chills, pulse average of 140, temperature 100.5 to 103.5.

Examination general: Well developed, white, male, of above stated age, color very bad—a greyish white, face pinched and drawn looking, apparently in great pain, pulse rapid and small, temp. 103.2, resp. 28. Eye, ear, nose and throat examination negative with exception of a swelling the size of an orange in the right sub-maxillary region. Whartons duct right, about 2 cm. in diameter, marked pain and tenderness at the site of swelling, no trouble in swallowing or respiration. Patient, apparently very toxic. The duct was incised and probed for stone but none found. Early in the morning, following afternoon when first seen, patient came into hospital, swelling had extended from the right side through the entire floor of the mouth over to the ear of the left side. Tissue boardlike in hardness, tremendous amout of swelling, almost impossible for patient to swallow and having marked difficulty with respiration. Pulse 160, resp. 26, temp. 101.2.

Examination by internist reported a few coarse rales in the base of both lungs and embryo cardia. Laboratory report, urine small amount, specific gravity 1046, large amount of albumin, bile, pus, blood, hyaline, and epithelial casts. Blood examination; red cells 5,350,000; white count 41,250 with 91 per cent polymorphonuclears.

Diagnosis: Ludwig's angina secondary to infection of the right submaxillary gland, acute toxic myocarditis, acute parenchymatous nephritis.

Treatment: Floor of the mouth drained externally under local anesthesia and all layers of the floor of the mouth on each side drained with tubes. Curvilinear incision from the angle of the jaw on the right side to the level of the hyoid bone and through to the angle of the jaw on the left side and from the tip of the chin to the hyoid bone vertically; median incision carried through deep fashia and tubes inserted through each layer of the floor of the mouth and brought out through the cheek. There was a marked spreading of the wound as soon as the incision was made and almost immediate relief of respiratory difficulty and patient could swallow better. A small pocket of greyish pus was found in the region of the right submaxillary lymph-node; hot

boric dressings applied; 500 c.c. of salt solution given intravenously, 15 per cent glucose with 1 oz. of whiskey to the pint started per rectum, fluids forced by mouth, brandy ounces, one every four hours when awake by mouth and dressings moistened every one-half hour by very hot sterile boric solution by forcing same through tubes in cheek into dressings. Dressings changed every four hours. Liquid diet, milk, cocoa and coffee, no albumin or meats. Mouth wash potassium chlorate every four hours. Above treatment was continued throughout the first twenty-four hours when he could take liquids fairly well by mouth.

On December 31, max. temp. 101, pulse 148, resp. 24, patient can swallow, takes liquids slowly, dressings changed every three hours. January 1 still considerable difficulty in swallowing, large peritonsillar abscess was evacuated on the left side, large amount of greyish pus; gargle started of 2 per cent potassium chlorate every three hours. January 2—max. temp. 104.4, pulse 108, resp. 28; general condition of patient better, dressings moistened with hot boric solution every hour and dressings changed every three hours at which time all tubes were flushed with Carrell-Dakens solution. Treatment continued. January 3—Max. temp. 102.8, pulse 112, resp. 24; patient resting better, external heat by electric pad applied to dressings when wound was not being treated. January 4—Max. temp. 101.4, pulse 98, resp. 24; swelling in left tonsillar region nearly subsided, swelling in the neck beginning to subside; liquid diet fairly well taken, Murphy drip continued at intervals. January 5—General condition much improved, small amount of pus again released from left tonsillar region. January 6—Max. temp. 99.6, pulse 94, resp. 22. January 7—Soft diet fairly well taken; max. temp. 99.6, pulse 96, resp. 24. January 8—Patient had a slight hemorrhage from wound, from four to six ounces; patient spit some blood, bright red; complains of some difficulty in breathing; hemorrhage stopped on changing dressings, found to be coming from a small vessel in the neck, controlled by pressure. January 10—Temp. normal, swelling in the neck nearly subsided; patient eating and sleeping well; up in a chair for a time each day. January 17—Examination of wound showed all swelling subsided; temperature, pulse and respirations normal; urine normal; blood count normal. Edges of incision were elevated under local anesthetic; freshened and approximated with interrupted silk worm gut sutures; healing by first intention, in four days. Sutures removed; patient discharged.

Sister O., Waterloo, Iowa, age twenty-eight, teacher, American. First seen January 31, 1924. Entrance complaint: Pain in the right face and forehead, and pain on swallowing.

Social history negative; past medical history negative except for usual childhood diseases. Present illness: Patient had not been feeling well for three or four weeks before admission. About three weeks before admission the right side of nose became occluded. Patient had severe pain in the right cheek, radiating to the right ear and up into the right eye and forehead. Four days before admission, temperature became very high up to 105 daily; throat became very sore; no trouble with hearing; no chills or generalized headache, but patient was slightly delirious at times; slight cough present. Patient was seen by a specialist who diagnosed a streptococcic pansinusitis right and pharyngitis. He punctured the right antrum and obtained a small amount of pus on irrigation. Examination general: Patient, white, female, about twenty-six years of age, right side of face flushed, slight amount of edema in the right lower lid. Patient apparently very toxic and in great pain. Tongue and mouth very dry; slightly delirious.

Examination special: Eyes apparently normal in all respects except some edema of the right lower lid. Ears apparently normal in all respects. Nose; septum—slightly deflected to the right; mucous membrane greatly swollen on the right side and covered with a greyish flocculent membrane. Turbinates greatly swollen and edematous, completely blocking the right nose, copious sero-purulent discharge from the right side, very slight discharge from the middle meatus on the left side. Antrum puncture showed large amount of pus. All sinuses, right, blurred on x-ray; considerable tenderness at the base of the frontal sinus, right, and over right antrum. Throat: Buccal mucosa is very dry; uvula edematous; teeth covered with sordes; tongue extremely dry and coated; faucial tonsils enlarged and reddened, and covered with greyish flocculent membrane which was not adherent, and extended back over the entire naso and buccal pharynx; larynx red and congested, but no edema of membrane. Culture was taken from nose and throat which showed a mixed infection of a long chain streptococcus and encapsulated streptococcus, no diphtheria bacilli present. Blood count—red 4,500,000; white 18,000; 85 per cent polys; 12 per cent lymphocytes, and 3 per cent trans. Urine analysis showed specific gravity 1026, color dark brown, albumin, pus and casts. Internist reported toxic myocarditis and nephritis. Treatment: Window resection of the right antrum was done under local anesthesia; sinus irrigated with sterile boric solution followed by 2 per cent mercurochrome; 500 c.c. saline given intravenously; nasal irrigation started every hour with hot Seiler's solution, and 2 per cent mercurochrome instilled into nose; gargle every half hour—1 per cent phenol and 1 per cent glycerine; ice bag applied to throat and right face; liquids forced by mouth; 1/8 grain of morphine given and 15 per cent glucose started, with ounces one of whiskey to the pint, by Murphy drip; 4 drams of whiskey by mouth every half hour and liquids forced; calomel 1½ grains in divided doses followed by saline cathartic, 20 c.c. of anti-streptococcic serum given intramuscularly. Above treatment continued up to the second day. Patient again given 500 c.c. saline intravenously. Same treatment continued, patient continuing very restless; taking nourishment poorly; maximum temperature 103.4,

pulse 124, resp. 22; face highly flushed, sanguinous discharge, moderate amount from the right nostril; maxillary sinuses irrigated morning and night with hot boric solution followed by 2 per cent mercurochrome.

February 1, patient feeling somewhat better; treatment continued and one-half per cent optochin instilled in the nose several times a day—this day right eye lids became swollen, and complains of right eye being very sore; 500 c.c. of saline intravenously; mouth still extremely dry; membrane still present over pharynx; right side of nose still completely occluded; tongue extremely dry and coated; patient in lethargic state all day, arouses occasionally to complain of pain in the right eye. Examination of right eye: Vision apparently normal; fundus negative. February 2—Max. temp. 101.2, pulse 100, resp. 24; patient slightly delirious early in the morning; cold compresses to right eye 15 min. out of every hour; 500 c.c. normal salt again intravenously. February 3—General condition very much improved; tongue beginning to moisten; edema of turbinates considerable less; nose commenced to drain freely; membrane in pharynx nearly disappeared; mental condition of patient clear; seems much brighter; swelling in right eye much less. February 4—Edema in right eye improved; nose draining well; membrane entirely disappeared from pharynx; optochin stopped in nose; irrigation and mercurochrome continued; whiskey cut down in amount; Murphy drip discontinued; antrum irrigation continued morning and night; patient continued to improve. Up to February 8th, temperature was normal; taking light diet well; right maxillary sinus free from pus and the pharynx clean. All treatment to nose stopped, except irrigation and mercurochrome morning and night followed by 20 min. nasal suction.

Mr. C. age fifty-three, white, male, farmer. First seen October 25. Complains of dizziness and extreme pain in the left side of the head. Family history negative. Social history: Widower, four children alive and well, denies venerial infection. Past medical history: Usual childhood diseases, scarlet fever at twenty, when he had considerable ear trouble; pneumonia at thirty-six; history otherwise negative.

Present illness: Patient has had a chronic discharge from the left ear for the last thirty-five years; no further trouble that he knows of until three weeks ago. Mass has been present in the left ear canal as long as he can remember, does not know whether present when a child. No further trouble until three weeks ago, when, following a severe cold the left ear became very sore both in the canal and posterior to it. While plowing became violently dizzy and fell off the plow, since then it has been very difficult to retain any nourishment because of vomiting, and dizziness has been constant but seems to be better when lying down. All night before admission, the patient had a terrific headache on the left side of his head and slight stiffness of his neck.

Examination, eye: Marked rotary nystagmus; eyes otherwise negative including pupillary reflexes; size of pupil, light reaction, vision and fundus. Ear examination: Right apparently normal in all respects except for slight catarrhal deafness; left canal completely filled by hard bony-like mass covered with apparently normal epithelium. The mass extends level with the external auditory meatus and so completely fills the ear canal that it is impossible to insert a fine probe. Very slight amount of thin foul smelling serum exuding around this mass. Mass is insensitive, causes no pain on pressure and is extremely hard. Bone conduction, left, considerably cut down; slight tenderness over the left mastoid on firm pressure. X-ray right mastoid normal, pneumatic type; left, all cells obliterated. Nose and throat examination negative. Laboratory examination: Urine, specific gravity 1044; trace of albumin, large amount of acetone, no sugar, a few granular casts; white count 14,200; 78 per cent polys. Lumbar puncture showed fluid in spinal canal to be under pressure and eighteen cells per c.mm. Diagnosis: Chronic suppurative otitis media and mastoiditis left, acute circumscribed labyrinthitis, and circumscribed serous meningitis. Ossified aural polyp, left.

Treatment: Radical mastoidectomy, left. Operation: The entire mastoid was found broken down into one large cavity which was filled with a cholesteatomatous mass. On opening the bony canal, the epidermis lining this portion was almost entirely destroyed by pressure necrosis, and a pear-shaped mass, the apex of which originated in the middle ear and the base of which was the mass which filled the external auditory meatus, was found. This was well epidermized over the base but was covered with a thin, mucous like, membrane towards the apex. On pathological examination this mass was found to be a solid mass of true bone. No dehiscence was found in the external horizontal canal and the mass was very easily removed from the external canal. The operation was completed in the ordinary manner with the exception that there was no flap from the canal, to turn back into the wound, because it had been destroyed, as before stated, by pressure necrosis. About one week following the operation, the patient ran a high temperature for two days and then broke out at the site of wound with a low grade of erysipelas which cleared up in one week. Recovery was otherwise uneventful. All meningeal, and internal ear symptoms subsided within forty-eight hours after operation.

Mrs. F., age twenty-nine, female, H. W., first seen August 7. Entrance complaint: Nose trouble. Examination: Family history negative. Social history: Married, two children alive and well, age four and six years respectively.

Past medical history: Usual childhood diseases, no severe illnesses. Present illness: Complains of catching cold easily. Has had pain and discomfort in the left cheek for the last year following extraction of tooth in the left upper jaw. Has had some enlargement of the glands in the neck for about one year; no hoarseness; no headache; no dysphagia; dis-

charge is worse from the left side of the nose. Systemic history negative except some pain in the left side on one or two occasions. Weight normal, appetite good; no miscarriages; has occasional attacks of sore throat. Examination: Eyes negative in all respects; ears negative; nose, some hypertrophy of the left middle turbinate and considerable thick yellow pus coming from the left middle meatus. Throat: Tonsils cleanly removed; larynx, slight redness and injection of the false cords; slight lateral pharyngitis especially on the left side. Left face, dark on transillumination. X-ray shows left antrum markedly blurred. General examination negative.

Treatment: A window resection was done into the left maxillary sinus under local anesthesia and the sinus irrigated at frequent intervals and was clean and free from pus in about three weeks time. Returned at intervals of about three weeks and each time on irrigation the sinus was free from pus. Patient came in again on October 22nd complaining of pain and swelling in the left eye. Eye had been watering and tearing for about a week previous when a red swelling appeared at the left inner canthus in the region of the tear sac. This swelling increased in size until the eye became very puffy and she returned to us. Patient had considerable pain and a temperature ranging from 100 to 101. Examination: Right eye normal in all respects, brauny induration over the left lachrymal fossa and marked edema and swelling of the left upper and lower lids and cheek.

Point of greatest tenderness and slight fluctuation over tear sac; small amount of pus expressed from the left canaliculus; marked tearing left; vision, left, normal; eyes otherwise apparently normal in all respects. Ears apparently normal, right and left. Nose free from pus and left antrum contained no pus on irrigation.

Diagnosis: Acute suppurative dachyrocystitis, left.

Treatment: Abscess opened under local anesthesia and hot boric compresses applied. Patient discharged after one week to return at a later date for dachyrocystectomy. Rough bone was felt by probing, in the left lachrymal fossa, and patient was advised that she had a localized osteomyclitis, which would have to be taken care of at the time of the tear sac removal. November 7, patient returned in three weeks because of sudden swelling of whole left side of face and was very much prostrated. Temperature from 100 to 101. Left lachrymal duct still swollen shut. Right eye negative; left eye, marked edema both upper and lower lids. Eyes otherwise normal. Ears negative. Septum greatly swollen. Left side of nose very red and congested and turbinates enlarged until they completely blocked the left side of the nose. Considerable muco-purulent discharge from the left nose. Left face swollen and edematous and the edema extended over the bridge of the nose and up well over the right frontal region. Irrigation of left antrum showed large amount of pus. X-ray showed all sinuses, left, blurred with necrosis of the floor of the left orbit and facial surface of the left superior maxilla. General examination negative. Diagnosis: Osteomyelitis of the left superior maxilla involving the nasal bones, nasal septum, and anterior plate of the vertical portion of the frontal bone.

Treatment: General ether anesthesia. Lachrymal incision enlarged. The lateral mass of ethmoids opened and floor of frontal sinus removed, and rubber tube passed from the orbit through the ethmoids and out of the left anterior nares. Opening made into the left antrum through the canine fossa; left maxillary sinus which contained a large mass of detritis and polypoid mucous membrane, was thoroughly cleaned out and gauze drain passed from sinus out through the left anterior nares. Opening into mouth, in the canine fossa, sutured with interrupted No. 6 braided silk sutures, and hot boric compresses applied to face and continued for a week. Incision in canine fossa healed by first intention. On exploration the periosteum over the entire facial surface of the superior maxilla was apparently gone, also the bone over the anterior surface of the frontal bone was deprived of periosteum and the bone found rough and gritty. Patient returned to bed. Hot compresses continued for one week. Antrum irrigated daily. No further discharge was present. Abscess in the nasal septum was drained. Patient was discharged to return at a later date when the infected bone should be sequestered and could be removed.

Patient did not return to us but later we received a letter from Rochester which reads as follows: "On examination here, the x-ray showed a very extensive osteomyelitis of the cranial bones, a parotid fistula, and a fistula in the inner canthus on the left side, and definite sequestration of the bones at the root of the nose. It was thought at first that this might be a luetic infection, but there was no progress in antiluetic treatment. She developed definite meningeal signs and as a last hope, a very extensive external frontal operation was done, and that part of the condition seemed to be controlled satisfactorily. The disease process extended from metastatic origin spreading to the meninges and she died on January 30, 1924. Post-mortem examination revealed an extensive suppurative disease of the surface of the brain, not an abscess, and extensive thrombosis of the venous sinus. I am now looking up the literature on this process and find that the mortality is nearly 100 per cent in this type of case."

(Signed) H. I. Lillie.

The general treatment of these septic cases resolves itself, in my mind, into two conditions. First, the most rapid possible dilution and elimination of the products of infection. Second, to obtund sensation and thus aid in allaying the shock of extreme sepsis.

The nature of the toxins of streptococci are not generally understood but it seems to be a well settled fact that the most virulent strains especially, produce an abundant exotoxin as well as endotoxin. These in turn act differently in

different strains, causing a marked hemolysis in some, in others a marked edema or cloudy swelling of tissues. It is probably this exotoxin that causes the difficulty in these overwhelming infections as there is hardly sufficient time for manifestations to be produced by endotoxins from the destruction of the bacteria themselves. We then have to consider how best to rapidly eliminate these poisons from the system and as far as the blood is concerned, this has to be done through the kidneys mainly. It therefore seems that the least harmful thing that we can do, and clinically, it seems the most effective and quickest way to accomplish this purpose, is by intravenous injections of large amounts of normal salt solution. We usually start with at least 500 c.c. and repeat every few hours, time after time, until the toxemia is lessened and the system begins to get control of the infection as evidenced by lowering of temperature, improved quality of pulse, beginning moisture of the tongue, and improved mental condition. Intravenous injections of citrated or whole blood have been tried frequently but they do not seem to have as great therapeutic value in diluting and eliminating the toxins, and are more likely to cause a much more severe general reaction. Occasionally a patient will experience a tremendous reaction following the intravenous use of saline solutions, with severe chills, rapid shallow respiration and pulse, cold clammy skin and all other symptoms of shock, in fifteen minutes to one-half hour after the injection, but these reactions are rare if the solution is properly prepared from distilled water and is given slowly, at body temperature. If they occur, they must be treated as shock elsewhere.

The second thing is to treat the shock, if I may call it such, of the sudden invasion and poisoning of the system by the infection. It has always seemed to me that as far as the body is concerned that the patient in these cases, except in the fatal ones where all the sensations are almost completely obtunded, suffer extremely and indescribably. As the patient in the first case told me on recovery, that before admission he had an "indescribable feeling of being terrifically poisoned" and he had the greatest anxiety and felt absolutely no hope or desire for recovery. Septic shock is without doubt closely associated with surgical or any other kind of shock or collapse, and while we understand and are perfectly familiar with the symptoms which result from surgical shock, the mechanism of the thing in the body which produces this train of symptoms is a matter of the greatest divergence of opinion and controversy. Broadly speaking it is generally accepted, however, that the sensory nervous system, sympathetic nervous system, higher cortical centers, glandular system and cardio vascular system are all closely associated in it; with the sympathetic and higher sensory systems playing perhaps the most important part, and that it is due probably to overstimulation of the latter two, in the case of infection; by toxemia. If we then seek to quiet the higher centers and through them the sympathetic system, we at once think of opiates, but experience has shown us that in septic conditions this does not seem to work satisfactorily. We then think of alcohol and it seems to me that if there is any condition in which this drug is useful, it is in these cases. Whiskey as a rule after slightly stimulating the cortical centers seems to exert a marked analgesic action and by allaying the patient's apprehension, conscious and subconscious distress, it acts reflexly on the sympathetic system as a sedative, and at the same time affords concentrated carbohydrates for nourishment. We have, therefore, forced alcohol in the form of whiskey either by mouth, or by rectum in 15 per cent glucose solution in these cases until the patient's sensibilities were well obtunded and they were relaxed and resting easily, and it was continued in liberal doses until definite signs of subsidence of the infection were in evidence.

The two foregoing things seemed to be the main things in the treatment of these septic cases, and the local treatment resolved itself into a matter of drainage with such antiseptics as we happened to be using at that time. In the nose especially it is a question if anything in the way of surgical drainage should be attempted but I believe in the case of the maxillary sinus that the benefit of free drainage outweighs the danger of opening up new lymphatic channels; but I should be very hesitant about disturbing surgically any of the superior sinuses where the infection has such a short distance to travel into the spaces at the base of the brain.

The ear case was only of interest in that the ossified polyp was flush with the external auditory meatus and was so completely epidermized that the skin covering it was exactly like the covering of the rest of the auricle, and so completely filling the external auditory canal that the finest probe could not be inserted around it. Because of this it seemed more like a congenital condition and if this was the case, it was difficult to foretell just what sort of a condition would be found in the mastoid and middle ear at operation, and left the prognosis considerably in doubt.

The case of osteomyelitis was of interest because of the etiology of the bone infection. With the sinus repeatedly free from pus on irrigation,

the nose free from pus, or edema of the turbinates and the lateral wall, it is hard to presume a low grade osteomyelitis at the site of the window resection, which extended gradually up and involved the lachrymal fossa. With no sign of swelling or a fistula in the alveolus, in the floor of the sinus, it is hard to assume a low grade osteomyelitis in this region, although, of course both conditions are possible, but plates, films, etc. did not show it and how with the before mentioned conditions were we to diagnose it if it were present. Therefore, the most logical cause for the trouble seems to be the acute suppurative dachyrocystitis, on incision of which the bone in the floor of the fossa was found infected, and it is evidently from this area that the infection spread. It seemed only logical to wait until the cellulitis over the tear sac had subsided, to attempt to extirpate the sac and necrotic bone, including the anterior ethmoidal cells on that side, as there was no pus or edema in the region of the middle meatus on that side and we already had free drainage from the bone through our lachrymal sac incision. The bone infection spread so rapidly, however, that it was necessary to drain the frontal, ethmoids, and antrum radically, because of absorbtion from these sinuses, and this was done, but at operation no line of sequestration was found and it seemed useless with the area of bone already involved, to remove all of the denuded bone and subject the patient to an extremely disfiguring operation, with no certainty at all that we were getting outside of the infected bone. It seemed best to me, therefore, to maintain drainage and continue local heat, in an attempt to localize the condition and delay any extensive removal of any infected bone until it should be well walled off, with a good line of demarcation and thus insure the patient's recovery and perhaps save considerable deformity. Of course, syhpilis was thought of and although the Wassermann was repeatedly negative, the therapeutic test was applied both intravenously and with K. I. and by inunction, and pathologic examination of the bone revealed neither malignancy or tuberculosis. I remember hearing Skillern report a similar case which had a similar termination, and which was repeatedly operated, and if any member of the section can give me any advice as to how otherwise to proceed, in case I have the misfortune to meet a similar case, I will be very grateful.

Discussion

Dr. Thomas R. Gittins, Sioux City—I was very fortunate in happening to be in Fort Dodge at the time Dr. Chase had the case of osteomyelitis under his care. He was treating it with through and through tube drainage and had not removed any of the necrotic bone. It was really a terrible looking patient and I wondered many times how the patient could live and if she did live it would seem there would be no bone left on that side of the face. We have had three youngsters, two of them Indians, with a similar infection of the bone in the side of the face. On first examination there was roughened bone over all of the sinuses, especially the antrum. There was also a typical gangrenous odor. All three of these youngsters died in a few days.

Dr. F. L. Wahrer, Marshalltown—I am a little at a loss in discussing this paper as I just saw the paper about an hour ago. I am taking this discussion on account of the absence of Dr. Ivins. I certainly think that Dr. Chase has handled these cases in a very admirable manner and I know that the treatment of such cases are very difficult. While in the army I saw two unusual cases of Ludwig's angina. One similar to the one that Dr. Chase reported. A young man came in with a large swelling of the submaxillary gland starting only about twenty-four hours previously. The floor of the mouth was deeply involved, and he had difficulty in swallowing and breathing. A diagnosis of Ludwig's angina was made and a drain put in. He made a very good recovery. Just a few weeks later a patient came with a small swelling. He was sent back to the infirmary but returned the next day, being brought in on a stretcher. In about twelve hours this swelling had grown enormously, and he was having difficulty in swallowing and breathing. An incision was made and a drain put in. He had a very stormy time, but pulled through. An acute nephritis was present during the entire course of the disease. The thing that impresses me the most with these cases is the fact that they come on very suddenly and are liable to be accompanied by an acute nephritis which must be given attention. Cases of acute streptococcus infection of the nose and throat are not common, I am glad to say. I feel that most of these cases of streptococcus infection are of a secondary nature due to infection in the sinuses. Whatever foci of infection exists should be taken care of together with putting the patients in bed where they can be looked after and handled with the greatest of care. I have given serum to some of these cases, but cannot say that I have seen much benefit. In the case of ossified aural polyp will say that I have never seen one of these. When I first started to practice a boy was sent to me for a radical mastoid operation. They gave a history of the child having pain in the ear three years previously and there was some bleeding from the canal at this time. For the next few days the child had been digging at his ear. After a few days the child felt better. I immediately became suspicious of a foreign body in the ear. I thought at first that it might be an aural polyp, but when I proceeded with the examination I removed a small white bead from the canal. I saw a case of osteomyelitis of the face and cranial bones while at the Mayo Clinic. This started from a mastoid infection and at that time all the cranial bones were deeply

involved. The patient had also developed meningitis. The doctor in charge did not expect this case to live but a very short time.

Dr. S. B. Chase—I wish to thank Dr. Wahrer for the fine discussion which he gave the paper on such short notice. With regard to the antistreptococcus serum, I simply gave this, not because I expected any therapeutic value from it, but simply as an extra measure and perhaps because I was overly anxious about the case. These streptococcus infections were going from bad to worse and I may have been a little radical in my treatment but my one thought was to get them under control as quickly as possible. I wish to thank Dr. Gittens for his discussion and was very glad that he could have been in Fort Dodge and have seen the osteomyelitis case with me.

CARCINOMA OF THE UTERUS IN YOUNG WOMEN*

H. J. Heusinkveld, Jr., M.D., Clinton

Occasionally one finds, while busy with the commonplaces of medical practice, some unusual or rare condition which almost invariably arouses his curiosity. Sometimes these experiences constitute an addition to medical knowledge, but often, they are merely isolated case reports. I wish today to give such a case report but also to summarize the available literature on the subject.

In January, 1918, a young unmarried woman of twenty entered Jane Lamb Memorial Hospital (case No. 7800), complaining of profuse, fetid, vaginal discharge, occasionally blood tinged, of two months' duration. There was bleeding whenever a douche was taken to relieve it. No other complaints were made. Her only previous illness was an attack of acute articular rheumatism at age sixteen. Menstruation began at thirteen, and was normal and regular. At age eighteen, she had a pregnancy which terminated at the second month. Metrorrhagia had never been severe but in recent months, menstruation had been more profuse.

Physical examination revealed no abnormality other than hypertrophied tonsils and a large cauliflower-like mass covering the entire vaginal portion of the cervix. It was soft, friable, hyperemic, bled easily on the slightest touch and produced a profuse, purulent, fetid, blood tinged discharge. A small portion was removed with a curette for microscopical study. The sections showed typical carcinoma of the glandular portion of the cervix. A few days later an abdominal panhysterectomy with removal of the upper ⅓ of the vagina was performed. Recovery was uneventful and the patient was discharged fifteen days after operation. Post-operative x-ray therapy was administered for some time. In June, 1922, she came back complaining of enlarged inguinal glands and a small superficial mass in the scar. Examination showed no return of the growth in the vagina and no glands could be palpated per rectum. The inguinal glands and nodule in the scar were hard and movable. Excision of two inguinal glands was done and sections made. The picture resembled large round celled lymphosarcoma but on comparison with the original sections, it was apparent that the secondary growths were carcinoma rather than sarcoma. This tendency to form the picture of sarcoma is sometimes found in rapidly growing carcinoma in young individuals. The patient received radium and deep x-ray therapy but continued to decline and died in August, 1923.

Carcinoma of the cervix of the uterus in the third decade is decidedly uncommon and yet it is found in sufficient numbers to warrant suspicion whenever one encounters a granular, friable, easily-bleeding cervix. In the first twenty years, it is very rare indeed and comparatively few cases have been reported in the literature. Between twenty and thirty years, reports are being made with increasing frequency, Gibson[10] alone reporting six cases between the ages of twenty-five and twenty-nine years. Beyond the age of thirty and particularly at or near the menopause, cervical carcinoma is very common and this period of life is not considered in this discussion.

The incidence of early uterine cancer is indicated by the following statistics. McGlinn[17] compiled a series of 2291 cases with .5 of 1 per cent under the age of twenty-four. Petersen[20] found four cases of squamous celled and two glandular carcinomas of the cervix between the ages of twenty and twenty-five in 500 cervical carcinomas. The statistics of Gusserow, according to Webster, show two cases of uterine carcinoma under twenty years in a series of 3471. Hoffmeier[20] found none under twenty years of age in 860. Koblanck's[20] statistics reveal only two cases under twenty years in 6,354. Mattmuller[16] found three cases of uterine cancer between twenty-six and thirty years in a series of 620. MacCormac[14] reported 234 cases of uterine carcinoma with the youngest twenty-four. Little[12] says Scanzoni reported 108 cases of cervical carcinoma, the youngest being twenty-four. These figures convince one that uterine cancer under thirty years is uncommon but no doubt it is more frequent than published reports seem to indicate.

The etiology of early uterine cancer is as obscure as that of cancer elsewhere. Traumatism of labor, infections with constant irritation and hereditary disposition are factors which apparently apply in a small number of cases. In the reports of cases as found in the literature, carcinoma of the body of the uterus and the glandular portion of the cervix apparently occurs

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more frequently than the squamous celled type. When the parametrium has become involved, metastases occur rapidly and death follows in a short time. Outstanding symptoms of uterine cancer are metrorrhagia and vaginal discharge, often purulent and fetid. The average length of life of cervical carcinoma is two years but in the young individual, it may be and often is much less.

The youngest reported case of uterine cancer was that of Adams.[1] A child two and one-half years old had severe metrorrhagia which necessitated operation. Only exploration was done and the child died in three months. Autopsy revealed a carcinoma which probably originated in the corpus uteri.

Ganghofer,[8] in 1887, operated an eight year old girl for an ulcerated papillary neoplasm at the portio vaginalis and supposed it was a sarcoma. On microscopic examination, it proved to be carcinoma developing from the glands of the mucosa.

In 1896, Little[12] reported a remarkable case of cervical carcinoma in a girl of fourteen. With the onset of menstruation, metrorrhagia and blood-tinged leucorrhea occurred. No operation was performed and no sections obtained.

Boyd[3] in 1906 encountered, in a girl of eighteen, a pedunculated cauliflower growth, the size of a walnut, attached to the posterior lip of the cervix. Amputation of the cervix was done followed shortly by vaginal hysterectomy and removal of the right adnexia. Later study of the sections from the growth suggested endothelioma instead of adeno-carcinoma which was first diagnosed.

De Rouville[6] treated a girl of eighteen for cervical epithelioma by total abdominal hysterectomy. The entire cervix was replaced by a reddish-gray mass which was hard, friable, and which bled easily on gentle contact.

Gayraud[9] in 1911 reported four cases of cervical carcinoma under twenty years, three of which are mentioned elsewhere in this paper. The fourth was a girl of nineteen on whom vaginal hysterectomy was performed. Histological examination showed cylindrical celled epithelioma. (This case was taken from "Tchopp. Jowj. Rousk. Med. Zaz., No. 7, 1896".)

In 1913, Cragin[5] reported having performed a Wertheim operation on a girl of eighteen for cauliflower carcinoma on the cervix. In the discussion of his paper, Brooks M. Wells related the case of a girl of eighteen, married, who had passed one period and then flowed profusely. Curettage was done, abortion being suspected, and examination of the scrapings showed carcinoma. A hysterectomy followed and revealed a very early carcinoma at the internal os. This patient was last heard from four years after operation at which time she was well. No other reported case of uterine cancer under twenty has lived as long as four years after operation.

Eckardt[7] in 1886, removed a large vulval tumor from a girl of nineteen. It was attached to the cervix, was 9 cm. long and very fetid. Histological examination showed a carcinoma which apparently originated in the glands of the cervix. A search of the literature at that time revealed only three reported cases under twenty years of age.

In the third decade, the cases are more numerous but comparatively few have been reported. Minot[18] in 1861 reported a case which probably was glandular carcinoma in a girl of twenty-one. Taylor[22] in 1881 saw a uterine carcinoma in a woman of twenty-eight. Paunz[19] reported in 1906 a carcinoma of the portio vaginalis in a young woman of twenty-six. Luker[13] reported a cervical carcinoma in a woman of twenty-eight who had had gonorrhea for five mo. and had numerous applications to the cervix of silver nitrate and other antiseptics. One other similar case occurred at the London Hospital during the interval 1915 to 1922. Brown[4] discovered a cervical carcinoma in a woman of twenty-four who was pregnant and near term. Gibson[10] had six patients, twenty-five to twenty-nine years old, with uterine carcinoma. Petersen[20] added to this list, six cases of cervical carcinoma between the ages of twenty and twenty-five. A recent communication from the Mayo Clinic states that, in a recent series of cases of uterine cancer, the youngest was twenty-one years old.

The treatment of cervical carcinoma is going through a transitional period. Increasing numbers of reports on radium treatment seem to show that this type of cancer is peculiarly susceptible to radium and that the percentage of cures ranks well with that of surgical treatment. Whether radium will supplant surgical treatment entirely is doubtful for some cases will demand combined methods. If surgery is resorted to, cervical carcinoma is best treated by abdominal hysterectomy or by vaginal hysterectomy if prolapse is present. When operation is performed, abdominal hysterectomy with the least possible manipulation of the uterus and[21] closure of the channels through which material may escape from the uterus into the field of operation, with preliminary and subsequent radiation, offers the best chance for a permanent cure.

In searching the literature, I have been able to find only one case of cervical carcinoma in the first twenty years living four years after operation. Therefore, my patient stands out as unique

in that the first evidence of metastases appeared four and one-half years after operation and death did not occur until fifteen months later.

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Discussion

Dr. William Jepson, Sioux City—This paper presents malignancy as observed in the female of our race, nearly one-half or 41.4 per cent, of the cancers to which the female is subject appearing in these two organs, namely: The breast and the uterus. We are prone to think that cancer of the uterus does not appear until senescence has entered as a factor in bringing about the possibility. By senescence of course we mean the lowered resistance incident to advancing years which permits proliferated epithelial cells to invade the basement membrane and consequently disseminate themselves throughout the economy. The great interest attaching to this paper is due to the fact that such malignancy may appear at a comparatively early period, hence we should constantly be on the lookout for this possibility, because it is only in the early period of malignancies that we may hope, with our present knowledge, to render these patients that benefit we would like to bring to them. Cancer occurring in young women undoubtedly is much more prone to be overlooked than are those malignancies occurring after thirty-five or forty, because of the tendency referred to—that of thinking that younger individuals are immune. Coming back to the reason, I wish to leave this thought: That senescence in the human being as well as in the animal kingdom below us is not a matter of age. Some people become senescent at a very early period of life as compared to others in whom the period at which senescence occurs is deferred, probably as a matter of heredity, until late in life.

MASTOIDITIS: ACUTE SUPPURATIVE WITHOUT PREVIOUS MIDDLE EAR SYMPTOMS*

Sydner D. Maiden, M.D., Council Bluffs

I feel justified in taking your time to relate in as brief a way as possible what has come under my personal observation within the past year relative to the title of this paper.

I am taking the liberty to change the title to Mastoiditis, Acute Suppurative, Without Previous Aural Discharge. The original title conveyed the facts of the cases in so far as the entrance complaints were expressed by the relatives of the patients. But upon going through their histories I find that in most of the cases a history of some pain was obtained in most instances, though it was not severe and little significance was given it by the family.

Our attention has been called to these types of cases quite forcibly in the past few years and I feel that they are of sufficient importance to again give them thought.

In the past year it has been my fortune to have had five such cases. All of them were in children, the youngest was three years of age, the oldest nine years. One of them followed measles, the others gave a negative history or of having had a cold previously. In none of them was there any suspicion on the part of the parents of their being any ear involvement until the mastoid symptoms were advanced or until told after being examined. The necrosis was extensive in all as found at operation, but none developed any serious complication except the last case which will be noted in the following case reports.

Case No. 1.—R. B., a boy five years of age was brought in on June 20, 1923, whose chief complaint was swelling back of left ear and in left side of neck. Some pain about the ear. Previous history was negative. Present illness: Three weeks before he had pain in left ear for two days. No discharge from ear at that time. He was nauseated and vomited during that period. After pain subsided the glands in left side of neck were slightly enlarged and tender. He ran a temperature and complained of pain about the left ear. Three days before examination, swelling began to appear back of left ear. No discharge from ear had been noticed at any time.

Examination: Boy looked septic. Marked swelling over left mastoid. Extreme tenderness over mastoid area. Canal was clean. Membrani tympani was not bulging but the normal lustre was gone and it had a dull dark grey appearance. No perforation present. The supra-posterior wall was sagging.

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Temperature 100.4, white count 13,800, polys, 54, urine negative. X-ray showed left mastoid area opaque.

At operation sub-periosteal abscess was present. Outer cortex necrotic. Mastoid cells were necrotic throughout and filled with pus and granulations. Exposure of the lateral sinus above the knee by necrosis. Culture from pus at time of operation showed no growth. He made an uneventful recovery.

Case No. 2.—C. E., boy, age three years. Chief complaint was pain in left side of head of several days' duration.

Past history: Child had always been well but had had attacks of earache at times for past four months. Never had had a discharge from either ear and the attacks of pain in the ears had always been of short duration and never severe.

Present illness: Complained of pain in left ear for several nights and pounded the left side of his head and cried for four days previous to examination. Three days previous a swelling appeared behind left ear over mastoid area. This area was tender to the touch. No discharge from the ear. Child refused nourishment and acted very ill. Swelling behind the ear increased in size gradually. He was taken to Omaha where a reliable aurist was consulted. He informed the parents that there was nothing seriously wrong except that the swelling back of the ear was due to a slight infection and for them to apply heat externally and it would rupture and drain.

Examination: Boy looked very ill. Was very septic, was listless and apathetic. There was marked swelling over left mastoid area extending well out into the surrounding tissues. The external canal was dry. The membrani tympani was not bulging or red. It had a dark grey appearance, however. The postero-superior portion of the wall was sagging somewhat. The rest of the physical examination was negative. No x-ray was taken. White count 27,000, polys 80, urine negative.

At operation a large subperiosteal abscess was found and the entire mastoid area was destroyed by necrosis. The necrosis extended beyond the mastoid cortex superiorly above the mastoid antrum and had exposed the dura about two centimeters in diameter. The dura beneath this area was bathed in pus and covered with granulations. There was no exposure of the sinus. Culture taken at time of operation showed no growth.

He made an uneventful recovery in two weeks.

Case No. 3—Mary M., age seven. Chief complaint, enlarged and tender glands in left posterior cervicle region.

Family history: Mother had had tuberculosis which was first diagnosed when child was four months old. Babe was isolated from mother for three years. Mother regained her health to a great extent during this time and has been with child most of the time since.

Past history: Has always been a frail child. Has had measles, mumps, whooping cough and pneumonia. Had tonsils and adenoids removed one year ago.

Patient had a sore throat about a month before present illness. At that time she was also troubled with enlarged and tender cervicle glands in left side of neck. A week later she had an earache in left ear. This subsided in two days and was not followed by any discharge. Ten days later began to run a slight temperature, gland in left postero-superior angle became tender and enlarged. Throat was inflamed on posterior and lateral walls and in naso-pharynx. She was under the care of a competent physician. Her symptoms continued unabated in spite of the treatment prescribed.

I was called to see if anything could be found in the ears or nose. Examination: Girl was frail, but did not look very ill. She complained of no pain. Several enlarged glands were found in the region previously mentioned. Considerable tenderness over tip of left mastoid but only thickening of the periosteum was present.

The membrani tympani was red, thickened and bulging. Postero-superior wall of canal was not bulging. Considerable redness in naso-pharynx, but tonsils and adenoids were out clean. Temperature 100.4. A free incision was made in the drum membrane and a large amount of creamy pus was found with some odor. The usual treatment was instituted but the mastoid symptoms became more pronounced and her general condition became worse. White count was 21,000 and polys 46. Urine was negative, temperature 101. Culture from canal showed diplostreptococcus. X-ray showed left mastoid opaque. At operation the mastoid cells were in advanced stage of necrosis throughout. Not much pus was present. The dura over mastoid antrum was exposed by necrosis and was quite congested. Culture from mastoid pneumococci. She made an uneventful recovery.

Case No. 4.—Donald J., age eight. Reported February 3rd, chief complaint, swelling behind left ear. Redness, extreme tenderness over this area and pain in left side of head.

Family history negative.

Past history negative. Present illness: Had measles one month previous. Following this he had been troubled with a marked hæmaturia and had been confined to bed. During the measles he complained of some pain in right ear for two days. This subsided and no discharge had been noticed in the ear. His general health had gradually failed since having measles.

Examination: Boy was emaciated. Marked swelling was present back of right ear extending well up on side of head. This was reddened and very tender to touch. Canal was dry. Posterior wall was sagging markedly. Drum was not bulging. Its color was a dark grey with no lustre. Temperature 104, urine, straw colored, cloudy, acid, sp. gr. 1016, albumin 1 plus, sugar negative, granular casts 1 plus, Hyland cast 1 plus, red blood cells two plus, pus

cells two plus, bacteria three plus. White count 20,000, polys 76.

At operation, cells were filled with granulations, very little free pus except beneath periosteum, where outer mastoid cortex was perforated by necrosis. Cell walls were soft and putty like. The posterior wall of canal was perforated by necrosis. No exposure of dura or sinus. Culture showed long chains of streptococcus.

Following operation his urine cleared in five days. His general condition improved rapidly and wound was healed in two weeks.

Case No. 5.—Thelma W., age nine, reported April 24, 1924. Chief complaint was pain in left ear.

Family and past history were negative.

Present illness: Began to have pain in left ear four days previous to examination. Had had no cold or recent illness. Left ear began to discharge two days before. Pain not relieved. Unable to sleep nights. Pain mostly around left ear but radiated up in left temple. No previous trouble with the ears. Child's hearing had been greatly impaired since illness. Could not hear a loud spoken voice.

Examination: Child had the appearance of being very ill. Color was pasty and she had a septic appearance.

Left canal filled with pus. A very small opening in the drum and drum was bulging. Considerable tenderness over left mastoid but no edema or redness.

Right ear: No discharge in canal. Drum was a dark brownish grey in appearance and bulging very much. Some tenderness over tip of right mastoid but no redness or edema. Temperature 101 though the parents said it had been 103 the day before.

On account of the general appearance of the child and the fact that she lived out of town, about fifty miles, she was sent to the hospital for an x-ray and blood count. The picture showed the right cells to be opaque throughout. The left were opaque in the upper half and the remaining faintly outlined. This was unexpected as no history of trouble in the right ear could be obtained. The white count was 21,000 and polys 84. Both drums were freely opened and cultures taken from each. Some rales were elicited in right lung posteriorly and fluoroscope showed considerable haziness in this area. No history of cough. Due to the chest findings it was deemed best to watch her that day and appropriate treatment was prescribed.

The next day the chest had practically cleared. Pain in left ear had subsided a great deal. Both ears discharging freely and the cultures showed: right, pneumococci, left no growth. White count was 27,000, polys 82. Urine negative. Physical examination negative. That afternoon temperature went to 103 and a double mastoidectomy was done that evening.

Findings: Right outer cells were not necrotic. Cells were filled with serum and granulations. In region of antrum and extending back in posterosuperior angle the bone was very necrotic. The lateral sinus was exposed by necrosis from posterosuperior angle to knee. It was covered with granulations that were pale and unhealthy in appearance. The wall felt thickened but did not feel thrombosed. It was decided not to open it but to watch it.

The left mastoid was similar in findings though the necrosis in deeper cells was not so marked.

The next afternoon temperature went to 104 and white count went to 40,000, polys 85. The right sinus was opened. The walls were extremely thickened and a peripheral thrombus was found. The right internal jugular was ligated. Sinus opened freely and a good flow of blood was obtained from both directions.

The next day the white count showed 45,000 and polys 90. General condition was fair. She improved nicely for three days though a blood culture showed pneumococci present in blood stream.

She then began having the typical chills and temperature, temperature reaching 106 at its highest. Had four severe chills in one day. The last three days have not been so stormy but she is very weak and septic at the present time. From all indication she will follow the usual course of such cases and die.

These cases impress upon one the importance of examining the ears in all cases. A physical examination should not be considered complete without including the ear findings. This means the general practitioner should be able to recognize the abnormal in the middle ear for it is he that sees these cases first. To be sure, it is not possible to detect trouble in all cases by an inspection of the drum, even by those specially trained. But in the majority of cases it is, and the family doctor is the one that can avert much future trouble by being able to detect middle ear pathology.

In young children one cannot rely upon their crying and fussing with the ears as indicative of ear trouble. In many cases you will not get any such history and unless an inspection of the drum is made you will be ignorant of anything being wrong.

It was not the intent by these remarks to present anything new. This type of case is to be seen frequently by all of us and no doubt properly diagnosed and treated. But in handling the above cases the past year what struck me so forcibly was the fact that the condition had been allowed to develop to such an extent without recognition. It seems we should take our responsibility as specialists more seriously and to impress upon the family doctor the necessity of routine examinations of the ear in all physical examinations.

Discussion

Dr. Geo. C. Albright, Iowa City—I must confess that I am rather at sea in attempting to discuss Dr. Maiden's paper. The title of the paper as submitted

to me by our chairman and as published in the program is, "Mastoiditis, Acute, Without Previous Middle Ear Symptoms; Report of Cases". In response to a letter about two weeks ago, requesting the paper for study, I received a telegram from the essayist, saying that no paper had been written and that he expected to present a series of five cases of mastoiditis without previous aural discharge. The title as presented in the program and as given in the telegram are two quite different affairs. Mastoiditis, acute, occurring without any previous ear symptoms is a pretty rare condition. Dr. Dabney in 1915 was able to find only forty-seven cases of idiopathic mastoid abscess reported in all literature. On careful study of these forty-seven cases reported, he eliminated all but twenty-four, since the history showed that the cases did not conform to the title. Dr. Hempstead, reporting in 1923 states that he has been able to find only fifty-three cases reported in the English and American literature, twenty-six of which have occurred since 1915. He reports three cases of his own. In studying his cases, his own comment in two of the three cases is to the effect that, while there were no middle ear symptoms at the time of the mastoiditis, there had been middle ear symptoms a short time previous. In the service in which Dr. Hempstead is connected, 500 cases of the ordinary mastoiditis had occurred in the same period of time as the three cases of idiopathic mastoiditis which he reported. All of us have cases in which symptoms of acute mastoiditis develop previous to spontaneous rupture of the drum or before a myringotomy can be done or even before the attending otologist considers the middle ear symptoms sufficiently grave to advise a myringotomy. The doctor will recall that, while we were serving our internship together, it was the routine procedure, during part of that year at least, to do a mastoidectomy in all scarlet fever cases, just as soon as there was any redness of the drum membrane. Such cases, of course, never had any aural discharge. Undoubtedly cases of hematogenous osteomyelitis of the temporal bone, the so-called idiopathic or primary mastoiditis do occur, although such men as Richardson, Macuen Smith, Keiper, McKinney and Carmody believe that such a condition is extremely rare, much rarer than Hempstead, Hayes and Briggs believe. And these men find but one or two cases in years of a very large practice. It would seem to me that to make a diagnosis of mastoiditis without having any middle ear symptoms to guide us, is a pretty dangerous diagnosis for us to make. I believe that most of the cases of so-called mastoiditis without any middle ear symptoms are simply latent cases of ordinary mastoiditis infection secondary to middle ear involvement. The middle ear involvement may have preceded the mastoiditis by many years, remaining penned up in one or two cells of the mastoid or in the antrum causing no symptoms until some new factor upset the balance and the infection develops into a fulminating mastoiditis. It is easy to conceive that an acute, mild mastoiditis can resolve spontaneously, leaving a nidus of infection. Given a markedly constricted aditus and you could have the opening swell shut into the middle ear and mastoiditis develop as the result of lowered resistance. Such a case, however, we could not say was a mastoiditis without previous middle ear symptoms. My whole point is that in our terminology, we should be extremely careful. I do not feel that you can always tell by routine examinations what is going on in the mastoid. Neither do we always have definite facts or symptoms on which to base our judgment. We must often depend upon what, for want of a better term, we call our sixth sense, the surgical judgment, born of experience, which in a given case, tells us that, in spite of blood count, x-rays, clinical symptoms and other visible findings, the patient is not doing well. Or conversely, in spite of unfavorable clinical and laboratory evidence, that the patient is improving. For this reason the cases which the doctor has presented are of very definite value to us. The delineation of his cases will help to furnish an additional working basis for us in our every day practice.

Dr. C. B. Taylor, Ottumwa—I think this is a very valuable paper and very well handled. It has been interesting to me because a short time ago a patient was sent to me by a doctor who stated that the ear drum was bulging and should be incised. On examination the drumhead showed a slight reddening but no bulging. The past week or so the patient had been having a little pain in the side of his head. There was no tenderness over the mastoid, temperature 100. The so-called sixth sense made me suspicious of a mastoid. X-ray showed the cells broken down. On the basis of the x-ray findings, I telephoned the doctor who sent the case that I believed we had a very bad mastoid. With this case we had no inflammation of the drumhead at all. On operating the mastoid we found the cells broken and every cell filled with pus. This case was an example that we must be on the look out for mastoids and that we should look to x-ray to clear up diagnoses.

Dr. Sydner D. Maiden—I wish to thank you for the discussion given my remarks. As Dr. Albright remarked, the number of cases coming under the original title are very few but of those that are included under the title as changed amount to a much greater number. The original title emphasizes the main point of all these cases so far as the parents were concerned. That is, none of them had complained or fussed with their ears, or if so, not enough to impress the family that anything was seriously wrong. So that when I first saw them they gave a negative history for any ear trouble. It was only after questioning and asking direct questions was I able to elicit a history in most cases of having had some previous pain in the ear. In regard to not being able to diagnose middle ear trouble in some cases by simple inspection of the drum is quite true. But as was brought out in the paper I believe that in most cases you can. The drum may not be bulging or red but it will have lost its lustre in all cases and may appear grayish or dark in color. In cases of doubt it is best to play safe and do a myringotomy.

Once these cases get into the hands of the aurist they are handled satisfactorily but the idea I tried to convey was that we should attempt to call the general medical man's attention to these cases so that he will not be overlooking a serious condition.

PERNICIOUS ANEMIA: ITS RESPONSE TO TREATMENT WITH MERCUROCHROME

Preliminary Report

P. B. McLaughlin, M.D., F.A.C.S., Sioux City

Last June Dr. Allen C. Starry, Dr. Chas. P. McHugh and myself, began experimenting in the treatment of pernicious anemia by intravenous injections of mercurochrome.

Previous to this we had followed the usual plan of treatment laid down by the profession for the past years, which consisted of Fowler's solution, iron, dilute hydrochloric acid and blood transfusion. It is unnecessary for me to recall the result of such treatment, as it is far too well known.

Being struck by the frequency of the disease in this locality, or rather the increase of the number of patients that are admitted to St. Joseph's Mercy Hospital in the past few years, we naturally began to seek a cause of the malady. This was done by reviewing all the literature available, and by securing autopsies on cases which died of the disease. Portions of every tissue of the body were taken, sectioned and studied carefully, by Dr. Allen C. Starry, resident pathologist of the St. Joseph's Mercy Hospital, who submitted the following report:

All the cases autopsied here, showed some very interesting lesions. The lungs showed no change. The liver showed some fatty change and contained some iron pigment. The spleen was small and showed little change of note. The malpighian bodies were normal; there was no increase in interstitial tissue.

The bone marrow of the shaft of the long bones was deep red and markedly hyperplastic. Microscopically it contained many red blood cells both normal and nucleated. The normoblasts and megaloblasts appeared in about equal numbers.

The intestines show the changes as already pointed out in the literature.[1] There was a marked gastroenteritis. The gastric mucosa showed a very marked atrophy of the lining cells, and no oxintic cells could be seen in the small atrophic glands.

The submucosa was markedly thickened and showed marked lymphocytic infiltration, likewise the small and large intestines showed a marked chronic inflammatory change. The mucosa was atrophied, and the submucosa showed the same chronic inflammatory change noted in the stomach.

The stomach mucosa, as well as the mucosa of the intestines was covered with a thick glary mucous.

Assuming from the above pathology, the usual periodical rise in temperature, and the jaundice which is almost continually present, we decided pernicious anemia in all probability is caused by an infection.

We then selected mercurochrome as the antiseptic to be used intravenously in its treatment. And so far it has given surprising results in bringing about a remission in the disease.

The drug must be used methodically and guardedly and not by any haphazard method.

First the patient is given a complete laboratory examination, especially a kidney function test. (Although we have had no kidney disturbance so far in any of our cases.)

On an empty stomach, from 3 to 5 milligrams of mercurochrome per kilo of body weight are given intravenously;[2] being guided in the dosage by the general condition of the patient. The patient is watched very closely, and in from two to six hours the reaction generally begins, which consists of colicky, griping pains in the abdomen, caused by greatly increased peristalsis, purging, vomiting and sometimes involuntary micturition. The vomitus and bowel movements are especially characteristic, as they contain large amounts of bile and mucous. Temperature rises rapidly to 103° or 104°. This gradually subsides and after about twelve hours the patient becomes normal excepting a soreness across the abdomen caused by the remaining enteritis, which soon clears up.

In about three days the injection is repeated but a smaller dose three-quarters in size is given. This dose is again repeated in three days. It will be noticed that the reaction is far less, following the second and third doses, even though the large dose is given. The kidneys are watched closely after each dose.

The noticeable change in the patient's condition is first the return of appetite and then a gradual but general condition of improvement; the temperature remains normal and the jaundice clears up.

The temperature is taken every day and as soon as it starts to rise again, another full dose of mercurochrome is given. In preparing the solution of mercurochrome, the crystals, not the tablet, should be used, as the tablet is compounded with

gelatin in order that it will retain its form, and is not fit, for this reason, for intravenous use. Only freshly distilled water should be used in preparing the solution.

All the writer claims for the treatment is that he has produced remissions in the course of the disease in eight cases, where the blood rose to normal or nearly normal and has remained so for a period of eight months in the first case, and has also been maintained in the other cases treated. Transfusion of blood failed to do this.

The number of cases has been too meager to make any pretense for a cure, but from the results so far achieved, we hope this report might lead to more thorough investigation.

No case is reported below that did not show the following diagnostic points:

Definite anemia with characteristic grapefruit yellow color of skin.

Gastric analysis showed no free hydrochloric acid. Plus color index.

Anisocytosis and poikilocytosis, and the presence of nucleated red cells.

D. F. McL., aged sixty-two.—Positive pernicious anemia. First noted symptoms of disease September, 1921. Has had over fifty blood transfusions; the last one given was 500 c.c. whole blood, June 5, 1924, when his blood examination was; erythrocytes 1,470,000, leucocytes 6,800, hemoglobin 35 per cent. June 8; erythrocytes 1,220,000, leucocytes 7,100, hemoglobin 35 per cent. No improvement from blood transfusion.

On June 18, 1924, patient was given 20 c.c. of a 1 per cent solution of mercurochrome intravenously.

On June 29, erythrocytes 2,300,000, leucocytes 7,300, hemoglobin 60 per cent.

On July 2, 9 and 16, the same dose of mercurochrome was given, with a rise July 21 to, erythrocytes 3,880,000, leucocytes 6,100, hemoglobin 65 per cent.

No mercurochrome given in August.

On October 26, erythrocytes 4,220,000, leucocytes 5,900, hemoglobin 80 per cent.

He has had seven intravenous injections of mercurochrome in all, and on January 30, 1925, showed erythrocytes 3,170,000, leucocytes 5,600, hemoglobin 75 per cent, color index 1.1.

F. S., aged fifty-two.—Positive pernicious anemia. First noticed symptoms of disease August, 1924. This patient has had no blood transfusion during treatment.

Admitted to St. Joseph's Hospital November 21, 1924. Erythrocytes 700,000, leucocytes 3,900, hemoglobin 40 per cent.

On November 22 and 24, patient was given 20 c.c. of a 1 per cent solution of mercurochrome intravenously.

On November 26, erythrocytes 1,340,000, leucocytes 4,600, hemoglobin 50 per cent.

On November 29 and December 4, he received 20 c.c. of a 1 per cent solution of mercurochrome intravenously. December 6; erythrocytes 1,770,000, leucocytes 5,400, hemoglobin 50 per cent.

On December 15, 20 c.c. of a 1 per cent solution of mercurochrome was given, and this was the last dose to date.

On January 17, erythrocytes 2,840,000, leucocytes 9,200, hemoglobin 65 per cent.

On January 30, erythrocytes 3,580,000, leucocytes 7,600, hemoglobin 75 per cent. Color index 1.05.

J. A., aged forty-four—Diagnosed pernicious anemia. Admitted to St. Joseph's Hospital July 27, 1924. On admission, erythrocytes 3,670,000, leucocytes 7,800, hemoglobin 65 per cent, color index .9.

On July 28, received 30 c.c. of a 1 per cent solution of mercurochrome intravenously.

On August 8, erythrocytes 3,970,000, leucocytes 5,800, hemoglobin 70 per cent.

On August 9 and 11, received 30 c.c. of a 1 per cent solution of mercurochrome intravenously.

On August 17, erythrocytes 5,040,000, leucocytes 9,000, hemoglobin 65 per cent.

On September 15 and 17, received 30 c.c. of a 1 per cent solution of mercurochrome intravenously.

On October 11, erythrocytes 4,730,000, leucocytes 6,100, hemoglobin 75 per cent.

Patient was discharged from the hospital July 29 and has worked at his vocation since. He puts in sixty-five hours a week at his trade. Reported to me a week ago saying he has bleeding hemorrhoids and has been bleeding for the past two months. Clamp and cautery operation done next day. And January 30, 1925, erythrocytes 4,080,000, leucocytes 7,100, hemoglobin 80 per cent, color index 1.

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INTERMITTENT HYDRARTHROSIS*

T. F. BEVERIDGE, M.D. AND L. C. HOWE, M.D., Muscatine

One should apologize for presenting a paper or case report on a subject so unusual as the one we are reporting. It is not very practical to take much of the time of a society meeting composed of men interested in a wide, general practice, discussing at length a very rare disease. We will not, therefore, give a long history on what the literature so far contains on this disease entity, but for further reference, if you desire, an article by one of the men of our own state, Bierring,[1] of Des Moines, might be consulted. In September, 1921, he made a very thorough search of the lit-

*Read before the Southeastern Iowa Medical Society, Mt. Pleasant, Iowa, October 16, 1924.

erature and gave a complete bibliographic report of seventy-six cases reported to that date. He added one case, and since then Nielson,[2] also an Iowa man, has reported a case; Miller and Lewin,[3] of Chicago, reported one case, making a total of seventy-nine cases, and ours makes the eighteenth case so far as we are able to find at this time.

The first case found reported in the literature was by Moore,[4] an English author, in 1864. Nearly all of the cases reported are from French, German and English literature and if Bierring's classification is correct, ours is the eleventh case reported in America.

The peculiar and interesting feature of the disease is its very, very regular periodicity. It also in practically every case involves one or both knee joints; about one-third of the cases both joints, and two-thirds of the cases one knee singly. It is not quite correct to say the joint, for the articular surface, or at least the whole articular surface is not affected. It is one small spot just at the external lower edge of the patella as if it were a sub-patellar bursitis. The patient may be in otherwise good health in every respect and yet have these attacks as regularly as a woman has her menstrual periods or even more regularly as to exact date of onset. In one of the cases reported the doctor said a young, healthy appearing man walked into his office carrying a pair of crutches and when the doctor asked him why he had the crutches when he appeared so perfectly well he said he had them with him because he would need them tomorrow.

That is the history of our case. She has never had better general health in her life, now in her seventy-ninth year, than she has enjoyed since April, 1919, when these attacks first appeared, and weighs more now than she has weighed before.

Nothing satisfactory is known of the etiology. The larger percentage of cases are classed as idiopathic. Very seldom can it be ascribed to trauma or any previous local joint disease. Miller and Lewin tried to prove the anaphylactic character of the disease, and theirs is the only case we found that received any benefit from specific treatment, and this case responded to peptone and vaccine treatment intravenously. Our case has not been benefited or influenced by any treatment, medical or surgical, except the vaccine treatment has apparently modified the cycle somewhat. Typhoid vaccine intravenously seemed to start a slow, lengthening of the intervals both of remission of pain and the pain period.

Each case apparently has its own cycle, but usually about fourteen days of freedom from pain and then five days of pain. They vary, however, from two or three days' intervals up to thirty days.

In our case it was at first fourteen days' interval and five days' pain, but for the last two years or more has been sliding a little until it is now eighteen and nineteen days, twice twenty-three days and once twenty-four days. She was at first quite encouraged to see the intervals growing longer and hoped that if she lived long enough she might wear it out, but soon discovered the pain period is in exact ratio to the remission, whereas formerly the pain period was five days, now it is regularly seven to eight days just in same ratio as the relief interval is lengthening.

As we said above, the average duration of pain is five days, beginning with a sensation of "burning soreness" in small spot with localized swelling, heat and redness, increasing slowly two or three days or more and just as slowly subsiding. At the height of the attack the patient is incapacitated because of the pain. The local appearance is that of a localized edema, and most observers speak of it as localized edema. One is tempted to aspirate or incise and drain as we were advised to do by a prominent orthopedic surgeon and did twice with no result. Very little fluid was obtained and that was sterile.

Some authors refer to the hydrops as associated with other periodic diseases as asthma, migraine and epilepsy. The most striking phenomena is that reported by Moore and Pulawski[5] in its relationship to pregnancy and menstruation. One patient during three pregnancies was entirely free from the third month until the third month of lactation, and another patient in whom there was entire freedom during pregnancy until the first menstrual period occurred, and then the attacks were resumed in regular fashion.

History of the Case

Mrs. A. E. H was born in Cincinnati, Ohio, March 23, 1846. Her father died of pulmonary tuberculosis at forty-five years of age. Her mother was a small, alert, active woman, always enjoying good health except a mild degree of asthma, and lived to the age of eighty-two years. The patient had no brothers and only one sister, who was a strong, healthy woman and attained the age of seventy-four years and died of apoplexy. The patient, when an infant, sustained an injury to her left ankle and instep, supposed to be caused by the nursemaid swinging her body by grasping her foot and wrenching it. This caused a violent acute inflammation with history of much suffering for a time, but recovered, and a few years later, when five or six years of age, this foot was frozen and resulted in abscess and necrosis with a small piece of bone sloughing out. There was recovery from this with some ankylosis for which

she wore a brace or some form of ankle support for many years, but eventually regained a functionally normal foot.

She was married at the age of nineteen years and is the mother of four children. Her first child, a daughter, died at the age of thirty-four years of tabes mesentercia. Her third child, a son, died at the age of forty-eight years of organic heart disease. One daughter and one son are living and in good health. Her general health has always been good, except she was subject to occasional bilious attacks, and sick headaches, and she had one idiosyncrasy and that was if riding in a vehicle or auto or railroad car she suffered with so-called seasickness. Since the advent of the auto she has many times attempted to accustom herself to riding in them but has found after repeated and persistent trials that she must forego this popular method of recreation and pleasure, as she becomes very sick with uncontrollable vomiting after twenty or thirty minutes ride.

She never had asthma, never had true migrain, rheumatism in any form or any evidence of foci of infection in teeth, tonsils or sinuses. We have had her under observation and have treated the family for about twenty years and she has enjoyed uniformly good health except about two years prior to the onset of these attacks during 1917-18, she had a mild hyperthyroidism from which she fully recovered under rest and symptomatic treatment. During the hyperthyroidism (1917-18) there was some weight loss, and as she improved from this and weight increase began she noticed a regularly recurring pain in the left knee and in April, 1919, we made a diagnosis of synovitis. We saw her at the height of the pain period when knee appeared just a little swollen and a bit enlarged; this soon subsided; rather too quickly for a synovitis, only to recur at regular intervals. She was a good patient and would follow well any advice given, but all remedies and methods tried availed nothing of benefit so far as preventing recurrence. We had her seek other counsel and tried all suggested remedies and methods. She was given salicylates, quinine, arsenic, bromides, complete rest preceding and during attacks, ice-bags, fly blisters, etc., locally. Finally the regular periodicity occurring in exactly the same interval of time was noticed with complete relief and perfectly normal knee during the interval which was confirmed by radiograph of this knee and both knees for comparison. We then sent her to a nerve specialist and he referred her to an orthopedic surgeon and he sent her home with diagnosis of subpatellar bursitis and advised that we incise and currette the sub-patellar bursa. We did this twice. Once in the interval and once in the height of the pain period. No relief and no modification of the cycle whatever. We gave her typhoid vaccine intravenously, producing typical reaction. This appeared to lengthen the intervals between pain periods just a little and we repeated the typhoid vaccine once with no further influence on the attacks.

About this time, two years ago, it was noticed the attacks were regularly preceded by sneezing and the symptoms of coryza, so we gave her anti-catarrhalis vaccine, rhinitis compound tablets, atropine, etc., both preceding and during the attacks, with no result. The only difference we note is the slowly lengthening cycle of these attacks. The pain is just as severe, but no more so than during the first year. We believe the history and symptoms are so definite there can be no question about the diagnosis.

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HYPO-THYROIDISM AND HYPO-ADRENIA*

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It is considered quite the thing nowadays to urge caution in the use of endocrine products in therapy or even in discussion of endocrine conditions. Part of this urge comes from physiologists who know how meager is our information about the ductless glands and are fearful that our enthusiasm may lead us into error. Unfortunately, however, a great deal of this urge to caution comes from men who are not familiar with the facts actually known about these glands, but who seem to feel that their eminence in other fields of medicine gives them the right to speak authoritatively in this, regardless of their actual ignorance of the thing about which they are urging so much caution.

That organo-therapy is specific medication is a fact many critics overlook. They do not seem to remember that an accurate diagnosis must precede successful treatment in this as in most other fields of medicine. One can no more cure a case of hypo-thyroidism by giving the patient pituitary or adrenal gland than he can cure tuberculosis by giving the patient salvarsan. Some seem to feel that the doctor who pays any attention to endocrine disturbances must immediately forget all other possibilities in the patient's story; that he sees endocrine disturbances in every complaint and investigates no other system of the body. As a matter of fact, one must be very careful indeed to rule out other conditions before turning to the endocrines as being the sole cause of the patient's trouble.

Disorders of some ductless glands are accompanied by such changes in the osseous system, in the deposition of fat, or in the condition of the skin and its appendages as leave their imprint on

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the size, shape or appearance of the body. In these, inspection gives one valuable data aiding in their recognition and pictures of the patient illustrate the condition under discussion. Hypothyroidism is a good example of such a condition. It can be recognized without great difficulty and the diagnosis is accurate.

Disorders of other glands may cause just as profound disturbances in the patient's health, but they are not accompanied by such changes in the appearance of the body as can be photographed. The diagnosis of such disorders must be based on the history, physical and laboratory findings, and the exclusion of other conditions. Hypo-adrenia is such a condition. At one time this was probably the most frequently used term in clinical endocrine literature. It may be, and in all likelihood is, a common condition met in everyday practice but its accurate recognition is very difficult.

The etiology is given by most authors as follows:

Infections—
- Acute
- Chronic

Strain—
- Mental
- Physical

Drugs—
- Opium
- Mercury
- Alcohol

Symptoms of Hypo-Adrenia are as follows:

Muscular weakness
Progressive asthenia
Low blood-pressure
Sensitiveness to cold
Cold extremities
Weak heart action
Weak pulse
Subnormal temperature
Gastro-intestinal disturbance, bad taste, anorexia, vomiting, diarhea or constipation
Emaciation, bronzing, pigmentation
Probably in severe or long standing cases
Lumbar and abdominal pains
Tendency to syncope
Impairment of vision and hearing
Psychasthenia
Headache, irritability, hallucinations, delirium, convulsions, coma, and sudden death
Probably in adrenal hemorrhage or other sudden severe injury

The diagnosis must be made from the symptoms, history, physical and laboratory findings, and the exclusion of other conditions capable of causing the symptoms of which the patient complains. This might be summarized as follows:

1. A considerable percentage of the symptoms of hypo-adrenia should be present in the case.
2. The history should show an etiological factor which might cause the condition.
3. Physical findings:
   - Low blood pressure
   - Sergent's white line
   - Cold extremities
4. Laboratory findings:
   - Low basal metabolic rate
   - Low blood sugar
   - Secondary anemia
5. All foci of infection and other conditions capable of producing the symptoms should be excluded.
6. I should finally wish therapeutic confirmation of the diagnosis before feeling certain that hypo-adrenia per se was the cause of the patient's trouble.

The symptoms produced by chronic foci of infection are many times the same as those enumerated. It may be argued that the infection produces its symptoms by exhausting the adrenals in their fight against it. This may be true; but the patient will recover more quickly by removing the infection and then giving adrenal substance than he will by the administration of adrenal alone.

I do not mean to infer that hypo-adrenia is a rare condition, for I am convinced that it is a common one; but its positive diagnosis is very difficult. As a complication or sequel in chronic infections and retarding the convalescence after such acute infections as grippe and pneumonia I feel sure it occurs very frequently. My feeling is that the adrenals are depleted or exhausted, or call it what you like, by the etiological factors mentioned. Cowie and Bevan have shown definitely that they are adversely affected by the flu while other observers have used them with good results in such conditions as cholera and dysentery. For these reasons I use them a great deal in chronic infections, both before and after removal of the foci of infection, also during convalescence after acute infections. Employing in this condition a formula proposed by SaJous as follows:

℞

Blauds mass 1 grain
Thyroid ¼ grain
Adrenal 1 grain
Strychnia 1/60 grain
Sig: 1 capsule TID

The thyroid is included only when I am sure no hyper-thyroidism is present. If this is not exactly scientific it is at least "rational empiricism".

The dosage of adrenal is usually 1 or 2 grains TID. I know of no signs of over-dosage.

In contrast with the indefinite symptoms of hypoadrenia and the difficulty of accurately diagnosing this condition are the well-marked signs

and symptoms of hypothyroidism which make its diagnosis comparatively easy and accurate. A description of it follows.

Effects of Hypo-Thyroidism—Hertoghe said many years ago, "No cell, whatever its nature, attains the morphological completeness necessary to the perfect accomplishment of its function without an essential quantity of thyroid secretion". This may be taken, I think, as a fact and explains why the symptoms of hyo-thyroidism are manifested in every organ and tissue in the body. The thyroid occupies about the same relation to the body that the ignition system does to the automobile, and these patients are missing on one or more cylinders, depending on the degree of their thyroid insufficiency.

The signs and symptoms of this condition are dependent on lowered metabolism. Its effect on anabolism is shown by malnutrition, imperfect assimilation, and thinness. This is most frequently seen in children. It is occasionally seen in adults. Whether it then represents an early stage or mild degree of this condition I am unable to say. The most pronounced and most frequently seen signs and symptoms in adults are the result of a lowered catabolism. This results in the infiltration which is responsible for so many of the symptoms.

Symptoms—

So-called rheumatic pains in the back, especially across the shoulders.

Chilliness and sensitiveness to cold.

Brittleness of the nails.

Premature aging, greyness and dryness of the hair.

A tendency to baldness.

A waxy hue of the facial skin.

Anemia.

Early loosening and caries of the teeth.

Bleeding and receding gums.

Persistent congestion of the mucosa of the upper respiratory tract. This is manifested especially by so-called "catarrh."

A lack of pep and endurance.

Loss of the power of concentration.

Somnolence, especially in the morning.

Menstrual disturbances are common.

Various forms of tinnitus. Engelbach says and I heartily endorse the statement that every case of so-called "catarrhal deafness" or deafness from any unknown cause should be given a considerable course of thyroid medication.

Constipation and intestinal stasis is usual. The effect of this condition on various parts of the body will be taken up in detail.

The Skin and Its Appendages—In color the skin varies from buff pink to alabaster. There is usually a permanent flush over the malar prominences. There is a good deal of non-pitting edema present in various parts of the body. The eyelids are puffy, producing a narrowing of the palpebral fissures. The ankles, feet, and hands appear edematous.

In texture the skin is coarse and dry. These patients perspire very little, even in hot weather. The epithelium deteriorates and falls prematurely so that many times there is a sort of branny desquamation over the body. Many dermatoses are probably due to this. In infants it is eczema, in adolescence, acne, and in adults, pruritus, ichthyosis, furunculosis, etc.

The hair is dry and brittle. It ages prematurely, becoming grey or falling out enough to produce baldness. In the hypo-thyroid families about half of each generation were bald while quite young. I have, under treatment at this time, a boy age six, about half of whose hair is missing. I do not believe the baldness follows any pattern although a number of cases of alopecia areata seem to be of hypo-thyroid origin. The outer third of the eyebrow is frequently absent or very thin; the so-called Signe Du Courcil. The body hair is scant. The axillary hair is scant and the legs are almost destitute of a hair suit. This last is a frequent and important sign.

The Nails—These are poorly nourished, dry and brittle. They are frequently straited and ridged while white spots and defective lunular markings are common. They are usually thin but at times become quite thick. Sometimes the distal third of the finger nail is missing.

The Teeth—If this condition occurs in infancy there is a delayed eruption of the teeth. Instead of appearing at the sixth month they may be delayed to the thirteenth or later. The teeth are poorly set with a tendency to irregularity of placement, particularly the upper canines which are often misplaced markedly, either anteriorly or posteriorly to the normal tooth line. Cusp and enamel development is imperfect. The teeth are usually of poor quality. The gums are in bad condition and pyorrhea is frequent.

Respiratory—These people catch cold easily and recover with difficulty. There is an infiltration of the larynx and vocal cords which causes a huskiness of the voice. Infiltration of the bronchi and bronchioles causes a narrowing of their lumen which leads to respiratory oppression, sometimes mistaken for asthma. These are the asthmas cured by thyroid. The congestion of the upper respiratory tract extends to the Eustachian tubes and to the nerve centers. It so accounts for many cases of tinnitus aurium. The respiratory rate is slow. In many of my cases

the rate was as low as twelve per minute. One girl of twenty years had a rate of ten per minute.

The Gastro-Intestinal Tract—In infancy this condition is accompanied by many gastro-intestinal upsets. These are difficult feeding cases. In adults the appetite is usually poor and intestinal stasis is the rule. The scantiness of the secretions combines with muscular paresis to produce the most obstinate constipation. There is a great deal of fermentation; ptosis of the stomach and colon is quite common. Many of Lane's symptoms of intestinal toxemia appear to have a hypo-thyroid background. Many cases of mucous colitis are accompanied by hypo-thyroidism.

Liver and Gall-Bladder—In marked cases the liver is passively congested, enlarged and tender to pressure. The gall-bladder is tender, especially in cases of long standing. Here, as elsewhere, the epithelium desquamates rapidly leaving a tender gall-bladder wall exposed to the irritating bile. Masses of epithelium form the centers for calcareous accretions. Gall-stones are common in myxedema and not at all rare in milder forms of hypo-thyroidism. It is quite probable that the strawberry gall-bladder so much in vogue among surgeons a few years ago was of hypo-thyroid origin.

Genital-Urinary System—The kidneys are not often severely effected. The rapid desquamation of their epithelium leaves the bladder walls very sensitive and so leads to frequent urination in adults and nocturnal enuresis in children. The urine is usually scant in quantity, high specific gravity, and low urea content. Occasionally the opposite is true. The explanation for this I do not know. A high degree of indicanuria is a frequent finding. Occasionally there may be a small amount of albumin and a few casts. These rather rapidly clear up under thyroid medication. It is not at all unusual to find a case of hypo-thyroidism that has been treated for some time as a nephritis.

The Blood—A mild secondary anemia is the usual finding. There is a reduction in the percentage of polynuclears down to sixty or less. This reduction in the polynuclears is such a constant finding that it has considerable diagnostic value.

The Circulation—The pulse rate is slower than average. The blood-pressure is of no diagnostic significance. It is low in most cases but is frequently quite high. The patients will tell you their circulation is poor because they are always cold. The body temperature is usually subnormal.

Bones, Ligaments, Cartilages and Muscles—Infiltration of the muscles causes weakness, stiffness and soreness. There is a constant complaint of weariness out of all proportion to the exertion. They are tired in the morning and feel better as the day goes on. These are the people who sit down at every opportunity and lean against something when they cannot sit. Relaxation of the ligaments occurs. The ankles turn easily and flat-foot is a frequent finding. Rheumatoid pains about the joints are frequent. These are some of the last symptoms to disappear under treatment. In infancy there is a delayed growth of bone. If this is sufficient there may be some stunting of growth. The ossification of various bones is delayed. For example, one carpal bone should be ossified to its periphery for each year of age. There is considerable delay in this in the presence of hypo-thyroidism. The epiphysis remains open much later than usual. In adults this is a frequent cause of delayed union of fractures.

The Nerves—The nerve cell suffers the same infiltration as the other cells of the body. This probably explains the neuritic pains so frequent in this condition. These sometimes resemble the lightning pains of tabes. Jellife has reported several cases that had been diagnosed as tabes but were cured by thyroid medication.

The Endocrines: The Thyroid Itself—Most of the so-called "simple goitres" are the result of a compensatory hypertrophy. Most colloid goitres appear during adolescence. They are accompanied by a metabolic rate of from -8 to -15 per cent. Practically all of these can be somewhat reduced in size by thyroid medication. The wholesale use of iodine, suggested by some public health authorities, is to be condemned. Goitre is not a public health problem. While most adolescent goitres are of the so-called "simple variety" a sizable percentage are adenomas and these do not tolerate either iodine or thyroid medication. Iodine very quickly changes a benign adenoma into the toxic variety of goitre. It is my belief that an adenomatous thyroid is always a surgical condition and is amenable to no other form of treatment. A good many cases of thyroid insufficiency are accompanied by a very small thyroid gland. Why one case should have a very large thyroid and the other a very small one is one of the questions yet to be solved.

The Thymus, Para-Thyroid and Mammæ—Evidence regarding the relation of these is so indefinite and conflicting that one can only theorize. The pancreas is said to be always overactive. The only basis for this statement is that

hypo-thyroid people have a low blood sugar and a high sugar tolerance.

The Adrenals—Appear most frequently to be under-active. The fact is that we know very little about the function of the adrenal cortex, and until our knowledge is more complete any discussion of thyroid and adrenal relations will have more to do with theories than with facts.

The Ovaries—One school believes they are synergists and mutually stimulate each other. The opposite view is held by others. It is quite likely neither is entirely correct. Much has been written about the thyro-ovarian syndrome. This is for the most part one of hypo-thyroidism. Irrespective of which gland is first involved the terminal condition shows a preponderance of thyroid symptoms. The first complaint is a backache, a lumbo-sacral pain which may radiate down one or both legs. This is frequently relieved during the menstrual period. It cannot be explained by static conditions nor relieved by orthopedic measures. In former times ventral fixation was a favorite treatment for it. Headache and dizziness are prominent and later trophic disturbances occur. As the condition progresses the signs and symptoms of hypo-thyroidism become more marked. A frequent complaint, especially of middle-aged women, is that the hands are stiff and boggy in the morning. The woman's rings are apt to be very tight in the morning.

The menstrual history of a hypo-thyroid woman is longer than that of her normal sister. The periods begin earlier in life, quite frequently at eleven or twelve, and continue later. They are usually characterized by their regularity, profuseness and freedom from pain. Some of these women feel better during pregnancy and lactation than at any other time.

Mental—This is a common condition in a considerable number of delinquent and mentally deficient children. These are the dull, disinterested and lazy children. In adults retrograde mental changes are the rule. Somnolence is a prominent complaint. Frequently they complain of insomnia at night and somnolence during the day. There is a slowness of ideation, forgetfulness and loss of power of concentration.

Among the rich these are the uncured invalids; the misunderstood who have alienated themselves from their families by their constant complaints. Among the poor the thyroid insufficiency of the mother is reflected in the home, in the dirt, disorder and lack of economy. She is physically too weak and mentally too sluggish to rise to an equality with her tasks. French writers believe there is a hypo-thyroid factor in many cases of epilepsy.

Physical Findings—There is no condition in which one can get more information by inspection than in hypo-thyroidism. The hair, nails, teeth, skin, the distribution of obesity. The fat distribution is characteristic; there is a full, round face, double chin, supra-clavicular padding, cuffing about the wrists and ankles, the dorsum of the fingers, hands and feet are padded. The points just mentioned help to differentiate this condition from the fat due to a deficiency of the posterior lobe of the pituitary. Slow pulse, slow respiratory rate.

Laboratory Findings—Secondary anemia, low polynuclear count, low blood sugar, low basal metabolic rate. The urine is usually low in urea and frequently contains a large amount of indican.

The Diagnosis—Is made on the symptoms, the history, the physical and laboratory findings, and the exclusion of other conditions.

Treatment—Is specific, thyroid in various doses, being particularly careful not to give an over-dose. The dose depends on the degree of insufficiency. Perhaps the best measure of this is the basal metabolic rate although in gauging the dosage one should consider not only the metabolic rate but also the symptoms and physical findings. In the milder cases I begin with one-quarter grain TID and never give more than one grain TID until the patient has been under treatment for some time. People taking thyroid should be seen at least every third day until the dosage is regulated to their needs. Some measure of the effect of thyroid medication can be had from the increase in pulse rate, the presence or absence of a tremor of the outstretched hand, and the subjective feeling of trembling which the patient will describe when he is getting a little more thyroid than is good for him.

A REFERENDUM VOTE ON HEALTH INSURANCE IN OREGON

A referendum vote on an amendment to the Workmen's Compensation Law in Oregon resulted in a vote of 225,132, of which 73,270 were cast in favor and 151,862 were cast against the measure.

It is stated that the opposition was not due the measure in principle, but to the arbitrary powers granted the commission.

Is this the beginning of legislative activity in favor of adopting some form of state medicine?

The Journal of the Iowa State Medical Society

D. S. Fairchild, Editor ..... Clinton, Iowa

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PHYSICAL TESTS FOR MOTORISTS

Newspapers and all kinds of people are bewailing the disasters attending the use of motor cars, the increasing number of accidents and fatalities, and constantly increasing number of cars in use and the increasing number of motorists. The motor car has come to be a sacred institution. It involves a great business, and the sacrifice of many lives is none too much in the interests of business. Traffic rules without number have been adopted in cities, in country and everywhere, but the sacrifice goes on.

Why do railroad companies and steamboat companies demand a physical examination for all men having to do with transportation and repeated examinations after reaching a certain age? Why does the army, the navy, and the aviation service require a physical examination of men entering the service? The answer is obvious. Is the risk in these services greater than the operation of motor cars on streets and highways? No. Then why do we allow men, women and children to drive cars without a physical examination, and in many states even without a license based on qualification? No answer.

This subject was taken up at the meeting of the American Medical Association. If the lay press has commented on the report, we have not seen it. Why?

In this connection we are publishing a part of the report as it appears in the British Medical Journal.

"In the United States—no less, perhaps even more, than in this country—there is much concern about the increase in the number of casualties due to motor cars, but in neither country does it seem to be known how far the increase is out of proportion to the change in the conditions of traffic brought about by the popularization of the motor car. The American Medical Association, at its annual meeting in Chicago last June, had before it a report of a committee appointed to consider the adoption of physical standards for drivers of motor vehicles. The report was read to the Section of Ophthalmology, but it is significant that in considering the subject and making recommendations the committee went far beyond the question of eyesight. It dealt also with defects of the limbs, with hearing, with the action of the heart, and with the mentality of the applicant for a license to drive.

"The committee was evidently greatly impressed by the present state of things. It began by expressing the opinion that 'the appalling increase in the number of casualties from motor vehicles throughout the United States makes it imperative that everything possible be done to lessen this evil'. The members describe themselves as 'physicians cognizant of the harm that may arise from the operation of such vehicles by those physically unfit for such a dangerous operation'. The committee urged the medical profession in the United States to 'insist on the passage of laws in each state with a view to restricting the granting of licenses to such persons as may submit themselves to physical tests at the hands of properly qualified medical practitioners'.

"In the opinion of the committee, every driver of a motor vehicle should be required to produce to the motor licensing board a certificate showing: (a) that he has no disqualifying defects of either legs or arms; (b) that his vision is at least 20/50 in one eye and at least 20/100 in the other, with or without glasses; (c) that he has not double vision; (d) that he can hear a low spoken voice at five feet; (e) that his 'mentality is adequate', and his 'heart's action reasonably healthy'. It was proposed that the license should be renewable annually, but that a new medical certificate should be required only every three years, the applicant making a sworn statement in the intervening years that to the best of his knowledge, there has been no change in his physical condition."

HISTORY OF MEDICINE IN IOWA

In 1875 the writer was made chairman of a committee to prepare a History of Medicine in Iowa for the centennial year. Having an abundance of leisure, he entered actively on the work

of gathering material. Fifty years ago there were men practicing at the various county seats who knew personally the early or pioneer physicians, and the conditions under which they practiced, and also the diseases with which they had to contend. Some of these men were real pioneers themselves. It was not difficult then to get reliable data, the only difficulty was to get them to write out what they knew about the men who preceded them, but by diligent effort and many letters we were able to get the information we needed in preparing a fairly complete history of the older counties. About fifteen years ago we prepared this data for publication, which appeared in serial articles in the Journal of the Iowa State Medical Society and republished in book form of 130 pages.

Later, the writer observing the remarkable changes that had occurred in the practice of medicine in our own state, began an inquiry into the activities of these early practitioners in developing the territory and state in a chronological order. Having access to several histories of Iowa, the publications of the State Historical Society, the Early Transactions of the State Medical Society, and files of early newspapers, through the courtesy of Johnson Brigham, State Librarian, and the early county records, the first volume of the Iowa Medico-Chirurgical Journal, published in Keokuk in 1850, through kindness of Dr. Frank Fuller and several numbers of this and its successor, the Iowa Medical Journal up to 1868, we were able to cover the ground as to biographical sketches and activities of physicians in Iowa from 1820-1870—a period of fifty years. The interest grew and we extended our inquiries to organizations and history of Iowa State Medical Society from its organization in 1850, including a list of charter members, the organization of county medical societies, the organization of medical schools and medical institutions, and the history of medical journals in Iowa. We have included the medical activities of medical practitioners in the Great War, and endeavored to do so in relation to the medical officers in the Civil War, but found ourselves limited to the individual cases in connection with the biographical sketches. This book covered several years of research. We have been indebted to the descendants of pioneer physicians and numerous other sources. Most of our papers have been published in the Journal from time to time.

It has been a source of great pleasure to record the names and the work of men who came to Iowa to practice medicine in territorial days and in the early days of statehood. Many of these men have descendants who are practicing medicine in Iowa today under conditions so vastly different that the past seems only a tradition. Particularly is this true of medical education. Another feature of considerable interest is the production of pictures of the men referred to where it has been possible to procure them.

We have arrangements to publish 250 copies of a volume of 500 to 600 pages. As the expense of publishing these volumes would be a considerable burden to the writer, it is proposed to present the copy to the State Medical Society and offer these volumes to members of the State Society at the actual cost of printing and binding. We are not able to state the cost at this time, as the work is not quite complete, but the cost per volume will be moderate. The author reserves no proprietary rights. As the edition will be limited to 250 copies, it will be helpful to us to know at as early a date as possible, who would desire a copy. We will be able soon to name the price. We have made provision only for a few men who came to Iowa after 1870 or who are now living. All of those whose obituary notices we have published and who have died recently and printed in 8-point type, will not appear. If it should be desirable, these notices can be arranged in another publication. Our effort so far has been to preserve the names and the work of those who had a large part in the organization of the Territory and State.

Those who have followed the publications of the State Historical Society will observe that all forms of business and professions have been recognized except the medical profession, which has been left to members of the profession itself.

We have found that from July, 1838, when the Iowa Territory was created by an act of Congress, which included that part of the Wisconsin Territory lying west of the Mississippi River, to the admission of the Iowa Territory as a state, ten years later individual members of the medical profession rendered valuable service, and again from 1848 to 1870, when this story ends. From the days of Dr. Muir, an army surgeon, who built the first log cabin where Keokuk now stands, and who, with Dr. Isaac Galland, laid out the city of Keokuk and named most of the streets. Dr. Galland was born in 1790 and settled on the west shore of the Mississippi near what was known later as Nashville—now Galland—in 1829, where his daughter Eleanor was born in 1830, the first white child in Lee county. Dr. Galland was engaged in various enterprises, among others was the publication of the second newspaper published in Iowa. From 1833 to 1839 he practiced medicine about Nashville (Galland) and Montrose, when he moved to Keokuk. The appearance of

Dr. Edmund Andros in Dubuque in 1833 when Iowa had 10,531 people, and so on to the establishment of the Capitol of Wisconsin Territory at Burlington when a group of physicians located in Des Moines County. In 1839 the Capitol of the Iowa Territory was located at Iowa City and there came in 1838 Dr. Henry Murry, followed in 1839 by Dr. Ezra Bliss, and other physicians of whom we have biographical sketches. Among the early physicians was Dr. J. M. Robertson, who located in Burlington in 1838 and after a few years moved to Columbus City, which he helped to plat, and enjoyed a territory extending from Cedar Rapids to Keokuk. Dr. Robertson being familiar with the Indian language rendered valuable service in the treaties with the Indians. His son, Dr. W. S. Robertson, rendered equally valuable services to the state at a later period in organizing medical service institutions, as will appear in relation to the history of these institutions.

This is a brief outline of our work in gathering and preserving the biographies of our earliest physicians and their work in developing the state and its medical institutions, of whom we know but little.

Other states have taken up this work but at a later date when the data is difficult to secure. The merit of our work—if it has merit—is to follow in chronological order the events and the relations of our profession to the events for the first fifty years, from 1820 to 1870, and not merely the individual biographies of the distinguished practitioners. Wherever we have found the name of an early practitioner distinguished or not, have sought to fix his relation to the events as they have occurred.

DIATHERMY IN CARDIOVASCULAR DISEASES

Dr. Baruch Last of New York, in the New York Medical Journal and Record discusses "Diathermy in Cardiovascular Diseases" as follows:

"Of the diseases of the heart those that are accompanied by pain are readily amenable to this form of treatment. Cases of myocarditis due to disturbance of the coronary arteries are the first to be considered. Cases of myocarditis of not long standing, accompanied by a feeling of oppression, painful sensations around the cardiac region, and occasional attacks of angina pectoris, are benefited by this form of treatment. It may not be successful in a 100 per cent of the cases, but in each and every case included in this category diathermy should be given a trial, especially when about five treatments will be beneficial or not.

"There are certain symptoms and physical signs which, after five treatments, will be positive indication of the advisability of continuing the treatment. If there is a partial cessation of painful sensations and of oppression; if there is a lowering of the pathologically increased blood-pressure, not only after treatment, but is also less at each consecutive treatment, so that there is a steady lowering of the blood-pressure value without exaggerated fluctuations, we may be sure that we are dealing with a case that is going to respond. If these things do not occur nothing should be expected of the treatment and it should be discontinued.

"The effect of diathermy on high blood-pressure has already been mentioned in connection with coronary disease. There is no doubt that a reduction of high blood-pressure follows this treatment. The treatment is especially of great value in the early presclerotic cases with moderate tension, as without doubt it postpones the sclerotic stage for many years. It is understood that cases of hypertension due to a certain definite anatomical cause, such as aortic aneurysm, no permanent objective results are to be expected, although certain temporary improvement of subjective symptoms such as pain oppression and sleeplessness occurs."

CUMMINS-VAILE BILL

Not that the Cummins-Vaile bill directly involves sex considerations. It doesn't. It only seeks to repeal those laws classing scientific information about contraceptive methods with obscenities and excluding it from the mails. But this indirect relation of the bill to "birth control" has paralyzed the reasoning faculties of some members of the committees and impelled them to try to smother the bill regardless of its merits. When the senate sub-committee reported the bill in January, one agitated senator moved indefinite postponement. This would have buried the bill for the session. Senator Cummins put up a vigorous protest and the motion was withdrawn. The "daily dozen" plan has been introduced as an aid to normal thinking.

The plan is also a "first aid" to minute-saving in these last days of the session. One reason a day keeps the "no-time-for-consideration" argument of dilatory senators away. "There are spare minutes despite the legislative jam and rush", declares Mrs. Mary Ware Dennett, director of the Voluntary Parenthood League. "Observation from the galleries proves it. Why not be thrifty of minutes?"

The "daily dozen" series will end on February 19th and will be made public then, with the answers and attitudes of the members who have been using it. It is expected to culminate in committee action.

Thousands of representative citizens all over the country are backing the aim of this bill. Among them are such distinguished people as: Dr. W. A. Pusey, president of the American Medical Association; Dr. Lawrence Litchfield, former president of the Pennsylvania State Medical Society; Dr. H. G.

Brainerd, president of the California Psychopathic Association and former president of the State Medical Association; Dr. Ira S. Wile, editor of "American Medicine"; Bishop Benjamin Brewster of Maine; Rev. Stuart L. Tyson of New York; Bishop Frederick F. Reese of Georgia; Reverend L. M. Birkhead of Kansas City; Prof. Irving Fisher of Yale University; professor F. H. Giddings of Columbia University; Dr. Henry C. McCracken, president of Vassar College; Dr. David Starr Jorden, president Emeritus of Stanford University; Miss Lillian Wald, head of the Henry St. Nurses Settlement of New York; Mrs. Evarts Graham, vice-president of the League of Women Voters of St. Louis, Missouri; Mrs. Walter McNab Miller, chairman of the Welfare Department of the General Federation of Women's Clubs; Mrs. Felix Warburg of New York, and Mrs. Julius Rosenwald of Chicago.

JOHN STEARNE, FOUNDER OF THE IRISH COLLEGE OF PHYSICIANS

The three hundredth anniversary of the birth of John Stearne (1629-1669) was celebrated by a reception on November 26 at the Royal College of Physicians of Ireland says the British Medical Journal for January 24, 1925. A scholarly address of greatly literary distinction, dealing with their pious founder's life and activities was delivered by the registrar, Dr. Percy C. Kirkpatrick, whose numerous essays on the same lines mark him as an author to provide us with a complete history of the Irish College of Physicians.

Stearne entered Trinity College at the tender age of fourteen and one-half years, and became a scholar in 1641; but the times became so troublous that the Provost sought refuge in England, and among others Stearne followed his example; in 1642 he entered Sydney Sussex College, Cambridge, where he almost immediately took the B. A. degree, proceeding to the M. A. in 1646; in the intervening four years, the happiest part of his life, he probably read deeply in classics, the philosophical works of the ancient fathers of the church, and medicine. Francis Glisson was regius professor of physics (1637-1677); Wharton of Pembroke and the Adenographia and George Ent of his own college were then associated with the university. About 1649 the times again obliged him to move, and on this occasion he went to Oxford, where he turned in his distress first to stoic philosophy and then to peace in Bedfordshire. But in 1651 he was admitted a Fellow of Trinity College, Dublin, becoming a Senior Fellow in the next year and professor of Hebrew in 1656; as he was also professor of medicine and perhaps lectured on law, he is a typical example of the all-around excellence of a Fellow of Trinity. His seventeen years of residence were extremely busy and saw much productive work; he wrote six books in Latin, all on philosophicotheological subjects and not dealing primarily with medicine; his erudition was great, but originality—in those days a dangerous property—was not obvious in his writings.

As a medical practitioner, Stearne was a follower of Hippocrates rather than Galen, being an ardent supporter of physical therapeutics, and an enthusiastic advocate of the use of cold water, tobacco (chiefly by chewing), opium, and the smell of freshly dug earth, which, Dr. Kirkpatrick slyly adds, may also "explain the benefit which some golfers believe that they obtain from the pursuit of the game". In 1661 Stearne set about founding the College of Physicians, obtaining a Royal Charter from Charles II in 1667, and was nominated president for life.

—Medical Journal and Record.

MEDICINE IN JUGOSLAVIA

The last fifty years has seen remarkable progress in the teaching and practice of medicine in some of the associated countries included in the post-war state of Jugoslavia, says the British Medical Journal of January 24, 1925. After a long period of lethargy, due to social and political reasons, the national life of Crotia began to awake, and numerous literary and social societies were established between 1860 and 1870. In 1874 the Croat University at Zagreb was founded, and included among its more important scientific societies was the Medical Association of Crotia and Slavonia. For the last fifty years this association has been the center of medical science in the country, and its activities have given birth to much hygienic legislation and progress in knowledge. The association was from the start the sole representative organization of medical practitioners in the two countries. Various congresses have been held dealing with a large variety of subjects, and in 1877 the official journal of the association, the Lijecnicki Vjesnik, appeared for the first time. One of the first aims of the association was the organization of a faculty of medicine at the Croat University of Zagreb—an ideal realized in 1917. In 1923 the association created a body to deal with the many and varied social interests of its members. The jubilee of the association occurred last year.

—Medical Journal and Record.

QUARTZ LIGHT

Dr. John Perl Parsons of Ann Arbor, Michigan, in a paper published in the Journal of the Michigan State Medical Society for January, 1925, presents some experimental work on the use of the ultra violet light in certain forms of disease. When a patient is exposed to the ultra violet light for a fairly long time, he feels a sense of exhilaration which reaches its height in from three to four hours. If the exposure is longer or if he receives an over-dose, he suffers from dizziness and nausea.

The author sees no advantage in pushing the treatment, as it is shown that plant cells absorb only a

limited amount of light, and that blistering the skin only serves as a counter irritant.

The blood changes induced by ultra violet light are interesting. It has been shown that an increase in general leucocytosis develops, from three to five thousand in the cell count, which reaches its height in three to four hours after exposure to the light and continues from eight to twenty-four hours. Dr. Parsons observes: "In cases of rather marked secondary anemia, we notice an increase in the hemoglobin after prolonged treatment. Changes in the calcium content of the blood may also be produced."

In debilitated children from eighteen months to three years old, the violet rays are found of particular value in that they stimulate the appetite, especially in rickety children with low calcium content. The author also recommended the rays in certain skin diseases, as eczema, peoriasis, and simple infections of the skin and in secondary anemias.

THE SHEPPARD-TOWNER ACT

The Editor of the Journal of the Indiana State Medical Society is still unconvinced of the wisdom of the Sheppard-Towner Act, for, he says in the January number:

"The Sheppard-Towner act is a meddlesome piece of legislation, as has been pointed out by the Journal of the A. M. A. and other periodicals that have analyzed its provisions and operation. It was proposed and supported by a lot of self-constituted uplifters and pseudo-welfare workers, and it passed congress as a direct result of the creation of a false sentiment together with lack of concerted action on the part of the medical profession to prevent inflicting the public with such a piece of needless legislation. But few of the states have accepted the provisions of the act, and now, as was to be expected, the self-constituted welfare workers are trying to point out its benefits without being able to offer any substantial proof. The only way in which the value of the Sheppard-Towner Act can be proved is by comparing its effects in those states where it has been accepted with similar conditions in states where it was not accepted. It is a meddlesome piece of legislation that has no scientific value, and it does what a lot of other needless acts do in creating jobs and bringing the people closer to a paternalistic government than we relish."

MAIL ORDER DIAGNOSIS

California and Western Medicine has discovered what it calls a Mail-Order Medical concern operating in Chicago, a non-medical company which has a medical director, of course, who is a member of the Illinois State Medical Society and a member of the American Medical Association. The purpose of this commercial company is to conduct life extension by periodic health examinations.

In its propaganda the concern states: "Our medical director gives on each report, personal remarks upon your physical condition, and while we do not treat nor diagnose, we are always willing and ready to help our subscribers by writing a personal letter, advising them of the significance of the findings." To their California customers the company directs the sending by mail a specimen of urine for quarterly examination, and they find only 5 per cent of 5000 California subscribers to have normal urine, and further says in its propaganda that "reference to them so often enables our medical director, in his comparisons, to note approaching trouble in time for it to be corrected by the simple means suggested in our reports."

This is all very interesting.

MILWAUKEE RAILROAD'S SAFETY ACHIEVEMENT

During the year 1924 the safety and fire prevention bureau conducted on the various divisions of the Chicago, Milwaukee & St. Paul Railway Co., 456 safety meetings.

These meetings were attended by 3,594 officers and 6,868 employes.

At these meetings were received 11,395 suggestions. Of these suggestions in the interest of safety 11,285 received favorable action—4,158 of the suggestions were sent in by mail by employes.

The papers prepared by employes and read at these meetings numbered 460.

Safety bureau representatives talked with 24,123 men in the twelve months about improved methods and practices.

What was the result of these activities?

The total number of employes, trespassers, and others killed in shops, on tracks, at stations, on crossings, etc., was brought down from 423 in 1913 to 170 in 1924! This in spite of the tremendous increase in automobile travel.

It is also worth noting that not a passenger was killed in a train accident in the last five years, although in that period this railroad has handled about seventy million passengers an average distance of sixty miles each.

FIVE HUNDRED CHIROPRACTORS LICENSED

The state board of examiners granted 500 licenses to chiropractors in various parts of the state following the issue of an order, January 17, in the San Francisco County Court, modifying an injunction granted months ago on application of one Joseph Sanford. Four hundred of these new licenses were involved in the injunction proceedings, the remainder having been held up by the board until questions of authority had been decided. Hundreds of applications are still pending before the board. These are the first licenses to be granted without protest, excluding reciprocity licenses, since the present board was appointed, in February, 1923.

PARAFFINOMA OF THE VAS DEFERENS

The author reports an unusual complication following the paraffin injection of an inguinal hernia by a charlatan. The hernia promptly recurred and the cord and testicle on the side treated became swollen, painful and tender on pressure. At operation paraffin masses were removed from the internal oblique muscle, the conjoined tendon, and the vas deferens. The vas was occluded and it was necessary to resect it anastamose the ends.

Because of the high percentage of recurrence following operations for "paraffin hernia" the regular Bassini operation was combined with the author's method of lateral displacement of the cord. With the cord displaced on to the internal oblique, one-half inch to the inner side of the deep suture line, the overlappd fascial flaps were securely stitched to the deep suture line to reenforce the weak spots, the usual points of recurrence—the internal ring, the lower end of the incision over the pubic bone, and the line of deep sutures.

The serious accidents that sometimes follow paraffin injections of hernia are: gangrene of the skin; injection of cord structures; wounding of intestine, appendix, or bladder with the needle; injection into blood-vessels, followed by pulmonary or cerebral embolism or sudden blindness from plugging of the artery of the retina, and occlusion of the iliac or femoral artery, with gangrene of the extremity necessitating amputation.—Leigh F. Watson: Journal of the American Medical Association, 1924, lxxxii, June 14, p. 1935-1936.

SOCIETY PROCEEDINGS

Cass County Medical Society

The Cass County Medical Society met in session at the Masonic Parlor, Atlantic, Iowa, Wednesday, April 15, at 1:30 p. m. There were sixteen doctors present, as follows: Drs. C. L. Campbell, Greenleaf, Barnett, Montgomery, R. A. Becker, Clark, Johnson, C. V. Wilder, Atlantic; Dr. Jas. Maynard, Acton; Dr. Chester A. Mills, Massena; Dr. Stults, Wiota; Dr. H. B. Jennings, Council Bluffs, councilor of ninth district; Dr. Aldis A. Johnson, Council Bluffs; Dr. Campbell, Anita; Dr. Weaver and Dr. Anderson, Cumberland; Mr. C. G. Throckmorton, Des Moines, business assistant to his brother; Miss Compton, laboratory technician, Atlantic Hospital, and Miss Azeltine, a nurse of the Atlantic hospital.

After the preliminary opening of the society, the Gorgas Memorial was taken up and tabled. The Maternal Welfare communication was passed by. The communication from the Pottawattamie County Medical Society received last December and which was laid over until this meeting, recommending that the different county medical societies of Southwestern Iowa meet and organize a new society, was tabled. The matter of taking up subscriptions for the new journal "Hygeia" was passed by. On motion, Dr. C. L. Campbell of Atlantic, Drs. Weaver and Anderson of Cumberland, and Drs. Perequite and Miller of Massena, were made a committee to approach the Adair County Medical Society, with the view of having that society unite with the Cass County Medical Society, forming a Cass-Adair County Medical Society.

The following program was then taken up.

A discussion of Some Valuable Laboratory Methods, with Report of Cases.—Aldis A. Johnson, M.D., Council Bluffs. Anesthetics.—C. V. Wilder, M.D., Atlantic. These were valuable papers and generally discussed.

Dr. H. B. Jennings of Council Bluffs, councilor, was then called to the floor, who spoke of his duties to the state and county societies. It was a splendid talk and well received.

Mr. C. G. Throckmorton of Des Moines, was then given the floor and spoke very interestingly upon the business side of the society.

After these last talks, Treatment of Deafness by Ultra Violet Rays and Tonsillectomy, were discussed.

Dr. R. A. Becker, President,
Dr. M. S. Stults, Secretary.

Fayette County Medical Society

The April meeting of the Fayette County Medical Society was held at Fayette where we were the guests of Drs. Parker and McClain, to a 6:30 p. m. dinner. Program: Pathogenesis of Accessory Nasal Sinus Disease.—Dr. Novak of New Hampton. Intestinal Obstruction.—J. E. Brinkman, M.D.

C. C. Hall, Sec'y.

Henry County Medical Society

The Henry County Medical Society held an invitation meeting at the Masonic Hall, Mt. Pleasant, on April 29, 1925. Physicians of Lee, Des Moines, Louisa, Washington, Jefferson, Wapello and Van Buren counties were invited. About sixty-five medical men were present.

The following interesting program was given:

1. Tuberculosis Clinic by Dr. C. O. Giese, Colorado Springs, Colorado.
2. The Relation of the Accessory Nasal Sinuses to Diseases of the Chest. Differential Diagnosis and Treatment.—Dr. W. V. Mullin, Dr. Chas. O. Giese of Colorado Springs, Colorado.
3. Scarlet Fever, the Dick Test, Immunization and Treatment.—Dr. O. B. Nesbit, Gary, Indiana.
4. Dr. Nesbit will read a number of Dick Tests made the day before.
5. Recent Observation on Benign Diseases of the Stomach and Duodenum.—Dr. C. McVicar, from Internists standpoint; Dr. Donald E. Balfour, from Surgeon's standpoint.

The Order of the Eastern Star served the banquet at 6:30 p. m., which was very much enjoyed.

E. A. Stewart, Sec'y.

Mills County Medical Society

The last meeting was held at the Institution for Feeble-minded at Glenwood, the meeting being preceded by a luncheon given by Dr. Geo. Mogridge. Members present were: Doctors G. V. Coughlin, president, Glenwood; G. D. Tipton, secretary, Henderson; M. S. Campbell, Malvern; T. B. Lacey, Glenwood; J. A. Edwards, Glenwood; Geo. Mogridge, Glenwood; G. M. Agan, Glenwood; Edgar Christy, Hastings.

The meeting was addressed by Dr. H. B. Jennings of Council Bluffs, as district councilor of the State Society.

The meeting was also addressed by Mr. C. G. Throckmorton of Des Moines, executive secretary of the State Society, relative to the business and policies of the State Society.

Reports by Drs. Edwards and Lacey of institution staff, of the recent epidemic of scarlet fever in the institution. The report comprised some 200 cases, also there were forty-nine cases tested by the Dick method. Of thirty-two Dick positive cases, fourteen subsequently developed scarlet fever. Of fourteen Dick negative cases none have developed scarlet fever. About six weeks has elapsed and the epidemic seems to be at an end.

Discussion by Dr. Mogridge of the epidemic as to probable source (employee), progress and peculiarities of appearance in isolated wards, etc.

Moved and motion adopted that the Mills County Medical Society hold a meeting every two months this year, the next meeting to be held the first Thursday in June, papers, program and place of meeting to be arranged by the president and secretary.

Motion adopted to extend a vote of thanks in behalf of the society, to Dr. Jennings and Mr. Throckmorton for their efforts in meeting with us and addressing us during the meeting.

G. D. Tipton, Sec'y.

Polk County Medical Society

The Polk County Medical Society met for its regular monthly meeting in the Oak Room of the Fort Des Moines Hotel, March 31, 1925. The meeting was called to order by the vice-president, Dr. Robert L. Parker, at 7:45 p. m.

The minutes of the February meeting were read and approved.

Dr. J. S. Weingart presented a case of Chronic Purpura Hemmorrhagica, in a girl nine years old, who has had splenectomy with a subsequent cure of the disease.

Program

Surgical Drainage of the Peritoneal Cavity, H. D. Gray, M.D.; Surgical Drainage of the Pleural Cavity, F. W. Fordyce, M.D.; Surgical Drainage of Bones, W. J. Fenton, M.D.; Surgical Drainage of the Urinary Tract, C. W. Losh, M.D.

Mr. McAbree of the Northwestern Bell Telephone Company talked on the ruling of the telephone company which is to omit the doctors' residence phone numbers from the classified listing in the back part of the directory. A pithy discussion between various members and Mr. McAbree followed.

The following bills were presented and allowed: Iowa Printing & Supply Co., $13; Des Moines Duplicating Co., $3.20; Des Moines Photo Material Co., $31; L. K. Meredith (commission), $56; Iowa State Medical Society, $120.

The secretary presented the application of Dr. J. B. Synhorst for membership, which application had been favorably acted upon by the board of censors. Dr. Baker moved that the rules be suspended and that the secretary be instructed to cast an unanimous vote for Dr. Synhorst. Duly seconded and unanimously carried. Sixty-seven members and four visitors were present at the meeting.

L. K. Meredith, Sec'y-Treas.

Northwest Iowa Medical Society

The regular spring meeting of the Northwest Iowa Medical Society will be held at Sheldon, Iowa, Thursday, April 30. This will be a social gathering as well as a scientific meeting, and we invite and expect our members and guests to bring the ladies. Come prepared to spend the afternoon at the Country Club, and do not forget to bring your golf clubs, as the Sheldon Golf and Country Club has issued us a very cordial invitation to spend an afternoon on the links.

The banquet for the physicians and their wives will be held at the Hotel Arlington at 7:00 p. m., following which the regular business meeting and program will be held.

The ladies, during the meeting and program, will be entertained at the Lyric Theatre, the management of which has promised a special feature production, The Spaniard.

Banquet tickets will be $1.50 per plate, and it is absolutely necessary that checks be mailed to the secretary before Wednesday, April 29.

J. W. Myers.

Southwestern Iowa Medical Society

The Southwestern Iowa Medical Society met in the Greater Community Hospital at Creston, Iowa, on Thursday, April 9, 1925, at 1:00 p. m. Dr. L. Lamb of Lorimor, presiding.

Dr. Aldis A. Johnson of Council Bluffs read a paper on The Evaluation of some Laboratory Methods. He stressed the correlation of clinical and laboratory findings.

Dr. Merril M. Myers of Des Moines gave a talk on Diagnostic Problems in Heart Disease, using a lantern in order to bring the subject more clearly before the physicians. He also presented a case of rheumatic heart disease in a boy eighteen years old, in order to show the application of diagnostic methods.

Dr. Werndorff of Council Bluffs then read a paper on Diagnosis and Treatment of Simple Fractures, emphasizing the diagnostic side. He was asked many questions by the physicians present as to treatment in certain specific cases.

Due to the illness of Dr. F. H. Falls of Iowa City, his assistant Dr. G. R. Rotton gave a paper on Management of Breech Presentation. At the close of his paper he showed some moving pictures of breech presentation and maneuvers necessary in their management.

Due to the very bad weather and roads the attendance was rather small.

Next meeting will be held in Osceola, Iowa, date to be announced. J. C. Parsons, Sec'y.

COMING MEETINGS

Preliminary announcement of an Epochal Iowa Medical Assembly of Midwestern medical leaders in a diagnostic clinic under the auspices Twin Lakes District Medical Society, to be held at Brownlee's Pavilion, Twin Lakes, Rockwell City, July 16, 1925.

Light on practitioners' problems—Internal Medicine, Diseases of the Skin, The Eye; Gynecology, Laryngology, Pediatrics. Basket dinner at noon (family style) on the beautiful Country Club grounds at South Lake. Bathing, boating, golf, (for the ladies). Solid instruction by prominent teachers for the physicians themselves. Evening dance in the big Brownlee Pavilion ("Dreamland") with famous orchestra.

ADDITIONAL PRIVILEGES EXTENDED TO THE MEDICAL PROFESSION

We are printing this notice as another evidence of the personal regard felt for the medical profession. What will come next in the way of encouragement we cannot predict, only that the medical profession will continue to be regarded as a helpless class without ability to care for its interests.—Editor.

IOWA STATE DEPARTMENT OF HEALTH

Des Moines, May 1, 1925.

To M.D.'s.

Dear Doctor:—

Every person licensed to practice medicine and surgery; podiatry; osteopathy and osteopathy and surgery; chiropractic; nursing; dentistry and dental hygiene; optometry; pharmacy; embalming; shall renew their license annually.

For your convenience you will find herewith the law requiring same, as follows:

From 1924 code—Section 2447. Renewal of licenses. Every license to practice a profession shall expire on the thirtieth day of June following the date of issuance of such license, and shall be renewed annually upon application by the licensee, without examination. Application for such renewal shall be made in writing to the department accompanied by the legal fee at least thirty days prior to the expiration of such license. Every renewal shall be displayed in connection with the original license. Every year the department shall notify each licensee by mail of the expiration of his license.

Enclosed find application blank to fill out. Upon receipt of this application and renewal fee of $1, your renewal card and receipt for remittance will be sent to you.

Please give your post-office address as you desire the same to appear on our records at the present time.

Very respectfully,

RODNEY P. FAGEN, M.D.,

Commissioner.

MEDICAL NEWS NOTES

The Missouri state board of health issued citations to Dr. Waldo Briggs, dean of the St. Louis College of Physicians and Surgeons, and forty-five other physicians in Missouri and elsewhere, to appear before the board at St. Louis March 9 and show cause why their licenses to practice medicine should not be revoked.

Dr. Emmett P. North, president, said the board had completed an exhaustive examination of the professional records of the physicians cited and has decided to place them on trial.

The board also asked a St. Louis grand jury to investigate charges of fraud in obtaining medical diplomas and licenses.

"Missouri is now taking final and decisive action in the long fight against the operations of the nation-wide diploma mill ring", said Dr. North.—Muscatine Journal.

The board of supervisors renewed the contract with the Webster County Medical Association whereby physicians in Fort Dodge furnish free medical attention to patients who are unable to pay. The contract with the medical association calls for the payment of $2,750 annually by the county for the medical service furnished by the physicians.

The Fort Dodge physicians attend to poor patients in Fort Dodge, Cooper township and those at the county home, west of the city.

Other physicians who were appointed by the board to take care of poor patients and the amounts they were awarded for the year are: Dr. H. E. Nelson, Dayton, $350, Dayton, Burnside, Yell and Hardin townships; Dr. A. W. Lundwick, Gowrie, $180, Lost Grove, Gowrie, Roland and Clay townships.

The Wyoming board of medical examiners has adopted a resolution that it will recognize as applicants for license only graduates of class A medical colleges.

The St. Louis Medical Society is preparing to build a medical library. The library has increased from 16,497 volumes to 23,772 volumes since 1817.

Dr. W. W. Keen, emeritus, professor of the principles of surgery and of clinical surgery, Jefferson Medical College, celebrated his eighty-eighth birth-

day January 19. Dr. Keen has practiced medicine and surgery for sixty-five years.

Dr. Van W. Schulte, dean of the school of medicine Creighton University, Omaha, addressed the Sioux City Professional Men's Club recently on the "Social Responsibilities of the Physician".

HOSPITAL NOTES

The first anniversary of Broadlawns, the Polk County Tuberculosis Hospital, was observed April 13. The new wing in process of construction will furnish forty more beds. Most of the rooms will be furnished by persons interested in hospital work, in memory of deceased members of the family or friends.

Congress authorized an appropriation of $2,000,000 for the construction of permanent buildings at Walter Reed Hospital to replace the temporary buildings of the great army hospital at Washington.

PERSONAL MENTION

Dr. E. W. Slater of Jewell, will move to Webster City for the practice of medicine. He practiced at Ellsworth for four years and at Jewell sixteen years.

Dr. Geo. H. Scanlon has been appointed city health physician for Iowa City to succeed Dr. T. L. Hazard.

Dr. E. O. Ficke has been re-appointed city health physician for Davenport.

It is reported that Dr. Austin Philpott of Ft. Madison, on a trip around the world, has been taken seriously ill and is confined in a hospital in Ceylon.

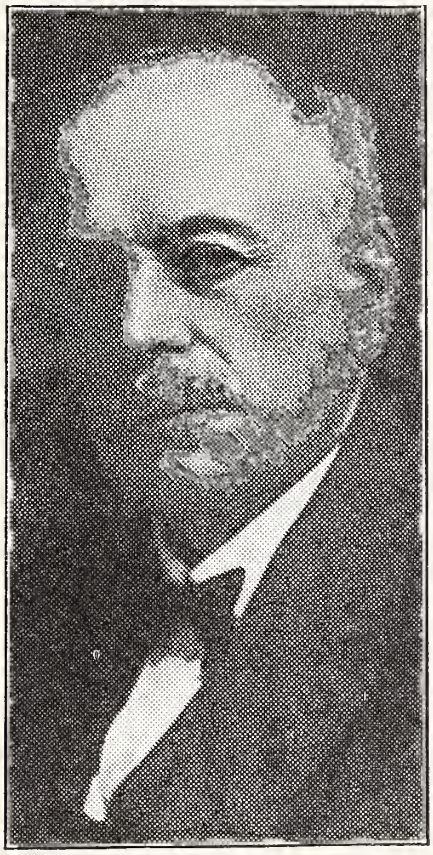
Dr. A. L. Bryan has been appointed to succeed Dr. E. B. Fullium, Jr., as city health physician for Muscatine.

Dr. and Mrs. D. W. McCrary will sail from New York City for Edinburgh, Scotland where the doctor will take post-graduate work. During the summer they will join in the Inter-state Medical Association tour of Europe.

Lieut.-Col. James W. Osborn, former chief of the surgical staff of General Hospital No. 60, Iowa Methodist Hospital, has been named by the war department to succeed the late Col. Charles F. Smith as commander of the organization, which is a branch of the United States reserves. The new commander was secretary of the Iowa State Medical Society for several years and has been practicing since 1888. He has been a resident of Des Moines the major portion of the time since his parents moved here from Ohio in 1867. Dr. Osborn was in service during the World War and has been on the staff of the local hospital units since its organization. The staff is sufficient to man a 1,000-bed hospital.—Des Moines Capital.

OBITUARY

Dr. A. B. Bowen of Maquoketa, died at his home April 16, 1925, at the age of eighty-three years. He was born in Eastford, Connecticut, April 12, 1842. His ancestors came to Plymouth Colony in the Mayflower. In 1861 while attending Mexico Academy at Oswego, New York, Dr. Bowen enlisted in the United States Navy and was assigned to the flagship



DR. A. B. BOWEN

Neptune, which did duty in the West Indies convoy service. He was honorably discharged at the Brooklyn Navy Yard in June, 1865.

Dr. Bowen began the study of medicine and graduated from the Albany Medical College in the class of 1868, on the 22nd day of December. In seeking a location in which to practice his profession, he came to Maquoketa and entered into partnership with an older doctor who soon after died, leaving the field to Dr. Bowen, who cultivated it with energy and success.

In 1872 he became a member of the Iowa State Medical Society and a few years later a member of the American Medical Association. Dr. Bowen was appointed surgeon for the Chicago & Northwestern Railroad Company at Maquoketa soon after he began practice and continued in this position to the time of his death. When the C. & N. W. Ry. Co. organized its system surgical association, he became a member and at one time served at its president. He was also an active member of the American Association of Railway Surgeons.

In 1874 he married Miss Minnie Clark. Two children were born, Dr. Jesse C. Bowen, who succeeds him in the practice of medicine at Maquoketa, and a daughter Mrs. Frances Bowen Myatt, who, with Mrs. Bowen, survive him.

The writer, who graduated in the same class, came to Olmstead county, Minnesota, the same year that Dr. Bowen came to Iowa and in 1872 they came together, the one at Ames and the other at Maquoketa, and renewed the friendship which began at the Albany Medical School and continued to the day of Dr. Bowen's death. Forty years from the date of graduation the two old men returned to their Alma Mater on the occasion of a class meeting and found two others. Ten years we were alone.

In 1919 on the occasion of the fiftieth anniversary of Dr. Bowen's practice in Maquoketa, the Jackson County Medical Society, together with old-time friends, gathered to express their appreciation of his services, and to show the high honor in which he was held.

Dr. Bowen was a real family doctor of the old school, a type of medical practitioner of which there are but few remaining. He was a resourceful man, equipped to meet any emergency. He knew how to use every form of powder, pill or capsule with skill and discrimination. He had diagnosed every type of fever before the fever thermometer came into use. He had used morphine before the days of the hypodermic syringe and he had reached a high degree of diagnostic skill before the days of the laboratory and the introduction of instruments of precision, purely through the cultivation of the faculties of observation and the exercise of a cultivated brain. Dr. Bowen did not limit himself all his life to such old fashioned methods, but availed himself of newer methods as they came into use, and he also had the advantages of a background of intellectual processes which enabled him to evaluate the new methods justly.

Dr. Bowen could treat a case of typhoid fever or measles. He could operate for hernia, for appendicitis, ovarian tumor, fibroid uterus, or do a gastroenterostomy. He had attended more than 1400 obstetrical cases and treated more than 150 fractures, all this without hospital facilities. This was in a country environment. It was not necessary for Dr. Bowen to have a laboratory or x-ray diagnosis before he knew what to do; his service was a welfare service. He did not disparage refinements in diagnosis, but his first thought was to discover what ailed his patient and to proceed at once to furnish relief.

We have recorded in recent years the passing of men of his type, who enjoyed the respect, confidence and affections of their people, men whose loss was a real loss. We appreciate the fact that a change has come over the people and over the profession, but it is probable the change will not last in present state; it seems that the family doctor, with the new equipment, the greater facilities for diagnosis and improved methods of transportation will bring him back with greater influence and usefulness.

Mrs. Hannah Young, wife of Dr. H. B. Young, died at her home in Burlington April 27, 1925, at the age of seventy-one years, of heart disease. She had just returned from a visit to California; her death was quite sudden.

Dr. H. B. Young is one of the oldest members of the Iowa profession and was at one time president of the Iowa State Medical Society. Dr. Young is one of our most distinguished practitioners in diseases of the ear, eye, nose and throat. The profession of the state and a large group of friends will join in expressions of sympathy for Dr. Young in his bereavement.

Dr. William H. Smith died at his home in Shell Rock, March 25, 1925. He was born in Sheboygan county, Wisconsin, February 25, 1857. Dr. Smith received his preliminary education at the Wayland University at Beaver Dam, Wisconsin, where he finished his course in 1871 and graduated from the Chicago Medical College (Northwestern) in 1878. After practicing in Sheboygan, Wisconsin, for a short time, he moved to Shell Rock, where he practiced until a few months prior to his death. For the past thirty years he was local and consulting surgeon for the C. R. I. & P. Railway Company.

Dr. Smith was married in May, 1878, to Ella A. Mansfield of Greenbush, Wisconsin, who survives him. To them was born one daughter, who died February 26, 1906.

Dr. A. J. Weeks died at his home in Sioux City, April 6, 1925.

Dr. Weeks was born in Wyoming county, New York, October 6, 1845. When a boy he moved with his parents to Michigan. At the outbreak of the Civil War he enlisted in Company H, Herrill's Michigan Horse Battalion. He saw much service and was mustered out September 19, 1865. He then began the study of medicine at Battle Creek, Michigan, and graduated from the medical department of the University of Michigan. After practicing at Battle Creek for several years, he moved to Correctionville, Iowa, where he remained until 1911, when he moved to Sioux City. He was postmaster at Correctionville for twelve years. At the time of his death he was district court bailiff. He held many public offices and had been active in G. A. R. affairs.

Dr. G. W. Watts died at his home in Chicago, March 26, 1925, of pneumonia.

Dr. Watts was born in Milton, Wisconsin, July 16, 1896, and came to Clear Lake with his parents in 1875; received his education at the high schools of Clear Lake and Mason City. In 1890 he entered the Northwestern University as a student in medicine and graduated in 1894. After taking post-graduate and hospital intern work, he returned to Chicago, where he practiced up to the date of his fatal illness.

Harry W. Sigworth, Jr., was born at Anamosa, Iowa, May 28, 1878, the son of Dr. H. W. and Phebe Bowen Sigworth; died April 5, 1925. He attended the schools of his native town and graduated from the high school in the class of 1894. After attending the Iowa State University he took a course at Rush Medical College, Chicago, where he was graduated in 1899. Following his graduation he took up the practice of medicine at Anamosa.

On January 7, 1903, Dr. Sigworth was married to Miss Daisy Hileman, daughter of Mr. and Mrs. Joseph M. Hileman, Waterloo. For a time they resided in Anamosa. In 1907 they moved to Waterloo and Dr. Sigworth continued the practice of his profession here. One son, Robert, born in 1908, died in infancy.

Dr. Sigworth was a member of American Medical Association, was a member of the Illinois Central railway medical staff, Masonic lodge, Knights Templar and Shriners, and a member of Bunker Hill Chapter Sons of American Revolution.

Surviving relatives, besides the widow, are two brothers, Debird Sigworth, Cedar Rapids, and Dr. F. B. Sigworth, Anamosa; a sister, Mrs. John A. Hull, Boone, Iowa; three nephews, Dr. Dwight C. Sigworth, Waterloo, John A. and Dwight S. Hull, Boone, and a niece, Thirza Hull, Boone.

The death of Professor August von Wassermann on March 16, 1925, has deprived the medical world of one of its ablest investigators and the human race of a benefactor. Through his continued studies he has made several lasting contributions to the body of knowledge basic to general race betterment.

Wassermann was born February 21, 1866, at Bamberg, Bavaria. His father was a royal banker who gave his son the opportunity to gain a sound general and professional education. Wassermann studied medicine at the universities of Erlangen, Munich, Vienna and Strassburg, receiving his degree from the last named institution in 1888. He then became assistant for infectious diseases at the Koch Institute of the Charite at Berlin, gaining the title of professor in 1898. In 1901 Wassermann was given an appointment to the University of Berlin as Professor Extra-Ordinary (Privatdozent), a position carrying with it no emoluments outside of the opportunity to teach and experiment in the university medical school and its laboratories. Within a year his unselfish devotion and keen interest in the science of medicine brought him a full professorship. In 1906 he assumed the duties as head of the Division for Experimental Therapy and Serum Research at the Royal Institute for Infectious Diseases at Berlin. In 1913 he added to his duties those of director of the newly founded Kaiser Wilhelm Institute at Dahlem, near Berlin, an institute for experimental therapeutics.

As a mark of appreciation of beneficial public service the title of Secret Councillor (Geheimrat) was conferred upon Wassermann in 1907; he was also awarded the Japanese Order of the Holy Treasury, the Turkish Order of Ozman, the Spanish Order of Elizabeth the Catholic, and the Reichs Adler Order.

Professor Wassermann was a prolific contributor to medical literature. As an introduction to Ebstein and Schwalbe's Handbook of Practical Medicine he has written an able discussion concerning general studies on infectious diseases, especially influenza. He was also a regular contributor to the Eulenburg Encyclopedia, writing on immunity and serum therapy. He published many articles on newer subjects, such as hemolysin and precipitin. His best known works are contained in the Handbook of Pathological Microorganisms, which he published in collaboration with Kolle.

Wassermann made a far-reaching and important contribution to forensic medicine by "his precipitin reaction which distinguishes the blood of men and animals by differentiating albumin bodies contained therein".

His greatest discovery, the complement fixation test in syphilis, was announced in 1906. This, the so-called "Wassermann Test", is an application to syphilis of a general reaction discovered by Bordet and Gengou.

An appreciation of the vast importance of the use of the Wassermann test as an aid in the diagnosis and treatment of syphilis may be gleaned from data collected and compiled by the Division of Venereal Diseases of the United States Public Health Service. The 165 laboratories of state health departments and state institutions, scattered throughout every state in the Union included in this investigation, administered 990,130 Wassermann tests in 1923. This figure, when reduced to more evident terms, means that these 165 state laboratories have given one Wassermann test per every 106 people in the United States. The importance of the Wassermann test is further enhanced by the fact that these figures do not include many Wassermann tests made by private laboratories.

Though Wassermann's name has been connected with important researches dealing with the problems of cancer and tuberculosis, he has enshrined his name in medical annals by virtue of his work in the diagnosis and treatment of syphilis. Wassermann, a distinguished pupil of Koch and Ehrlich, has earned the name of a great benefactor of humanity.

David Combs English, New Brunswick, New Jersey; medical department of Columbia College, New York, 1868; president of the Medical Society State of New Jersey, 1897-1898 and editor of its journal since 1905; past president and for many years treasurer of the Middlesex County Medical Society; delegate to the Pan-American Medical Congress; on the staff of the Wells Memorial Hospital, now the Middlesex General Hospital; aged eighty-two; died, September 18, 1924, of injuries received while on a trip in Maine.

BOOK REVIEWS

HUMAN CONSTITUTION

A Consideration of Its Relationship to Disease, by George Draper, M.D., Associate in Medicine at Columbia University, New York City; Octavo of 345 Pages, with 208 Illustrations and 105 Tables. W. B. Saunders Company, 1924. Cloth, $7.50, Net.

In the preface it is stated that: "The present volume which deals chiefly with a method for studying the morphology of human beings, is the first of a series planned to consider the whole subject of human constitution."

Under the head of General Considerations, it is stated: "Disease arises from the interplay of dynamic forces inherent in the individual and present in the world about him. It is a subtly moving, changing set of reactions between man and his environment, which causes him discomfort, or, exactly what the word says, dis-ease."

This presents an introduction to a philosophical discussion of the human constitution.. Passing on to chapter two, we have presented the anatomic panel, or morphology in which is developed a technic of mensuration somewhat complicated, illustrated by numerous charts showing lines and curves. These mensuration discussions include a considerable portion of the book.

Passing to chapter seven, comes the recognized differences in disease suseptibility between the sexes, as in gall-bladder disease and ulcer of the stomach and duodenum, which have often been explained on the basis of exposure, but on the basis of measurement as explained by the author, more definitely a constitutional one, an individual potentiality. There are possibilities in working out helpful constitutional relationship of disease.

ABT'S PEDIATRICS

By 150 Specialists; Edited by Isaac Abt, M.D., Professor of Diseases of Children, Northwestern University Medical School, Chicago. Set Complete in Eight Octavo Volumes Totaling 8000 Pages, with 1500 Illustrations, and Separate Index Volume Free.; Volume IV, 1271 Pages, 271 Illustrations. W. B. Saunders Company, 1924; Cloth, $10.00 Per Volume. Sold by Subscription.

Of this exhaustive work on diseases of children, three volumes have been reviewed, and volume four is now before us. This volume treats of several subjects. Diseases of the Respiratory System, The Circulatory System, The Blood, The Endocrines and Diseases of Urinary System. The section on the Pleura and Lungs is prepared by Henry Heiman, M.D., of New York City. Tumors and Cysts of the Lungs, by Oscar T. Schultz, M.D., of Chicago. Surgery of the Thorax, by Ewart A. Graham, M.D. Mediastinal Tumors, by Clifford G. Grulee, M.D., of Chicago.

As introductory to the section on Diseases of the Circulatory System, Dr. Carl John Wiggers presents a chapter on the Physiology of the Circulation. The Physical Examination of the Heart in Normal Children, by Max Seham, M.D. of Minneapolis. The same author prepared the chapter on Congenital Heart Malformations, also on Electrocardiography in Children. Acquired Diseases of the Heart, by Murray H. Bass, M.D., of New York City, also Diseases of the Blood Vessels.

The section of Diseases of the Blood is introduced by a chapter on The Physiology of the Blood, by Drs. William Palmer Lucas and E. C. Fleischner of San Francisco and also the chapters on The General Treatment of Anemias.

We have included some of the names of the distinguished authors who have contributed chapters to this great work. The contributions not mentioned are equally known in this field of medicine.

MANUAL OF THE DISEASES OF THE EYE

By Charles H. May, M.D., Director and Visiting Surgeon, Eye Service, Bellevue Hospital, New York; Consulting Ophthalmologist to the Mt. Sinai Hospital, to the French Hospital, to the Italian Hospital, New York, and to the Monmouth Memorial Hospital; Formerly Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons, Medical Department, Columbia University, New York. Eleventh Edition, Revised. William Wood and Company, New York.

The author states that he has endeavored to present a concise, practical, and systematic manual, intended for the student and general practitioner. The great difficulty in preparing a book of this kind is to say enough, but not too much. Rare conditions have been merely mentioned. Uncommon affections, of interest chiefly to the oculist, have been dismissed with a few lines, and common conditions, which the general practitioner is most frequently called upon to treat, have been described with comparative fullness. The new edition is carefully revised. Newer methods of treatment are substituted for older, when in the judgment of the author they are better. The publishers state that more than 150,000 copies have been published and that translated editions have been issued in French, German, Italian, Spanish, Dutch, Japanese and Chinese. They believe it is the most largely sold medical book in the world. Each chapter begins with the anatomy and physiology, and this is followed by a discussion of the common affections of that particular part of the eye. The numerous, original illustrations, of which there are 374, are scattered throughout the book in juxtaposition with the description of the subject. There are twenty-three plates with seventy-three colored figures. These picture the various normal and diseased conditions of the eye. All the illustrations are

excellent. It is seldom that a book of this size contains so many. The book contains twenty-seven chapters dealing with the following subjects: Examination, Eye Lids, Orbit, Conjunctiva, Cornea, Sclera, Iris, Ciliary Body, Choroid, Ophthalmitis, Tumors, Glaucoma, Vitreous, Lens, Retina, Amblyopia, Optical Principles, Errors of Refraction and Accommodations, Motility of the Eye, Therapeutics, Occular Manifestations of General Diseases. There are a number of very good prescriptions. The book is an excellent one, and every student and practitioner of medicine should have a copy.

Dr. E. P. Weih.

A LABORATORY GUIDE IN HISTOLOGY

By Lester B. Arey, Ph.D., Professor of Anatomy in the Northwestern University Medical School, Chicago. Second Edition, Revised, 12 Mo. of 96 Pages. W. B. Saunders Company, 1924. Cloth, $1.25, Net.

This book, as the title indicates, is a guide to the student in preparing tissue for histological examination.

After a chapter devoted to tissue preparation, special organs are taken up, The Lymph Glands and Nodes, The Ductless Glands. Serous and Mucus Membranes and Glands. The Digestive System, The Respiratory System, The Urinary System, The Reproduction System and The Integumentary System. In a brief manner the student is advised as to the best way of preparing the various systems for examination and study.

Funk & Wagnall's Company, publishers of the Literary Digest, have published four units of a National Health Series, edited by the National Health Council and written by leading health authorities, as will be seen by reference to the titles and authors presented at this time. These volumes full Fabrikoid, price per volume, 30 cents.

CANCER

Nature, Diagnosis, and Cure. By Francis Carter Wood, M.D., Director, Institute for Cancer Research, Columbia University.

MAN AND THE MICROBE

How Communicable Diseases Are Controlled. By C. E. A. Winslow, Dr. P. H.; Professor of Public Health, Yale School of Medicine.

COMMUNITY HEALTH

How to Obtain and Preserve it. By D. B. Armstrong, M.D., Sc.D., Executive Officer of National Health Council.

THE BABY'S HEALTH

By Richard A. Bolt, M.D., Gr.P.H., Director, Medical Service, American Child Health Association.

PERSONAL HYGIENE

The Rules for Right Living. By Allen J. McLaughlin, M.D., Surgeon United States Public Health Service.

These comprise the initial unit of five volumes of the twenty-volume National Health Series, edited by the National Health Council, written by the leading health authorities of the country, and published by the Funk & Wagnalls Co. The other fifteen volumes will be published in units of five titles, the series to be completed by May 1, 1924.

We are presenting a second Health Series published by Funk & Wagnalls Company, 354-360 Fourth avenue, New York. These books are sold at a very moderate price of 30 cents each. The series of six volumes which are now presented, bear the following titles, with the names of the authors.

ADOLESCENCE: EDUCATIONAL AND HYGIENIC PROBLEMS

By Maurice A. Bigelow, Ph.D. Price 30 Cents, Net.

EXERCISES FOR HEALTH

By Lenna L. Meanes, M.D. Price 30 Cents, Net.

THE CHILD IN SCHOOL: CARE OF ITS HEALTH

By Thomas D. Wood, M.D. Price 30 Cents, Net.

THE HEALTH OF THE WORKER: HOW TO SAFEGUARD IT

By Lee K. Frankel, Ph.D. Price 30 Cents, Net.

HOME CARE OF THE SICK

By Clara D. Noyes, R.N. Price 30 Cents, Net.

YOUR MIND AND YOU: MENTAL HEALTH

By George K. Pratt, M.D. Price 30 Cents, Net.

ESSENTIALS OF PRESCRIPTION WRITING

By Cary Eggleston, M.D., Assistant Professor of Pharmacology, Cornell University Medical College, New York City. Third Edition, Revised; 32 Mo. of 146 Pages. W. B. Saunders Company, 1924. Cloth, $1.50, Net.

The purpose of this book is to draw the attention of the medical student and the recent graduate to some kind of orderly prescription writing, which will enable him to express in a proper formula the medicine which he desires to use, in a form to be understood by the druggist.

It is the custom to write the prescription in Latin terms and to facilitate this a chapter on Latin gram-

mar is presented, a chapter on Weights and Measures, a chapter on Practical Writing of Prescriptions, a chapter on Doses of Drugs, on Vehicles, on Incompatibility, on Modes of Administration of Medicinal Agents, and on Official Preparations.

The physician who writes prescriptions will find this a useful manual, much better and more satisfactory than prescribing proprietary medicines.

DISEASES OF THE HEART

By Dr. Henri Vaquez, Professor of the Faculty of Medicine of Paris; Translated and Edited by George F. Laidlaw, M.D., Associate Physician to the Fifth Avenue Hospital, New York City. Introduction by William S. Thayer, M.D., Johns-Hopkins Hospital, Baltimore, Md.; Octavo Volume of 743 Pages; Illustrated. W. B. Saunders, 1924. Cloth, $8.50, Net.

This important volume representing the best of French medicine, insofar as relates to diseases of the heart, is now presented to the English reading profession. Professor Thayer in his introduction observes: "These are days of great activity in the study of diseases of the heart and vessels" and refers to the introduction of graphic methods of investigation: The electrocardiogram and the study of the action of drugs belonging to the digitalis group.

The translator informs us that: "This book was written for the general practitioner by the foremost cardiologist of France." On proposing a translation of the French edition, Professor Vaquez stated: "Two years is a long time in the evolution of medical science—some of the chapters are already old; I shall rewrite them. Others require additions to bring them up to date." Therefore it will be seen the American edition brings the subject up to date.

There are many English and American books and numerous special journal articles that present the latest word on diseases of the heart; there are also the traditions of Latin Europe to be considered, particularly the French, who have a facility of expression in clinical observations that invite our attention and admiration.

The introduction by Professor Vaquez presents an historical outline of the development of medicine that relates to the heart and then proceeds to the consideration of the subject, beginning with an outline of the anatomy and physiology of the heart.

Part one: The Methods of Examination, Inspection, Palpation and Percussion, Auscultation, Radiology, Graphic Methods, Electrocardiography and Blood-Pressure.

Part two: The Cardiopathies and Arterial Hypertension.

Part three: The Arrhythmias.

Part four: Heart Failure.

Part five: Treatment, Diet, Physical Agents, Medical Agents. Treatment in Periods of Adaptation; of Heart Failure.

The presentation of the subjects mentioned sufficiently indicate the scope of the work of an author who has reached a high place as an authority of diseases of the heart. The translator has done his work well and is entitled to the highest commendation for bringing this extremely valuable book within reach of the American general practitioner of medicine.

OPERATIVE SURGERY

Covering the Operative Technic Involved in the Operations of General and Special Surgery. By Warren Stone Bickham, M.D., F.A.C.S., Former Surgeon-in-Charge of General Surgery, Manhattan State Hospital, New York; Former Visiting Surgeon to Charity and to Touro Hospitals, New Orleans. In Six Octavo Volumes Totaling Approximately 5400 Pages, with 6378 Illustrations, Mostly Original, and Separate Desk Index Volume. Volume V Containing 880 Pages, with 1118 Illustrations. W. B. Saunders Company, 1924. Cloth, $10 Per Volume. Sold by Subscription Only. Index Volume Free.

The fifth volume of this great work on Operative Surgery treats of the following subjects:

1. Operations Upon the Colo-Recto-Anal Tract.
2. Operations Upon the Kidneys and Suprarenal Bodies.
3. Operations Upon the Ureters.
4. Operations Upon the Bladder.
5. Operations Upon the Male Urethra.
6. Operations Upon the Penis.
7. Operations Upon the Scrotum.
8. Operations Upon the Testicles.
9. Operations Upon the Structures of the Spermatic Cord, Including the Epididymes, The Vasa Deferentia, and the Vessels.

It will be seen that this volume is devoted largely to the genito-urinary organs and tract. We shall not attempt to consider the various subjects treated in detail. It would be quite impossible to do, considering the vast amount of material presented. It is sufficient to say that it represents a vast and surprising amount of patient work, the gathering of a life time, and with the sixth and last volume, a complete library on operative surgery.

FUNDAMENTALS OF HUMAN PHYSIOLOGY

By R. G. Pearce, B.A., M.D., Formerly Director Medical Research Laboratory, Lakeside Hospital, Cleveland, Ohio, and by J. J. R. Macleod, M.B.D.Sc., F.R.S., Professor of Physiology in the University of Toronto, Canada; Third Edition; Price, $3.50. The C. V. Mosby Company, 1924. St. Louis, Mo.

This volume of 349 pages is a most interesting work on the fundamentals of physiology, and is particularly adapted to the use of medical and dental students, and may very profitably be studied in connection with college work and as introductory to the larger works, or as a distinct study in physiology

itself. We find also, that it will supply the important needs of the medical practitioner. We have briefly presented the most important fundamental facts in physiology offered in concise language by men of the highest authority in physiology.

PATHOGENIC MICROORGANISMS

A Practical Manual for Students, Physicians and Health Officers. By William Hallock Park, M.D., Professor of Bacteriology and Hygiene, University and Bellevue Hospital Medical College; Director of Bureau of Laboratories of the Department of Health, New York City. Anna Wessells Williams, M.D., Assistant Director of Bureau of Laboratories of the Department of Health, and Charles Krumviede, M.D., Also Assistant in above Laboratories. Eighth Edition, Enlarged and Thoroughly Revised, with 211 Engravings and 9 Full-Page Plates. Lea & Febiger, 1924. Price, $6.50.

The book before us is one of great interest and importance, in that it covers a wide range of usefulness and application. It is a book of great importance as a manual for students of medicine. To the practitioner of modern medicine, and particularly to health officers, it is indispensible.

The practitioner of medicine who fails to apply laboratory methods of diagnosis is placed to a great disadvantage, and the health physician or health officer cannot perform his whole duty to the community without applying himself to bacteriological study in considering the many problems of his office.

A section of the book is devoted to serum therapy and the preparation of serums. The examination of water and foods also finds a place in this volume. No form of scientific inquiry is omitted in the study of infectious diseases.

MODERN METHODS IN THE DIAGNOSIS AND TREATMENT OF RENAL DISEASE

By Hugh Maclean, M.D., D.Sc., Professor of Medicine, University of London, and Director of Medical Clinic, St. Thomas' Hospital; Honorary Consulting Physician to the Ministry of Pensions; Consulting Chemical Pathologist to St. Thomas' Hospital. Second Edition, Revised and Enlarged, with Four Colored Plates. Lea & Febiger, 1924. Price, $2.50.

The purpose of this book is to present modern methods of study of renal disease. An introductory chapter is offered on the chief functions of the kidney. Chapter one, the Kidney in Disease—Acute Nephritis. Chapter Three, The Significance of Albuminuria and Casts. Chapter four, Blood Examination in Renal Disease. Chapter five, Other Tests for Investigating Renal Functions. Chapter six, The Relation of Nephritis to Blood-Pressure and Cardiovascular Changes. Chapters seven and eight, The Examination of Patients for Renal Efficiency, and the Importance of Ascertaining the State of the Kidneys in Certain Surgical Conditions.

The above chapter-headings indicate the contents of the book and the value it offers to the practicing physician. The importance of competent kidney function has an intimate relation to all health and disease examination which is clearly shown in this volume.

TETANUS NOT HOPELESS

While prevention is, beyond all question, better than cure, and has long been considered the only hope in cases of tetanus, a change is coming over the medical mind in respect to the value of antitoxin after the symptoms of tetanus have made their appearance. No longer regarded as useless, the urge is to make the dose adequate, 10,000 to 20,000 units at least, and in the vein or the spinal cord. Some striking cures have been reported from these large doses, followed up by smaller daily hypodermic injections to maintain the antitoxic effect.

Tetanus Antitoxin, P. D. & Co., is recognized everywhere as a standard product, and is available in doses ranging from 1500 units (for prophylaxis) to 10,000.

Literature on Tetanus Antitoxin and on Chloretone (chlorbutanol), a chemical compound that is given in large doses per rectum to control the muscular spasms of tetanus while the Antitoxin is given for its specific effect, is offered by Parke, Davis & Co., whose advertisement appears elsewhere in this issue.

NEW AND NON-OFFICIAL REMEDIES

In addition to the articles enumerated in our letter of January 31, 1925, the following have been accepted:

Mulford, H. K.:
Tuberculin Intracutaneous (Human Type)—Mulford
Parke, Davis & Co.:
Mercurosal Ampoules
E. R. Squibb & Sons:
Squibb's Liquid Petrolatum with Agar

In addition to the articles enumerated in our letter of February 28, 1925, the following have been accepted:

Abbott Laboratories:
Butesin Picrate Dusting Powder
Eli Lilly and Co.:
Iletin (Insulin-Lilly) U-80, 10 c.c.
H. K. Mulford Co.:
Rabies Vaccine (Phenol Killed)—Mulford
Parke, Davis and Co.:
Desiccated Parathyroid Gland—P. D. and Co.

Cauliflower Protein Extract Diagnostic—P. D. and Co.
Lentil Protein Extract Diagnostic—P. D. and Co.
Friedlander Bacillus Protein Extract Diagnostic—P. D. and Co., Micrococcus Tetragenus Protein Extract
Diagnostic—P. D. and Co., Streptococcus Hemolytic
Protein Extract Diagnostic—P. D. and Co., Streptococcus
Non-Hemolytic Protein Extract Diagnostic—P. D. and Co.
Paratyphoid A Protein Extract Diagnostic—P. D. and Co.
Paratyphoid B Protein Extract Diagnostic—P. D. and Co.
Pine Pollen Protein Extract Diagnostic—P. D. and Co.
Apricot Protein Extract Diagnostic—P. D. and Co.
Yellow Daisy Pollen Protein Diagnostic—P. D. and Co., Ox-Eye Daisy Pollen Protein Diagnostic—P. D. and Co. and Oak Pollen Protein Extracts Diagnostic—P. D. and Co.

E. R. Squibb and Sons:
Insulin—Squibb, 40 Units, 5 c.c.
Bean (Kidney) Allergens—Squibb, Cauliflower Allergens—Squibb, Frog's Legs Allergens—Squibb
Daisy Pollen Allergens—Squibb, Bacillus Acne Allergens—Squibb, Bacillus Friedlander Allergens—Squibb

Swan-Myers Co.:
Timothy Pollen Extract—Swan-Myers.

In addition to the articles enumerated in our letter of March 28, 1925, the following have been accepted:

Cook Laboratories:
Streptococcus Vaccine X Plain.
Acne Vaccine (Cook) Combination X.
Typhoid Vaccine X Plain.
Typhoid Vaccine XX Combined.
Whooping Cough Vaccine (Cook) X Plain.
Staphylococcus Vaccine Combined.

Cutter Laboratories:
Rabies Vaccine (Semple)—Cutter.

Eastman Kodak Company:
Resorcinol Monoacetate.

Hille Laboratories:
Lunosol.
Lunosol Capsules, 6 grains.

Hynson, Westcott and Dunning:
Brom-sulphalein—H. W. D.
Solution Brom-sulphalein—H. W. D.

Eli Lilly and Co.:
Scarlet Fever Streptococcus Antitoxin (Unconcentrated).
Scarlet Fever Streptococcus Antitoxin (Concentrated).

H. K. Mulford Co.:
Ash Tree Pollen Extract—Mulford; Bermuda Grass Pollen Extract—Mulford; Box Elder Pollen Extract—Mulford; Canary Grass Pollen Extract—Mulford; Cocklebur Pollen Extract—Mulford; Corn Pollen Extract—Mulford; Cottonwood Tree Pollen Extract—Mulford; Daisy Pollen Extract—Mulford; Dandelion Pollen Extract—Mulford; Dock Pollen Extract—Mulford; False Ragweed Pollen Extract—Mulford; Goldenrod Pollen Extract—Mulford; Johnson Grass Pollen Extract—Mulford; June Grass Pollen Extract—Mulford; Lamb's Quarters Pollen Extract—Mulford; Maple Pollen Extract—Mulford; Marsh Elder Pollen Extract—Mulford; Mountain Cedar Pollen Extract—Mulford; Mugwort Pollen Extract—Mulford; Oak Tree Pollen Extract—Mulford; Orchard Grass Pollen Extract—Mulford; Perennial Rye Grass Pollen Extract—Mulford; Plantain Pollen Extract—Mulford; Redroot Pigweed Pollen Extract—Mulford; Redtop Pollen Extract—Mulford; Russian Thistle Pollen Extract—Mulford; Rye Pollen Extract—Mulford; Sagebrush Pollen Extract—Mulford; Sugar Beet Pollen Extract—Mulford; Sunflower Pollen Extract—Mulford; Sweet Vernal Grass Pollen Extract—Mulford; Walnut Tree Pollen Extract—Mulford; Western Ragweed Pollen Extract—Mulford; Wormwood Pollen Extract—Mulford.

Sharp and Dohme:
Caprokol (Hexylresorcinol—S. and D.)

Frederick Stearns and Co.:
Insulin—Stearns Single Strength.
Insulin—Stearns Double Strength.
Insulin—Stearns Quadruple Strength.

E. R. Squibb and Sons:
Lentil-Allergen—Squibb.

United States Standard Products Co.:
Scarlet Fever Streptococcus Antitoxin—U.S.S.P.

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THE VALUE OF GASTROENTEROSTOMY IN THE TREATMENT OF DUODENAL ULCER*

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Cornell Surgical Division, Bellevue Hospital

On no subject with which the writer is familiar is such a divergence of opinion expressed as is found in authoritative statements on the relative merits of gastroenterostomy and other forms of treatment for duodenal ulcer. Every large medical and surgical clinic in the world has ample opportunity to observe this disease. Hardly a year goes by that it is not made the subject of discussion at some important medical or surgical conference. On such occasions there is a recital of our lack of knowledge concerning the true etiology of the disease, with a rehearsal of the theoretical causal factors—none of which has been proved. There is discussion as to the relative value of medical or surgical, or combined treatment, with the optimists claiming 90 to 100 per cent cures, and holding that gastroenterostomy is among the most satisfactory curative agencies known to surgery, and others finding dissatisfaction with every method of treatment.

Out of all this testimony one has difficulty in disentangling the kernels of truth, as he becomes lost in a maize of contradictory evidence. Duodenal or post-pyloric ulcer only is under discussion and it is needful to emphasize that the pyloric ring is a definite and important dividing line, a fact which is too often overlooked.

Gastroenterostomy was first applied to the treatment of pyloric obstruction nearly thirty-five years ago, and was devised for the purpose of obtaining an outlet to an otherwise closed viscus. The results were highly satisfactory, and in spite of vicious circle, intestinal obstruction, hemorrhage, and other complications, it came immediately into general favor which was well deserved.

At that time pyloric ulcers in large number remained untreated until huge obstructing cicatrices developed, so that relief was demanded, not from the ulcer itself, but from this complicating lesion. When for any reason a second operation was performed, the surgeon was struck with the fact that the presence of the operative stoma had not only relieved the obstruction but had also made the callous mass to disappear. Hence arose the hope that a gastroenterostomy was curative of the duodenal ulcer itself. Then followed a long abuse of the operation, in which it was done not only when a duodenal ulcer was present, but when the symptoms of this lesion were present, even though at operation no ulcer could be demonstrated. The experience of having an ulcer exhibited for inspection, which was purely an artefact caused by blanching of the tissue due to traction or muscular spasm, was not uncommon. This period placed upon gastroenterostomy an undeserved odium. The operation was called upon to relieve symptoms which were unrelated to a known lesion. However, there were gradually developed improvements in technique, which greatly added to the efficiency of the operation in properly selected cases. Thus the operation became standardized both in its indication and its technique, so that during the past decade only minor changes have been advocated. Opinions are still at variance on many of these, but in all probability they are not of first importance in determining the outcome.

Requisites are—a stoma of approximately two inches in length, placed in the posterior wall of the motor part of the stomach, that is in or near the antrum, and as near as possible to the greater curvature. The suturing of the opening in the mesocolon on the gastric side of the anastomosis prevents herniation. Absorbable suture material is used throughout. The jejunal loop must be short and the efferent limb must hang free. Disputed points include the direction of the gastric incision—horizontal, vertical, or oblique in one or the other direction—the use of retention clamps—and the careful suture of the jejunal and gastric mucosæ as a separate layer. This stage in the development of the operation may be said to correspond to the present decade, and therefore, in reaching a correct evaluation of the

*Read before the Inter-State Post-Graduate Assembly of America, Milwaukee, Wisconsin, October 27-31, 1924.

operation as at present used in the treatment of duodenal ulcer, one should confine the study to reports and material coming to hand within that time.

One important difference of opinion among operators during this period concerns the attempt to reproduce the condition for which gastroenterostomy was first done, namely a pyloric obstruction. In small non-obstructing duodenal ulcers, surgeons early began to find dissatisfaction with the results of simple gastroenterostomy. They believed that the stoma failed to completely sidetrack the gastric contents from the ulcer site. To meet this need of protection to the ulcer, the operation of pyloric exclusion was added to the gastroenterostomy. Eiselberg[1] devised the method of complete division of the pylorus, and infolding closure of the two ends. Girard,[2] Kelling,[3] Mayo,[4] Wilms,[5] Berg,[6] Brewer,[7] and others, followed with various modifications. The operation became a recognized adjuvant to gastroenterostomy in the treatment of duodenal ulcer, and was employed in many important clinics. Patterson[8] in a paper read before the Clinical Congress of Surgeons in Chicago in 1914, opposed this practice, and declared that "The occlusion of the pylorus is an unnecessary complication of gastrojejunostomy and is based on erroneous pathology". Lewisohn[9] in 1916 quotes this statement and adds the comment "This opinion however, is rather an isolated one"— and "in fact more surgeons agree that a simple gastrojejunostomy will not permanently cure the disease". He concludes "The vast majority of surgeons therefore agree that pyloric exclusion ought to be added to gastrojejunostomy to insure the permanent cure of pyloric and duodenal ulcers". I am entirely in accord with the view that gastrojejunostomy alone may not permanently cure duodenal ulcer, but question the view that pyloric exclusion should be added, and is a curative agent. I accept Patterson's teaching as quoted. Finsterer[10] in the notes of his lectures given in this country, condemned pyloric exclusion and quoted Von Haberer[11] as having discarded it because of the high incidence of gastrojejunal ulcer as a sequela.

Sherren[12] in 1920 says pyloric occlusion does not add to the efficacy of gastrojejunostomy, has no bearing on the healing of the ulcer, or the continued patency of the stoma. Experimental and clinical evidence is abundant that a properly placed gastroenterostomy permits emptying of the stomach through the stoma, rather than through the patent pylorus.

Hartmann[13] in his paper before the American Surgical Association in 1914, admirably presented this evidence and concluded that a stoma placed in the motor portion of the stomach, that is the antrum, gave sufficient emptying of the stomach to protect the duodenal ulcer, while one in the fundus would not do so. The purpose in introducing the discussion on pyloric exclusion is to show that surgeons found dissatisfaction in a simple gastroenterostomy. The hope of bettering it by pyloric exclusion did not materialize, and gradually this supplement is losing favor.

Then followed an application of the observation that many cases of acute perforating duodenal ulcer seemed to be permanently cured by simple suture of the perforation. This led to the deliberate destruction of the ulcer by excision, cautery, or inversion. In conjunction a gastroenterostomy was or was not performed. This adjuvant enjoys a very considerable popularity up to the present time, but its use is by no means universal, and I am unable to determine from the literature that its employment yields more satisfactory results than its omission.

Finney,[14] Flint[15] and Horsley[16] frankly dislike gastrojejunostomy as a curative measure for duodenal ulcer. We have their teaching favoring a pyloroplasty, with coincident excision of the ulcer. While this teaching has not been followed in most clinics, there are strong advocates of the pyloroplasty and its associated procedure gastroduodenostomy.

Boyden[17] makes this emphatic assertion. "There is probably no such well-established and frequently performed operation which has been adhered to by the leaders of surgery with apologies as gastrojejunostomy. It has long since been proven physiologically and mechanically non-operative, except in cases of pyloric stenosis." These statements were made in an advocacy of the Horsley operation with excision of the ulcer, as opposed to a gastroenterostomy. In the discussion following his paper there were the usual differences of opinion expressed, which convince the reader that duodenal ulcer is not satisfactorily cured by gastroenterostomy in the hands of many surgeons. Wilensky[18] in studying the functional results following gastroenterostomy in 1922 says "For a number of years the operation of gastroenterostomy has been gradually losing in favor, and at the present time dissatisfaction with the surgical procedure is approaching an extreme point". In this paper Wilensky concludes that the best functional results are obtained when a posterior gastroenterostomy is made with a short jejunal loop by the use of the Murphy button, the stoma being close to the greater curvature and in the pyloric region of the stomach. His findings seem to show that the addition of a pyloric oc-

clusion also was beneficial. The results are determined from roentgenological findings on gastric mobility and chemical studies in a fasting condition, and following the Ewald test breakfast and the Riegel test meal. He fails to comment on the clinical symptoms of the patients, but says "These tables should not be interpreted as indicating in any way the number or percentage relationships of the cases cured or not cured". The use of the Murphy button is certainly not the choice in most clinics, and as pointed out above, pyloric exclusion is a definitely discarded procedure by many of the most experienced surgeons. Wilensky[19] in an earlier paper (1918) reported another study. He states as follows on the results of pre-operative findings. "Ulcerating lesions in the stomach or duodenum are not necessarily accompanied with disturbances in the normal physiology of acid secretion." He further shows that when a disturbance is found, it bears no relation to the site, the size, character or age of the ulcerative process. The post-operative findings are equally inconclusive. White[20] studied a series of cases pre- and post-operatively on the sixth and eighteenth days. There was a definite reduction in acidity after the operation amounting to about one-half, but there was invariably less of a reduction at the later examination than at the earlier. He considers this lowering of acidity as a "rupture" of the vicious cycle, whereby healing takes place. No evidence is found in these studies that acidity is definitely and permanently lowered by the presence of the gastroenterostomy. This opposes a belief held by many, that lowered acidity results and is a curative factor.

Smithies[21] statistical analysis of 273 cases following gastroenterostomy is instructive. He found 216 patients showing some degree of post-operative pain or gastric disturbance, sufficient to prevent their being classified as well. A larger per cent of these belonged to duodenal ulcer than to pyloric or gastric. It is fair to draw the conclusion from Smithies' studies that he was unable to definitely determine the cause of the symptoms complained of either by roentgenological or chemical study, in a very large number of patients. One fact stands out, namely, that gastroenterostomy gives great relief for a certain time, but that a large per cent sooner or later experience a recurrence of symptoms which can not be ignored by the patient or the surgeon who has undertaken the patient's relief.

Hutchison[22] writing in the British Medical Journal in 1918 on the "Disappointments after Gastroenterostomy" says "The operation may have relieved the patient of the devil of pain, but it has let in seven other devils which are about as disagreeable tenants". The complaints of such patients are various: there is a heavy feeling or distention in the epigastrium as if the stomach were too big, or "a feeling of emptiness, as if the food dropped straight down"—weakness, faintness, depression, failure to gain weight, etc. His explanation of these symptoms is vague, and he gives no information as to how they may be avoided or corrected. Morehead[23] in discussing this paper, gives three causes for the disappointments. 1. Unhealed ulcers. 2. Marginal ulcers, which are much more common than believed (and usually reported). 3. Forcible contractions in a dilated pyloric pouch, which he believes arises from placing the stoma too far from the pylorus.

Hort[24] in the discussion, expresses the belief that all these symptoms can be prevented or cured by taking care of foci of infection, tonsils, teeth, etc., because these symptoms result from such infection, producing a recurrent crop of acute and healing ulcers.

The literature contains much further evidence that gastroenterostomy as a cure for duodenal ulcer has been disappointing in the experience of many surgeons. It must be noted that this evidence comes almost entirely from surgeons and does not take cognizance of the rather more caustic comment that comes from the general internist and the non-operating gastroenterologist. Their views are well summarized by Brown[25] in his paper before the American Medical Association in 1922. He says "In my experience in the chronic group of cases, even without obstruction, surgery has been more effective and more permanent in its results in the majority of cases than medical treatment. Notably in cases where pyloroplasty, resection, or the Polya operation has been done. To me, gastroenterostomy has always seemed peculiarly unphysiologic. I have rarely seen cases, except those of almost complete pyloric obstruction, in which it has been absolutely successful, and gastroenterostomy has never seemed to me the operation of choice, but the operation of necessity. It is interesting to note that practically the same percentage of cures is claimed by the followers of each special scheme of diet, as by the followers of special surgical procedures. Each must be deluded as to these figures. Certainly from 75 to 90 per cent of ulcers are not cured in the true sense of that word, by either medical or surgical procedures. Our clinics and consulting rooms are filled with patients suffering from recurrent symptoms after medical treatment, and with patients that report

with the same or different symptoms after surgical therapy."

It is apparent that a considerable portion of the profession are not satisfied with a simple gastroenterostomy as the treatment for duodenal ulcer. However, it is obvious that the evidence is not universally convincing, because gastroenterostomy is still a daily procedure in the hands of experienced surgeons.

Moynihan[26] in 1919 says "The operation of gastroenterostomy in appropriate cases by competent operators is probably the most successful of all surgical procedures of equal magnitude". He attributes the disappointments and failures to many factors—(a) The operation has been performed for disorders other than gastric or duodenal ulcers. (b) Failure to remove other foci of infection within the abdomen, appendix, gallbladder—and above all failure to deal with the ulcer itself. Either the large vessels going to it should be ligated, or the ulcer should be infolded. He rarely excises the ulcer or resorts to pyloric occlusion or resection, "for the results of the simpler operation of gastroenterostomy are hardly to be improved". (c) Defects in technique, of which he enumerates: 1. Long loop. 2. Short loop, but efferent arm blocked by kink or adhesions. 3. Recurrence of adhesions on the raw surface left after separating the jejunum from the surface of the mesocolon. 4. Rotation of jejunum on long axis. 5. Too small opening. 6. Badly placed opening; should reach to greater curvature whether vertical (as he prefers), or oblique left to right or right to left, matter very little. 7. Hernia. 8. Use of non-absorbable suture. 9. Ventral hernia. (d). Late complications: 1. Jejunal ulcer. 2. Cancer. In his conclusion he evinces an enthusiasm for gastroenterostomy as a cure for duodenal ulcer.

Bevan[27] states that 90 per cent of duodenal ulcers are cured by gastroenterostomy, with 2 per cent operative risk and 3 per cent risk of marginal ulcer.

Mayo[28] finds satisfactory results in 90 per cent of the gastroenterostomies, but significantly believes that with increasing experience and knowledge the practice of excising certain types of duodenal ulcers and combining this with a pyloroplasty will become more general.

Balfour[29] quotes Sherren as having 92.6 per cent of patients "perfectly well" after two years and as saying "patients who go for two years without symptoms never develop them later". Balfour reports 1000 cases who had been operated on at least ten years previously and finds 88 per cent with "relief from the symptoms for which the operation was performed". Yet there were ninety cases who still had pain—twenty-five who showed a recurrence of vomiting—fifty-seven who showed a recurrence of hematemesis, melena, or both, and thirty-five who had a recurrence of the ulcer either in duodenum, stomach, or stoma—making a total of 207. Balfour states that only twenty-two of the ninety who had pain thought it necessary to return for examination, but this does not justify considering the remaining sixty-eight as being "relieved of symptoms". This analysis may be misleading because some of the patients included may be suffering from more than one of the symptoms, and they may be included in two or more groups. Among the causes of disappointing results Balfour mentions failure to remove the appendix; young patients; the constitutional infirmity type of patient; a small ulcer without obstruction. The results are not so certain if a patient has had mild symptoms of short duration, low acids, and a small uncomplicated lesion. Such cases from a technical point of view are satisfactory for local excision of the lesion with or without pyloroplasty, but experience in the Mayo Clinic has shown that the end results with these procedures are not definitely better than with gastroenterostomy. Balfour advocates removal of the ulcer, however, when it is reasonably accessible. There seems to be an inconsistency in Balfour's reasoning concerning this. The results he believes are very satisfactory when the ulcer is not removed, but it should be removed when this can be easily done.

Peck[30] in a paper presented before the New York Surgical Society in 1924, reported approximately 90 per cent cures following gastroenterostomy for duodenal ulcer. He protested against the more radical measures and he adds neither excision of the ulcer nor exclusion of the pylorus to the gastroenterostomy. He presented cases illustrating cures of many years, who at the time of operation had harbored extensive indurated and chronically perforating ulcers. They were free from every symptom of digestive discomfort, though one patient had suffered from a hemorrhage six years following the operation, and two years prior to being exhibited. Peck explained in detail his technique and stated that it was rigidly adhered to in all cases. He claimed for it no advantages except that if the operation were always done in the same way the surgeon developed a mastery of technique, which he believed had much to do with obtaining uniformly good results. It is important to note that he uses a nearly vertical incision in the stomach, running downward from the right margin of the cardia. Thus the stoma lies proximal to the pyloric an-

trum. He also uses a through and through stitch traversing all layers. The discussion following this paper seemed to indicate that the members of the Society agreed with his conclusions, and that gastroenterostomy had proved a satisfactory operation for duodenal ulcer in their hands.

I presented three cases in whom I had resected the first portion of the duodenum and the pyloric antrum for extensive induration and chronically perforating ulcers of that portion of the duodenum, followed by a gastroenterostomy or a Polya repair. This procedure did not elicit favorable comment, and one was led to infer that the Society's opinion concurred with Dr. Peck's views.

One is forced to the question, why this great diversity of opinion as to the value of gastroenterostomy in duodenal ulcer? Why do we find statements that "the operation has proved a failure", "is only done with apology", "causes a marked disturbance of gastric physiology", "must be combined with pyloric exclusion", "must include infolding of the ulcer or its excision", on the one hand; and on the other, statements that "no operation of equal magnitude gives better results", that 90 per cent of the patients are absolutely free from symptoms and "in the remainder the discomforts may almost be considered as negligible", that there is no need of pyloric exclusion which is "an unnecessary complication of gastrojejunostomy and is based on erroneous pathology"? Why do we find Moynihan,[26] Patterson,[8] Mayo,[28] Bevan,[27] Deaver,[31] Peck,[30] Balfour[29]—doing the operation constantly and with enthusiasm, and Finsterer,[10] Haberer,[11] Finney,[14] Horsley,[16] Hutchison,[22] Boyden,[17] Flint,[15]—discarding it for some other method? Why in every general discussion should there be a contradictory note, even among the surgeons, which note is emphasized by the internists and gastroenterologists?

Is it because many ill-considered opinions find their way into the journals? Is it because the subject possesses such inherent difficulties that the truth is yet to be discovered, and in the meantime everyone is interpreting findings to bolster a preconceived conviction? Is it because a condition of good health, of "cure"—is such a vague uncertain thing that to one observer a patient is seriously suffering, while to another his "discomforts are so minor as to be negligible"? Or is it that there really is such a difference in the results obtained by different surgeons? If so, do all the successful surgeons follow the same technique? Certainly they do not all follow the same technique. Some infold the ulcers, some excise with knife or cautery, some insist on the stoma near the pylorus, some insist it shall not encroach on the antrum. Some make it follow the vertical line, some make it oblique from left to right and some from right to left. Some exercise great care in sewing the two mucosæ together with a separate suture. Some suture with a through and through stitch. Some use clamps. Some condemn them. Many surgeons of experience carefully select from these divergencies the steps that their judgment dictates and put them into execution with skill. Yet they finid no enthusiasm for the operation and are inclined to be apologetic that they can suggest no more certain method of curing their patient.

I have tried to be judicial in this investigation, and my sincere opinion is that these questions must remain unanswered, but if we hope to really cure chronic duodenal ulcer, we must find some means more efficient than gastroenterostomy alone has proved to be, done by what ever technique.

It is not to be inferred that the sufferer from this lesion can gain no relief from his suffering by the operation of gastroenterostomy, or that a large per cent of such sufferers (possibly over a majority), may not be restored to good health; but there is a large number in which this is not accomplished. They remain more or less sufferers in spite of our best efforts. Our dilemma lies in the fact that we are ignorant of the reasons for our successes or our failures. If we fail to cure a hernia, we know wherein we failed, if cancer recur, we know we failed to remove it in toto, if a fracture end in a poor result we know we failed to correct the malposition of bone and soft parts, if a permanent biliary fistula follow cholecystectomy, we know we have left an obstructive element in the common duct. In some duodenal ulcers we know we have failed because the ulcer did not heal, or because a marginal ulcer developed, or because a kink in the efferent loop formed. But we do not know why these things happened, and in many failures no such demonstrable cause of failure is present. Even when these are present we can often only surmise their presence, and are at a loss to know a method of relief. There are no reliable data as to the occurrence of an unhealed ulcer, but many individual reports show that such have been found at a second operation. More complete data are available as to the frequency of marginal ulcer. Bevan,[32] Mayo,[33] Moynihan[26] and many others place this complication as occurring in 2 to 3 per cent of the cases. Sherren[12] found it present in 19 of 348 cases in which gastroenterostomy was done for duodenal ulcer. "No jejunal ulcer had arisen in any uncomplicated case that he had operated upon since February, 1914, and no an-

astomosis ulcer since he gave up the use of an unabsorbable suture for the outer layer". Erdmann[35] cites several cases in which only absorbable sutures were used.

Finsterer[10] and Haberer[11] find this complication in a much higher per cent of cases where unilateral exclusion of the pylorus was done. Finsterer states that gastrojejunal ulcer occurred in 17 to 20 per cent of such cases. Though much has been written on the subject I can find no conclusive etiological factor other than the use of non-absorbable material and the elimination of this has certainly had a beneficial influence in the prevention of this sequella.

The outcome of ninety-one cases of demonstrated duodenal ulcer operated upon in the clinic of the Cornell Division at Bellevue Hospital since 1916 is shown in the tables.

TABLE I

Posterior Gastroenterostomy Only

No.

3. Failure—under observation 8 years. Continued pain and digestive disturbance. Re-operation after 7 years. Scar duodenal ulcer and adhesions found.
5. Fair—for 6 months. Pain after 1 year.
6. Excellent—1 year.
7. and 8. Fair—6 months.
10. Excellent—5 years.
14. Fair—2 years.
16. Failure—excellent 6 months. Recurrence 1 year. Re-operated 6 years. Ulcer found. Died pneumonia.
17. Excellent—6 months.
19. Failure—6 months to 7 years.
21. Fair—excellent 6 months. Return symptoms 3 years. Controlled by diet and alkali.
25. Excellent—4 years.
26. Poor—6 months.
27. Excellent—6 months.
28. Fair—6 months.
37. Excellent—6 months. Indigestion (?) 4 years.
40. and 41. Excellent—5 years and 6 months respectively.
42. Failure—1 to 4 years.
48. Fair—1 to 3 years.
50. Failure—6 months to 5 years. Ulcer present by x-ray.
56. Failure—well for 2 years. Ventral hernia repaired after 1 year, when no ulcer was found. Symptoms recurred 2½ years. X-ray shows pyloric obstruction.
66. Fair—3 months.
69. Excellent—6 months.
71. and 73. Failures—well 3 months. Then recurrence all symptoms 15 months and 20 months respectively.
74. and 75. Excellent—2 years.
76. and 81. Excellent—2 years and 1½ years respectively.
87. Failure—Re-operation 10 months, ulcer present.
88. Poor—6 months.
89. Fair—excellent 6 months. Then recurrence. Control by diet and alkali.
91. Failure—x-ray shows ulcer 8 months.
92. Excellent—10 months.
93. and 94. Fair—return symptoms 4 months and 5 months respectively. Controlled by treatment.
95. Excellent—7 months.
96. and 100. Fair—9 months and 2 years respectively.
112. Excellent—2 years. Pyloric obstruction present at time of operation.
113. Fair—2 years. Diet and alkali control symptoms.
115. Failure—post-operative death. Autopsy showed open bleeding vessel in base ulcer.
118., 121., 125. and 130. Fair—3 months, 2 months, 10 months, 6 months, respectively.
134. and 143. Excellent—5 months and 3 months respectively.

Excellent = perfect health without treatment.....18
Fair = some symptoms controlled by diet, etc.....18
Poor = some symptoms not controlled by diet, etc. 2
Failure = condition unchanged by operation, even with diet, etc.....11

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TABLE II

Posterior Gastroenterostomy Plus Pyloric Occlusion

No.

1. Fair—well 6 months. Return symptoms 1-2 years.
2. Excellent—6 months.
4. Excellent—1 year.
9. Failure—6 months to 6 years.
11. Fair—under observation 8 years. Symptoms present.
12. Excellent—6 months.
13. Failure—no relief 6 months.
18. Fair—fullness, discomfort 6 to 18 months.
23. Excellent—6 months.
24. and 30. Fair—6 months each.
31., 32. and 33. Excellent—6 months, 6 months, and 4 years respectively.
45a. Fair—excellent 6 months. Then return symptoms controlled by diet and alkali 4 years.
128. Excellent—1 year.

Excellent = perfect health without treatment..... 8
Fair = some symptoms controlled by diet, etc..... 6
Failure = condition unchanged by operation, even with diet, etc..... 2

16

TABLE III

Posterior Gastroenterostomy Plus Removal of Ulcer, by Acute Perforation, Cautery, Excision, Inversion, or Resection with Pyloric Portion of Stomach

No.

15. Excellent—acute perforation. Suture—6 months to 2 years.

34. Failure—acute perforation. Suture. Excellent 6 months. Then return of symptoms for 4 years. Re-operation. Duodenal ulcer and jejunal ulcer found. Latter excised. Well 7 months.
51. Excellent—ulcer cauterized. 3 years.
53. Excellent—ulcer inverted. 3 years.
72. Failure—acute perforation. Suture. Immediate result fair. Return symptoms uncontrolled by diet, etc.
82. Fair—acute perforation. Suture. Excellent 6 months. Fair 15 months.
85. Fair—Polya. 6 months to 1 year.
103. Fair—Billroth II 6 months.
104. Excellent—acute perforation. Suture. 3 years.
111. Excellent—ulcer cauterized. 1 month.
119. Fair—ulcer cauterized. 2 months.
133. Fair—Billroth II 5 months.
136., 138., 142., 144. and 146. Excellent — Polya. 4 months, 5 months, 3 months, 1 month, respectively.

Excellent = perfect health without treatment.....10
Fair = some symptoms controlled by diet, etc..... 5
Failure = condition unchanged by operation even with diet, etc., acute perforations..... 2
—
17

TABLE IV
Deaths

No.
46. Posterior gastroenterostomy and pyloric occlusion. Died 3 hours post-operative.
47. Posterior gastroenterostomy only. Re-operated on 13th day for drainage of abscess containing alkaline fluid. Presumably leakage from stoma.
84. Posterior gastroenterostomy only. Ulcer adherent to liver. Died 5 days post-operative. No autopsy.
91. Posterior gastroenterostomy only. Patient in extremis. Could take no nourishment. Fed through jejunostomy for 18 days before operation. Died starvation.
95. Posterior gastroenterostomy with cauterization of ulcer. Died 9th day from hemorrhage thought to come from ulcer site.
108. Polya. Diet post-operative pneumonia.
110. Polya. Died post-operative hemorrhage or peritonitis. No autopsy.
115. Posterior gastroenterostomy only. Died post-operative hemorrhage. Showed at autopsy to have come from eroded vessel in ulcer.
139. Polya. Died post-operative pneumonia and lung abscess.

Though the technique has not been quite so uniform as that given in Dr. Peck's[30] series, the same general method has been followed in doing the gastroenterostomy. Non-absorbable sutures have been the invariable rule. The stoma is made in or close to the antrum, as near as possible to the greater curvature, and usually in an oblique direction downward from left to right. Its length has been from 2" to 2½". The rent in the mesocolon is sutured to the gastric side. The jejunal stoma is longitudinal on the antimesenteric mid-axis. The short or no loop has been used, usually with reversal, but when non-reversal made a more easy fall this was used. The Treitz fold of peritoneum is divided when indicated. In some cases care was taken to suture the mucosæ separately, but since this was in the later part of the series, we cannot say that the results have been bettered thereby. The use of clamps has been general but not invariable, and no conclusions can be drawn concerning this feature. Pyloric exclusion—mostly the Wilms method—was employed in the earlier cases. They all seemed to me to have a much harder time post-operatively than when this was not done. Every effort has been made to keep all patients under medical and dietetic care following operation and to have them report back at intervals to the follow-up. An almost invariable rule was that they remained in the hospital for twenty days at least, and then spent two weeks at the Burke Convalescent Home in the country.

Bellevue is a large municipal hospital and receives as its clientele the poorer and harder worked classes. Their ability to follow a careful regime is limited both by environment and by ignorance. Many of them belong to the floating population, and it is difficult to keep them under continued observation and care. With the aid of the department of gastroenterology at the Cornell Medical College, which is directly across the street from the hospital, we have had greater success in this than would have otherwise been possible.

The series here presented only includes those cases in which a posterior gastroenterostomy was done either alone or in conjunction with other procedures. Simple excision of the ulcer, pyloroplasties, and acute perforations with simple suture are not included. Acute perforations which had a posterior gastroenterostomy in addition to suture of the perforation are included provided they survived the peritonitis resulting from the perforation.

Granting that we have over-emphasized in Table I of Simple Gastroenterostomy the symptoms which class certain cases as fair or poor, as suggested by Wm. J. Mayo[36] in a recent editorial, there still remains an impressive array of failures. Even these failures have not condemned the patient to a life of complete invalidism. They are most of them earning their living under the handicap of the disease. But this they were doing before the gastroenterostomy was performed, and

the operation is classed as failure because it failed to alter the condition for any considerable time. The same is true of the "fair" cases. They are improved and get on fairly well with care in their diet and work. But so they did before the operation, and it seems to us that the operation is not the most important factor in the improvement. One is forcibly struck with the number of cases that are classed excellent after a short period following the operation, but at a later date show marked symptoms placing them in the class of failures. It is also to be noted that the failures are often due to the fact that the ulcer did not heal, or in the healing left deforming scars or crippling adhesions. At the most enthusiastic estimate only thirty-six satisfactory results can be accepted, that is approximately 73 per cent, against eleven failures, approximately 22 per cent, in the forty-nine cases which were treated by posterior gastroenterostomy alone. It is probable that those cases classed as excellent or fair for short periods only, have remained in *statu quo* because every effort is made to keep all cases under observation, and if the operation failed to give relief, the patient is more apt to report back for advice.

A better showing is made in those cases in which a pyloric occlusion was added to the posterior gastroenterostomy, in that only two failures in sixteen cases are recorded. (See Table II.)

Still better is the result where some method of removing the ulcer is employed—only two failures are found in this series of seventeen cases, and both these were when the ulcers were destroyed by a pathological perforation. Eliminating these two cases, and including the cases classed as fair, on a more favorable scale we find fifteen cases giving a satisfactory degree of success with no failures. (See Table III.) Turning now to the fatalities, Table IV, we find a disproportionate number debited against the more radical procedures, particularly the polya type. It is true that this operation was done only in those cases showing the most advanced lesions—great induration, chronic perforations, and complicating adhesions. It is also true that the deaths occurred in the earlier cases, when the technique was not so perfected as in the simpler, more standardized operations. Further, these operations have been done in many cases of gastric ulcer, and recent cases of duodenal ulcer not included in this study. These factors deserve consideration in estimating the relative danger of the various operations. Our results will be seen to confirm my study of the work of many other clinics, namely that gastroenterostomy alone as a curative factor in duodenal ulcer leaves much to be desired. Either the changes brought about by this procedure are not those adapted to the permanent cure of the ulcer, or the technique must be farther improved to obtain this result. There does not seem to be much hope that the latter can be accomplished when one considers that the operators reporting the best results differ in many important details, and those operators who do not claim complete satisfaction from gastroenterostomy follow in all essentials the same technique, not differing more than their more successful colleagues differ among themselves. A general tendency is seen in the later writings of the most enthusiastic supporters of gastroenterostomy to limit this operation more than they have in the past, and to advocate in an increasing number of cases a supplementary procedure, or the more radical operation of resection. Peck is a notable exception to this, in that he emphatically protests against such tendency, and his paper before the New York Surgical Society was presented with the purpose of combating the more radical procedures. The more recent writings, however, of Moynihan,[26] Judd and Rankin,[34] C. H. Mayo[4] and others, indicate to me that they are finding less complete satisfaction in gastroenterostomy alone, than had formerly been the case. I trust that I am not misinterpreting them in this respect.

The most ardent advocates of something different from the gastroenterostomy are Finney,[14] Flint[15] and others, who frankly prefer some type of pyloroplasty, DeQuervain[37] who finds only 65 per cent cures after gastroenterostomy alone, and Finsterer[10] who advocate very extensive resection of a large part of the normal stomach, even for small duodenal ulcers, and Haberer[11] who also advocates excision of a less extensive type. These operators believe that gastroenterostomy does not fulfill the needed conditions for curing duodenal ulcer.

It is fully appreciated that until the etiology of duodenal ulcer is more clearly understood, our treatment must to a certain degree be empirical. While all attempts up to the present time have left the etiology largely an unsolved problem, progress is being made towards a solution. The studies in the direction of proving the relation of foci of infection to the production of ulcer are continually going forward: for example those recently reported by Nakamma[38] working with Rosenow.[39] Many writers believe that their clinical results are improved if they successfully remove all possible foci of infection, either within the abdomen, including the ulcer itself, as advocated by Moynihan,[40] or in extra-abdominal parts

as urged by many writers. Another important element in solving the cause of ulcers lies in the production of experimental chronic ulcers in animals, as accomplished by Mann and Williamson,[41] and also by Dragstedt and Vaughan.[42] It is therefore a justifiable hope that this long baffling problem will ultimately be solved, and when it is solved our treatment will become much more accurate, and prophylaxis will in all probability become a successful accomplishment.

Until this is accomplished, what course should be followed by the profession in treating duodenal ulcer? Notwithstanding the enthusiasm and satisfaction of some surgeons for the operation of a simple gastroenterostomy, I think it is fully demonstrated that this operation is not a completely satisfactory solution of the problem. It however, has a definite value until something better is evolved, and I want to guard against the assumption that I advocate its abandonment. I shall beyond doubt do the operation myself many times in selected cases.

The purpose of this communication is to focus attention on its shortcomings and to arouse in the minds of surgeons the necessity of finding more efficient methods. In this review of the subject, I have been impressed with the belief that more and more evidence is accumulating to the effect that there is an etiological relation between foci of infection and duodenal ulcer. Hence in conservative treatment more attention must be paid to the elimination of such foci. This must be followed up at the time of, and subsequent to surgical intervention.

It seems demonstrated that ulcers which remain active after a proper course of medicinal and dietetic treatment, should be removed to most certainly insure against their being a source of trouble. The question which my study leaves unanswered in my own mind is as to the wisest means of accomplishing this removal. Four general methods are at our disposal: (1) Excision of the ulcer either by knife or cautery; (2) The same with an added gastroenterostomy; (3) A pyloroplasty or gastroduodenostomy with coincident removal of the ulcer; and (4) A resection of the diseased portion of the duodenum, the pylorus, and the antrum of the stomach.

In favor of the first is the well confirmed observation that many persons remain entirely well after an acute duodenal perforation, which has been treated by simple suture. Most surgeons advocate nothing more than this, unless the repair has dangerously constricted the pylorus. In nonperforating ulcers, however, the concensus of opinion is that this procedure is not efficent, and the second procedure—the addition of a gastroenterostomy—is advocated. To this the objections to a gastroenterostomy alone apply.

One cannot escape the conclusion that removal of the ulcer and a repair by a pyloroplasty, or a gastroduodenostomy most nearly conforms to the sound surgical principle, that all parts shall be restored as accurately as possible to the normal at the conclusion of any operation. Unfortunately there are many cases in which this operation is extremely difficult, if not impossible, by reason of the fixity of the duodenum. Technical skill is overcoming the difficulties, and the usefulness of this method is covering a larger field.

My personal conviction is that the more radical method named under the fourth heading will occupy an increasingly large place in our work until the knowledge of etiology permits us to disregard the danger of recurrence of ulcer. To the properly trained surgeon such resections are not matters of great technical difficulty, and the mortality rate should not be higher than in the simpler methods. The pre-operative transfusion has given us a tremendous safeguard for these patients. They stand this operation without evidence of shock and the post-operative convalescence is always noted as particularly smooth. Its great advantage lies in the fact that it removes for all time the danger point with these patients, namely the first portion of the duodenum and the pylorus.

The most nearly physiological repair after such resection is the Billroth I type, but it is undoubtedly true that dangerous tension may result therefrom. There seems to be little choice between the Polya and the Billroth II, and in my own work I use the method that gives the more easy and natural fall into the jejunum from the stomach stoma. The proximal end of the jejunal stoma should be toward the lesser and the distal at the greater curvature. I am very strongly impressed with the finding of Roeder[43] and others, that separate suture of the mucosæ, including the muscularis mucosæ of the two viscera, should be done, and with a sufficient redundancy so that the rugæ may be in evidence. Clamps should only be used where absolutely needed to prevent contamination, and not as controllers of bleeding. This permits the separate ligation of bleeding points and allows the placing of the sutures for the sole purpose of accurate union, and does not require them to be placed for the additional purpose of hemostasis, which may because of tautness and position, prejudice their efficiency for the former. Moreover it removes one factor in causing trauma of the mucosa.

Note:—I desire to express my thanks to Dr. Woodhull L. Condict for aid in some of the follow-up work of this paper.

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HISTORY TAKING OF CHRONIC GASTROINTESTINAL DISEASE*

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The securing of a history of the development and course of the disturbances of function in an individual, and the analyzing of this information, requires on the part of the physician, the utmost patience, concentration, and skill in cross examination. Granting the skill and persistence, the result in accuracy of conclusion is in proportion to the powers of observation used during the process, and to the breadth of knowledge and conception of human nature, bodily development and structure, functional activities, origin of disease, and the immediate causation of symptoms.

The information obtained must be immediately recorded as a written or dictated statement such as would be sent to a fellow practitioner, for the original notes seldom contain all the essential points revealed. If this be doubted, look up old records and compare the history notes with the descriptive letter, or where there is no such letter, see if the diagnosis can be justified without calling upon memory to supply essential points.

Is it any wonder that the laborious and time consuming effort is so often shirked; that trust is placed in pathognomonic signs and dictums; that undue emphasis is given to "films" and that too frequently resort is had to exploratory operation.

The effort, however, must be undertaken if progress is to be made by the clinician and justice done to the patient. Especially is this required in dealing with diseases of the gastrointestinal system, for here over 80 per cent of the points of evidence upon which a diagnosis is based arise directly from the history; 15 per cent from physical examination, and less than 5 per cent from laboratory findings.

The clinician for long years was handicapped by the meagerness of knowledge of the gastrointestinal system and was diverted by the investigations of the secretions from the consideration of those factors which are the more immediate cause of symptoms.

But of late years the surgeon, radiologist, bacteriologist and physiologist have provided us with an abundance of facts and observations, which, illuminated by the old and new observations in the allied sciences, such as biology and embryology, have given rise to new conceptions of the functional activities and correlations of the tract. So well do these conceptions harmonize with clin-

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ical observation and experience, that we can more confidently search for evidence in the historical details, and arrive at conclusions which a few years ago would have seemed impossible.

Of these conceptions probably the most important are those built up with regard to the musculature. Just as the study of heart disease has resolved itself into a study of the properties, the activities and correlations of the muscle cells and the controlling mechanism, and of the disturbances set up in these by damage, infectious or otherwise, so the study of gastrointestinal disease has become a study of the smooth muscle cell and all that relates to its development, structure, activities, controls and disturbances of function.

Embryological studies still leave many important gaps in our knowledge of the evolutionary development of the tract, but there are certain general conceptions held in common by the opposing schools. Whether or not we believe with Gaskell is not of material importance, as his theory of the origin of the primitive tube provides as well as any other a working conception applicable in clinical investigation. It was his belief that the vertebrate developed from a primitive segmented worm-like organism, and that appendages developed in pairs on the ventral surfaces of the segments, of which only those anteriorly and posteriorly have left vestiges in the course of evolution, namely, the branchial arches which go to make up the face, and an anterior and a posterior pouch which, penetrating the yolk sac between the infolding leaves of the central segments, joined to form the gastrointestinal tract.

With the development of the appendages a corresponding increase of nerve elements was necessary. These remain within the central nervous system but occupy a different position from the motor cells of the skeletal muscles, as can readily be seen when comparing the situation of the nuclei of the only skeletal muscles in face (the extrinsic muscles of the eye) with that of the motor nuclei of the facial muscles.

He held that the muscles of these appendages were different in structure, and being a later development were not so closely linked up with the higher developments of the nervous system. That a difference does exist is seen in the coordinate and purposeful action of the facial muscles at birth in contrast to the incoordinate action of the skeletal or segmental muscles and in the great difficulty we have in hiding emotion. The primitive tube being of even later development is farther removed from "higher" or "will" control, though still influenced by the basic senses and emotions. The extra motor nerve cell development required for its supply arises from the same tract as that supplying the face, but these emigrate from the central nervous system to accompany and remain in contact with the tube, and are known as the bulbo-sacral outflow. The motor cells of this outflow multiple so enormously during the development and growth of the tract that the comparatively few connector fibres of the vagi and pelvic nerves can have but a general control over wide divisions of the tube.

Other connections with the central nervous system develop later. In each of the central segments an extra development of motor nerve cells takes a place; these emigrating from the neural cord either gather as the sympathetic ganglia or become widely dispersed as in the case of those accompanying and embedded in the walls of the blood-vessels. This emigration is known as the thoracico-lumbar-outflow. As contact becomes established between the primitive tube and the central segments, invasion of the tube by blood-vessels and other segmental tissues takes place. Thus, each portion of the tube becomes more or less intimately related with that segment in which it happened to lie, sharing in the sensory fibres and sympathetic neurons of that particular segment, and this relationship may be to the right or left half of the segment according to the lateral displacement of that portion of the tube.

In this way the stomach becomes related to the sixth, seventh and eighth dorsal segments on the left side, the duodenum to the ninth dorsal segment, the small intestine to the tenth dorsal, the appendix to the seventh or eighth dorsal on the left, the colon to the eleventh and twelfth dorsal segments mid-line, etc.

Secondary developments of the tract arise from the duodenum in the ninth segment, and the out-growths invade and establish contact with other segments. The liver stalk extending to the right invades the tissues of the sixth to eleventh dorsal, and the displaced tissues (the diaphragm) of the fourth and fifth cervical segments.

The gall-bladder stalk passes to the right in the tenth dorsal segment but is rapidly isolated by its peritoneal covering.

The pancreatic stalks pass to the left, and crossing the tenth deeply invades the eleventh dorsal segment.

These sensory contacts help to explain the situations of certain distresses associated with disturbances in this or that portion of the tract.

A primary and permanent muscular coat develops from the "mother" cells which accompany the primitive tube. A secondary and outer coat develop from "mother" cells entering with the blood-vessel invasion does at one stage of evolu-

tion completely cover the tract, but in man is represented only by the sphincters (the internal and sphincter,—the ileo cæcal sphincter—the sphincter of Odi, and possibly fibres embedded in the pylorus).

The part that the various innervations play in the control of the musculature of the tract is only vaguely surmised.

That stimuli traveling the bulbo-sacral route excite activity in the general coat and cause relaxation of the sphincters, and that the opposite results occur when stimuli travel the thoracic lumbar outflow is generally true, but there is evidence that stimuli along either or both may produce contraction of the pylorus, and merely modify the character of the activity and relaxation in the rest of the musculature.

The properties of the muscle cell consist of the power to initiate rhythmic active contraction, to transmit stimuli to the adjacent cells, to develop continuous stationary contraction (tonic or tetanic), and to actively relax.

While these properties are under a certain amount of external control by efferent stimuli along the two opposed routes, yet the principle control of the activities and correlations seems to be by modification of these inherent properties and by means of local neurons, local stimuli and local reflexes.

Certain general activities of tract may be depended upon to be in constant play unless disturbed or reversed by obstruction, fright, etc. Faint rhythmic peristaltic waves are continuously traveling over the tract from the supposed point of origin in the cardia to the cæcum, being modified here and there by the variance in properties and in local controls. Transmission of contraction from any one point of stimulus spreads farther and more readily downwards. Contraction occurs over the content and the tract beyond relaxes before the oncoming food.

In the course of the development of the gastro-intestinal tract, the properties of the muscle cells and the character of the correlation by local control, are modified to bring about special action of the musculature. The stomach musculature may be taken as an example. At least two distinct divisions, originally separate pouches, can be recognized, not only by the sharp line of demarkation existing in the mucus membrane, but by the properties of the muscle and the character of the correlation.

The musculature of the cardia can readily initiate rhythmic contraction, can actively relax, has no great power of active contraction, but is able to maintain prolonged general and almost stationary contraction; produces only weak shallow peristaltic waves, and is not easily provoked to prolonged local contractions; while the musculature of the pyloric antrum can be readily provoked to prolonged local contractions, shows deep peristaltic waves, is capable of strong active contraction, and relaxes but slightly. The junction of these two musculatures is not abrupt as is that of the mucus membranes, merging rather diffusely. Yet it is in this region of an old sphincter that the property of maintaining prolonged local contraction is seen at its best, in the production of hour glass stomach in response to local or distant stimuli.

The stomach is a hollow muscular mechanism which acts as a receiving, preparing and delivering chamber.

In receiving, the cardiac opening must relax, and this it does gradually during the passage of six to ten boluses. The first bolus requires a force equal to twenty-six c.m. of water to pass the opening, but the force required lessens with each bolus.

The stomach as a whole, relaxes before the oncoming food, but this takes place principally in the cardia, which lengthens and widens to a variable extent, until some unknown stimulus establishes a gradually increasing tonic contraction, which accompanies the sense of being filled and satisfied.

The general contraction of the stomach with the long periodic waves of active contraction and relaxation, and the periodic accentuation of the peristaltic waves are usually parellel, but not necessarily so. In general, the stronger the general tonic contraction, the less visible are the peristaltic waves. In tetany affecting the stomach the general tonic contraction may be so excessive as to narrow the stomach to a mere tube which has a widely open pylorus and no visible peristaltic waves; while a loose atonic stomach may periodically show excessive peristaltic waves.

A few minutes after, and at times even before the end of the meal, the mechanism of delivery begins.

Delivery of food through the pylorus to the duodenum necessitates the application of force. The most economical force is gravity, and here it plays a part, for the level of food in the cardia is above the level of the pylorus. To keep this force in action only slight energy need be expended by the longitudinal and oblique fibres in shortening or tucking up the cardia.

A force due to increasing intragastric pressure is established by the tonic contraction of the stomach wall as a whole.

A third force is brought into play through the propulsive action of the peristaltic waves, pro-

gressively increasing local intragastric pressure.

None of these forces require to be great, as delivery must depend, not so much upon the force as upon the size and regulation of the outlet. This by analogy should be regulated automatically in relation to the activities of the stomach. Of this relation there is some evidence in that about any given mean calibre of the outlet the only apparent variations are in relation to the peristaltic waves—the pylorus relaxing before and contracting with the wave as it approaches and involves the pyloric musculature, being relaxed about two-thirds of the time during the height of stomach delivery.

The mean calibre of the outlet, however, must be determined either by a special local contraction of the pylorus, or as part of a general tonic contraction of the stomach or pyloric antrum.

The regulation of the mean calibre is as yet undetermined, though it is known that acid and alkali reactions play little or no part. Yet we must believe that delivery is made according to the capability of the tract beyond to handle and pass on the content, and it is to be expected that difficulties in the tract beyond would influence the activities of the stomach to receive, to deliver, or to reject.

As yet the mechanism of these influences has not been discovered, but sufficient observations have been recorded to support the inference as to the reality of these reflexes and to justify the drawing of conclusions from the occurrence and timing of various gastric symptoms.

The above sketch is of course tentative and need not on this occasion be continued. It is given as an example of the means by which interest in the analysis of details may be kept up. Each one must build up a working hypothesis, to be changed to a more tenable form when opposed by fact or clinical experience.

In the development of a history of a case of indigestion it is well to postpone any consideration of symptoms until the course of the disease and the timing of the symptoms has been fully established. This is generally true, for a list of the symptoms of scarlet fever, typhoid fever and syphilis, when merely recorded as terms are much the same, but the general course of the attack, the severity and relations of the symptoms, etc., reveal the distinguishing features.

While this is well recognized it is not always acted upon. Too frequently the record of a list of symptoms ends with—"a typical case of—".

The enquiry into the course of an "indigestion" should be particularly directed to the determination of:

1. The duration of the attack or attacks.
2. The length of the intervals.
3. Whether the type of the symptoms at the onset are the same as those throughout the attack.
4. Whether the present attack has the same characteristics as the first and all other attacks.
5. Whether the intervals were formerly and now are absolutely free of any abnormal sensations.
6. Whether anything provokes or exaggerates an attack.
7. Whether any change in the routine, in the functional activities, etc., eases or cuts short an attack.

Close cross examination on these points frequently yields sufficient evidence for a provisional diagnosis which further investigations confirm.

Some general statements can be made about the information obtained from such cross examination:

1. An indigestion which begins about mid-life, or an indigestion in which the character of the attacks has changed must be considered as due to a malignant growth until you can prove there is no malignancy.
2. A continued indigestion characterized by an absolute irregularity of attack and interval must be due to a lesion lying outside the main upper tract. It is important however, to check such a history of irregularity by enquiry as to whether the irregularity is due to changes in routine or the taking of palliatives.
3. An indigestion with regularity of duration of attack and interval, but with onset symptoms of a character different from those of the main course of each attack or most of the attacks indicates that the lesion lies without the main upper tract.
4. An indigestion characterized by regularity in the duration of the attack and interval, and with absolute freedom from discomfort in the interval, indicates a local lesion in the main upper tract. If there is not absolute freedom in the interval, close enquiry must be made as to the timing of the discomfort or unease that is felt in the interval.
5. The occurrence of changes in the attacks other than variation in the severity of symptoms indicates that a new factor is acting: Such a factor might be a narrowing of the lumen, extension of the damage through the wall to the peritoneum and adjacent structures, or the onset of malignancy.
6. The indigestion that begins with worry and anxiety emotions and ceases immediately the cause is removed, has no organic basis, but if continued after the removal of the cause, there is a secondary and probably minor cause acting reflexly, such as functional colonic stasis.
7. Indigestion that is eased by soda bicarbonate without consequent belching is due to a local lesion or local spasm in the stomach or duodenum. If relief is only obtained by consequent belching, there is

either no local lesion in the stomach, or partial obstruction has been added to the local lesion.

8. Indigestion in relation to one special article of diet is probably anaphylactic in origin.

The enquiry then turns to the daily cycle for the accurate determination of the time of occurrence of the symptoms. For this purpose the day is divided into six periods: The period between rising and breakfast; the periods of the meal times up to the next meal, in which care should be taken to differentiate the characteristics of the early and late distresses; the period of retiring, and the period of the night.

The period between rising and breakfast is clear of all abdominal distress in uncomplicated "ulcer" and chronic gall-bladder disease. If abdominal distresses do occur, "anxiety indigestion", ileal regurgitation during the night, peritoneal or posterior abdominal wall involvement, carcinoma of the stomach, chronic gastritis, etc., may be the cause.

The time of the distress after the meal directs attention to those parts of the tract which are in the height of activity at that time. To determine which of the active parts is in a state of irritability, the character and position of the distress, the reflex segmental symptoms, the general course, etc., must all be taken into consideration.

The cycle of the next two meals must be worked out in the endeavor to find out if the gastric cycle is disturbed by defects in handling the content or by the presence of a point of irritability in the more or less distant divisions of the tract. The individual symptoms must be carefully inquired into and no reliance placed on hackneyed terms. Full descriptive phrases must be used so as not to confuse "distaste for food", "dread of consequences", etc., with "lack of desire for food", etc.

Many of the symptoms are so often associated with a special muscular action in some part of the tract as to suggest the relation of cause and effect. But I shall confine myself to a short statement of the origin of "abdominal pain" as distinguished from pain arising from skeletal or segmental tissues.

Pain in the abdomen arises in

1. Muscle—by excessive muscular contraction or the stretching of contracted muscle. The pain is not constant, "crampy" or "colicky" when brought on by peristaltic waves, more prolonged when due to a general contraction or to the stretching of contracted muscle as in the so-called "distention pain". It usually occurs or is exaggerated when the part affected is at the height of its usual muscular activity.

2. Peritoneum—when inflamed; the pain being constant.

3. Inflammatory infiltrations, as in the case of lymphangitis and perilymphangitis extending from "ulcer" or carcinoma. The pain arises when the tissue is stretched or pressed upon, and its acuteness is instantly relieved by certain changes in posture.

4. Solid organs, when inflamed and distended. This pain is of course constant, and the patient when indicating its position usually used both hands and speaks of it as being "in there" or "through there".

The final development of the history is for the purpose of revealing predisposing and direct causes, remote or recent.

As a teacher I find it a difficult task to impress students with the significance of the enquiry into family and past history. Patience becomes exhausted when record after record appears with—"father alive and well"; "mother dead of pneumonia, aged sixty"; "patient had scarlet fever at seven years, chicken-pox at nine years", without any qualifications. We are not interested in whether the parents are alive or not. What is of interest is whether they could have transmitted any fault or infection. It is not the self-limited diseases of the patient, but the recoveries from these that are of importance.

Rarely do the records mention the prolonged ailments of infancy that may stunt the development of special tissue or the whole body, or the minor ailments that indicate the presence of those prolonged and recurring low grade infections, whose localizations may cause special damage and which may recur later in life.

In reviewing my records I find several points arising out of the histories of certain groups of cases of indigestion which may be of interest.

In duodenal ulcer cases with symptoms there is usually a clear and definite history. The attacks are clear cut, of weeks or months duration, only rendered irregular by changes in routine or by the use of palliatives. The onset symptoms in any attack are those that continue throughout the attack. The intervals between the early attacks are free of symptoms until the peritoneum becomes involved by the inflammatory process and adhesions. The timing of the symptoms is after the height of stomach delivery, be that one hour or four hours after the meal, and occurs after the same meal every day. With this timing and course, less emphasis need be placed on the individual symptoms in making the diagnosis. In early cases there may be only one symptom, such as "heartburn", "goneness and sinking", "epigastric tenderness", and such attacks may recur for years before the more definite symptoms of duodenal spasm occur.

A search for remote causes in the past histories of cases of ulcer of the stomach and duodenum

has for me been barren of results, and while agreeing with those who believe that ulcer is due to infection, I have not been able to secure evidence in the past history of pre-existing low grade infections in a sufficient number of cases to justify any conclusions, though the family history is often suggestive. The outstanding feature of the histories is the extreme variableness of the symptomatology of gastric ulcer in contrast to duodenal ulcer. This variability I look upon as due to the varying properties of the musculature in the different parts of the stomach, and the peculiarities of correlation. Ulcer may exist in the cardia for long periods of time without or with slight symptoms. It may first attract attention through hæmorrhage or involvement of the peritoneum or the stretch of inflammatory infiltration in the gastric hepatic omentum. If lying close to the cardiac opening we may expect some difficulty in the process of swallowing or relaxation of the cardia, with regurgitations or supersensitiveness, and the occurrence of heartburn.

At the junction of the cardia and the pyloric antrum local contractions may become extreme without severe distress until obstruction develops. The usual description of the symptomatology of gastric ulcer applies to ulcer as it occurs in the pyloric antrum, and it may apply to ulcer in the lower cardia.

The most common organic cause of indigestion is chronic gall-bladder disease, constituting approximately 45 per cent of all the organic causes.

Uncomplicated cases have no distress on awakening in the morning, the discomfort coming soon after the meals when the biliary system is active, but they vary as to recurrence from day to day and from meal to meal. The amount of food taken seems to have more influence than the kind of food, in bringing on the attacks through increasing the work of the biliary system. An increasing desire for food, even to ravenous hunger often precedes the worst attacks and is most frequently noted in those cases of single stone embedded in the pouch at the neck of the gall-bladder.

The course of the indigestion is very prolonged. Usually the severity of the symptoms increases as years go by and quite frequently in the later stages there is little or no comfort in life. In the majority of cases there are no clear cut attacks and rarely is there complete freedom in the so-called intervals.

The symptoms are usually—a sense of fullness in the epigastrium which may go on to an agonizing pressure, of which the patient remarks—"If I could only rip it open I would be in comfort"; epigastric bloating occasionally to such a degree that the outline of the stomach can be readily seen. Belching usually accompanies this discomfort, is evidently intentional, and if it cannot be brought on easily relief is sought by forcing belching through the taking of soda bicarbonate or by inducing vomiting. The stomach is held high, and this is confirmed by the radiographic finding of a "cowhorn" stomach.

The site of the accompanying pain varies according to the situation of the reflex spasms set up in the lower end of the esophagus, stomach and duodenum. The pain in the region of the right shoulder indicates involvement of the liver. Local pain over the gall-bladder region usually indicates a spread of the inflammation to peritoneum or sub-peritoneal tissues. The presence of nausea out of proportion to the other symptoms suggests lower duct involvement with spread to the pancreatic duct and pancreas. The occurrence of mucus colitis in the ordinary dyspeptic is in 90 per cent of the cases associated with gall-bladder disease.

In the past chronic gall-bladder disease was looked upon as a disease of early middle age, but close enquiry fails to reveal in the great majority of cases, a recent and definite onset. Even in those cases where the symptoms are described as beginning with some particular illness, a period of nervous tension, or a pregnancy, one finds that the patient had had slight symptoms without much distress, occurring irregularly at the usual time after meals, and that he had always to be more or less careful of his diet even during the period of the greatest youthful vigor. Going further back the outstanding feature of the disturbance in school days is the occurrence of bilious attacks. Another but much smaller group can be traced back to an acute cholecystitis or biliary infection in young adult life. A still smaller group can only be traced back to the first attack of biliary colic or the rather sudden onset of indigestion.

From a group of this type of indigestion, 185 cases (of which 125 have already been reported) were selected because gall-stone colic, or definite radiographical evidence of stone shadows, or surgical findings—left no doubt as to the gall-bladder involvement. The histories of these revealed that 67 per cent had suffered from frequently recurring bilious attacks in childhood, 21 per cent could not be traced beyond what was, or presumably was, a cholecystitis or an attack of appendicitis, while 12 per cent could not be traced beyond the sudden beginning of indigestion or the first gall-stone attack. When all cases of indigestion diagnosed as due to chronic gall-bladder

disease were included, the analysis changes these percentages but slightly—to 64 percent, 22 per cent and 14 per cent respectively. One thousand cases of all kinds of affections other than those diagnosed as indigestion due to chronic gall-bladder disease, gave a history in only 7.8 per cent of recurring bilious attacks in childhood. Of this 7.8 per cent nearly all spoke of the attacks as being few in number.

In obtaining the information with regard to bilious attacks, a careful distinction was made between migraine or sick headaches, vomiting spells and bilious attacks. None were classified as bilious attacks unless the onset was gradual, with malaise, loss of appetite, dull headache, nausea, etc., leading to vomiting, with slow recovery and a duration of two or more days. No attacks of sudden onset with nausea and vomiting and rapid recovery were included, nor were any of those which began with acute pain in the head, even if not one sided.

I have a firm belief that there is an ileal regurgitation associated with a definite symptom complex. The course consists of attacks, not clear cut in onset. In the early state the duration might be a few days to weeks, in the later stages extending for many months. They usually coincide with periods of over-work and over-tension, and the intervals with a change of routine and an increase in physical exercise. The daily cycle is that the patient wakens tired, miserable and depressed, with some slight abdominal distress in the lower abdomen, especially on the right side. These distresses are usually vague. There is indifference or even distaste for breakfast, with slight gastric symptoms soon after. The patient feels unfit for work because of physical and mental depression. The noon meal is taken with indifference but rarely with distaste, and about two or three o'clock in the afternoon the symptoms abate gradually, with an increasing sense of well-being. There is no desire for the evening meal, and the patient, free of distress, is clear and bright throughout the evening, only to have a recurrence the following day. The taking of a laxative lessens the severity of the symptoms, but does not cut short an attack.

Investigation of these cases by the feeding of barium with the evening meal, and any nourishment that may be taken later shows that 30 per cent or 40 per cent of the barium is in the lower ileum before breakfast, and that there is a lessening ebb and flow in this amount until early afternoon, when all trace of it has passed from the ileum. One might look upon this as ileal delay if it were not that examination in the middle of the night shows that a very small percentage of the barium is in the ileum, also it does not conform in timing, though it does in symptomatology to the ordinary ileal delay.

Ileal regurgitation, as regurgitation may occur in any individual without production of local or general symptoms, just as does regurgitation in the esophagus. The nature of the material regurgitated seems to determine the origin of symptoms in the case of regurgitation into the esophagus, and probably the same holds true of regurgitation into the ileum. The cause of this ileal regurgitation seems to be entirely related to obstruction in the colon beyond and a failure of the local musculature in the ileum.

Ileal delay, when not due to recent operation, has a course beginning with short attacks of a few days, coming on when over-tired or worried; the intervals at first are long, gradually shortening as the attacks lengthen, until the only periods of comfort coincide with complete change of routine, as when on holidays, with much physical exercise; the attacks gradually increase in severity of symptoms but are unchanged in character.

The patient wakens bright and clear; has desire for breakfast, and though tiring more easily than usual, has no particular discomfort until soon after an unrelished lunch. The most pronounced symptom is a heavy distressing lethargy of body and mind—"I am dopey and miserable", "absolutely unfit"; with this may come vague unease or discomfort in the lower abdomen, and minor gastric symptoms. The heaviness lessens slightly during the afternoon; there is no relish for the evening meal, and the discomfort increases in the evening if there is "nervous tension" or an attempt at mental effort.

Enquiry rarely reveals a remote history of an acute abdomen; most frequently the patient can give no other information than that—"I was never robust but was able to do everything", and that one or both parents were nervous and easily exhausted.

In closing I wish to direct your attention to the importance of determining the presence of migraine of the hereditary type in the family of the individual suffering from chronic gastrointestinal disease, and to add my voice to the warning already given as to the bad and even disastrous results which follow upon laparotomy in such individuals.

Five years ago on reviewing the case records of patients who on my advice, had submitted to laparotomy for various chronic gastrointestinal diseases, I found that of those who said they were no better or worse nearly 60 per cent were migraine cases, while of those in whom the re-

sults had been satisfactory, none gave a history of migraine. Since that time I have seen sixty-six patients, who, having a history of hereditary migraine had had the abdomen opened for "indigestion" or abdominal distress. All but two were infinitely worse and these two were approaching the menopause at the time of operation.

Such results as these, taken together with the warnings from many sources should deter a surgeon from opening the abdomen of a migraine patient except where life is endangered by some clearly defined condition, or possibly in the case of a migraine patient who had passed the menopause. It is such migraine patients that provide most of those physical wrecks, who with three, four, five, six, seven, yes, even nine laparotomy scars, are only too frequently seen in the hospital wards.

SOURCES OF INFECTION—CASES AND CARRIERS*

Don M. Griswold, M.D., D.P.H.
Associate Professor of Hygiene State University of Iowa

We hear from time to time of some very weird sources of infection. From one place we hear that letters piled away in a trunk for twenty-seven years was a source of scarlet fever. Now by definition a source is a place in which infectious materials grows, multiplies and increases itself. If we would exclude milk and a few other special conditions, we find that the principle source of infectious material is the case of the disease in the human being. It is there that the infectious agent finds temperature, moisture and soil to its liking and grows luxuriantly during the early stages of the disease.

In fatal, fulminating cases this growth goes on almost unretarded, while in acute infectious diseases of short duration the defensive devices of the body are brought into play and ultimately prevent growth and multiplication. It is evident then that the human case of the disease is the greatest source of infection if we are to measure them either by the amount of infectious material given off or by the virulence of the organisms eliminated. If, then, we propose to institute preventive methods for the spread of infection it is here that we must center our attack for no doubt somewhere around 90 per cent of the cases of infectious diseases and infectious agents come directly or indirectly from another case.

Consider for a moment the spread of measles, and whooping cough. Here we have two diseases in which, unfortunately, the characteristic symptoms of the disease, and the one by which they are usually diagnosed, does not present itself for twenty-four or forty-eight hours after the onset of illness. On the basis of careful field studies some epidemiologists are inclined to think that certain cases of measles and whooping cough give off infectious material for as long a period as five days before the characteristic symptoms of whooping cough or the characteristic measle rash occurs. In studying many outbreaks of these diseases I have come across instances that could only be explained on the basis of this comparatively long period of infectiousness prior to the characteristic symptoms. If then we are going to do anything in the prevention of measles and whooping cough we must segregate those cases at the onset of illness, which is two to five days before any characteristic symptom occurs. All of us with experience know full well of the many mild, or abortive cases of scarlet fever encountered in a busy practice. Let no health officer or health organization flatter themselves that they are getting at the source of the spread of infection as long as these sources are walking the streets. Cases are and will remain for some time to be the most potent source of infection. Mild, missed and abortive cases will long remain more dangerous to the public at large than frank, severe or typical cases. Attention then must be centered around the fact that the largest amount of the most virulent infections comes from cases of disease.

The next most important source of infection is the human carrier of infectious agents. With the exception of the incubatory carrier all carriers are immune individuals. Notwithstanding their immunity to the disease their tissues are a more or less acceptable soil for the growth and reproduction of the infectious agent. The tissues of the carrier are probably not as good soil for the growth and reproduction of the infectious agent as that of a susceptible individual, but it grows there nevertheless.

An individual who is a carrier of infectious agents, while not manifesting the characteristic symptoms of the disease, is an acceptable host from the standpoint of the biological requirements of the infectious agent. The body cells and the bacterial cells live in a sysittic relation. It is, as if there were two elements involved in immunity. One element would be the immunity of the body against the mere presence of the infectious agent. The other element would be the immunity of tissues against the toxic products of this parasitic growth. The susceptible individual

*Read before the Inter-State Post-Graduate Assembly of America, Milwaukee, Wisconsin, October 27-31, 1924.

has neither of these. The carrier has immunity against the toxic products if any are formed, but he does not have immunity against the invasion of the infectious agent.

Infectious agents from carriers are frequently, but not always, far less virulent than those from an active case of the disease as is shown by the studies made in many laboratories. That there is a degree of virulence in organisms from carrier cases is well known, and to this fact alone can be attributed epidemics which carriers frequently cause.

The striking variations reported in the virulence of the organisms isolated from diphtheria carriers attracted my attention some years ago.

The variations were too wide to be explained on any other basis than that we were dealing with two or more factors. Each factor could remain constant within itself but with the varying proportions of each factor as a component of the whole, the results of various investigators were bound to be vastly different and confusing.

The problem was then to unscramble the carriers in such a way that the various factors would be grouped by themselves and could be studied alone.

The grouping which we now use is the result of "trial and error method". It utilizes the information received from the laboratory to its fullest extent and makes it an integral part of the working program of the field epidemiologist. A sound medical or surgical diagnosis is based upon a history, a physical examination and laboratory reports, so are the sound administrative public health measures based upon case records, epidemiological investigations and laboratory reports. If these cannot be correlated and brought into harmony, chaos and confusion results to the detriment of public health.

The classification of carriers used is one that has a basis on all three factors that goes to make up a sound diagnosis.

For the purpose of coordinating the office, field and laboratory studies in diphtheria carriers we have used the following classifications:

1. Incubatory.
2. Convalescent.
3. Direct Contact.
4. Remote Contact.

Experience has shown that this classification is sound in principal and practice. This classification brings the office, field and laboratory studies into closer harmony and cooperation than any other grouping of the facts that we have tried.

Incubatory Carriers

An incubatory carrier is the individual upon whom we have identified infectious agents within the incubation period prior to the onset of the clinical symptoms. Those of us who have taken throat cultures in large numbers know full well that by the time the report returns from the laboratory some children will be found ill with diphtheria. These children carried the organisms for a short space of time without symptoms, hence they are carriers. They developed the disease within the incubation period from the culture taking so they were incubating the disease at that time. They are therefore, called incubatory carriers. Incubatory carriers harbor organisms that are 100 per cent virulent. They have been tested on human individuals and proved so, which is probably better than the test on guinea pigs.

The degree of danger from incubatory carriers is high because of the fact that the bacilli are of disease causing type in all instances.

The length of time of the menace from incubatory carriers depends upon how soon striking symptoms present or on how long it takes the epidemiologist to locate the individual. Well directed epidemiological work on incubatory carriers will materially reduce the amount of diphtheria spread by mild, missed or abortive cases.

All known carriers should be given daily inspection for the maximum period of incubation. By this means the individual who is an incubatory carrier can be segregated at the first rise of temperature or other clinical symptoms.

If he can carry virulent bacilli for a period longer than the incubation period, he is an immune and does not need antitoxin, Schick test or toxin-antitoxin mixture.

Probably all cases of diphtheria might be considered incubatory carriers for that short period between the time they have connected up with the infectious agent and the time the clinical symptoms occurs. If careful throat cultures are made during this time the bacilli will be found and the person is designated as an incubatory carrier. Sometimes on receipt of the laboratory report these cases will merely be the sore throat stage. The etiology of this sore throat having been determined bacteriologically, the case should be comparatively mild if antitoxin be given in adequate doses immediately.

Convalescent Carriers

A convalescent carrier is of course an individual who harbors infectious agents after the clinical symptoms have ceased. These individuals have an immunity to the toxin of the disease but do not possess sufficient bacteriolytic sub-

stance to prevent multiplication of the causitive organism. These individuals are of interest in the spread of infectious diseases chiefly because of their mobility.

Several well directed contagious-disease hospitals and health departments use the following method of releasing persons from diphtheria quarantine.

Nose and throat cultures are made daily after the twelfth day of illness and the patient released from quarantine when two successive sets of these cultures fail to show the presence of diphtheria bacilli.

In a careful study of over one thousand cases released in this way it was found that the stay in the hospital was as follows:

2 weeks	64 per cent
3 weeks	29 per cent
4 weeks	16 per cent
5 weeks	8 per cent
6 weeks	4 per cent
7 weeks	2 per cent
More than 7 weeks	2 per cent

It was striking that it took eight weeks to reduce the number of convalescent carriers to 2 per cent. This is about the proportion found in the population at large.

When this point was reached, virulence tests were made and the patient released, if the organism was found to be non-virulent. Eighty-five to 90 per cent of the convalescent carriers of diphtheria, that we have studied, have virulent organisms and they constitute a real menace to the control of the spread of infections. Our figures show however, that as we recover the organisms further and further from the time of the attack the percent of virulent organisms falls. This study is not ready to report at this time but will be presented later.

Direct Contact Carriers

The direct contact carrier is a carrier who is in direct contact with the case. Although he gets his organisms directly from the case where they are most virulent his immunity is sufficiently high to prevent the development of the disease. This individual usually has a high degree of immunity and if the experience is repeated, comes to have little fear of contracting this contagion. Many physicians and nurses are in this group. I have several times used diphtheria bacilli from my own throat for class-room demonstration. On one occasion I used a meningococcus for class work which I had recovered from my own throat.

Direct contact carriers are always immune and always highly immune. If I had evidence that a person had been a carrier of virulent diphtheria bacilli for a period longer than the incubation period of the disease I would feel that this person was immune as thoroughly as I would if he had a negative Schick test. A direct contact carrier is immune and will not contract the disease until some unforeseen circumstances takes away this immunity, which does not frequently occur.

As a result of careful studies, as yet too small to use for generalizations, it appears that from one-fifth to one-third of all people coming in daily contact with a diphtheria patient will pick up and retain the diphtheria bacillus. The proportion of these people who develop the disease as a result of this is in direct relation to the age group susceptibility.

Where there are no children in the quarantine, the attack rate of the disease is low because about two-thirds of all adults are immune to diphtheria. This means that there is a correspondingly high rate of direct contact carriers. Diphtheria bacilli have been of virulent type in approximately 50 per cent of the direct contact carriers we have examined. They therefore, constitute a real menace to this extent and there should be adequate administrative control.

Remote Contact Carriers

A remote contact carrier is a carrier who has not been in contact with the case but who has obtained his organisms probably from some other carrier. This type of carrier is usually immune but such great reliance cannot be placed on this evidence. If he is harboring virulent organisms for a period longer than the incubation period of the disease he is of course immune.

If, however, the organism found are non-virulent diphtheria bacilli, this finding has little or no significance regarding the immunity of the individual.

Organisms recovered from these remote contact carriers are found to be non-virulent in such a large proportion of cases that they can all be considered non-virulent so far as public health administration is concerned. Meader of Detroit, recently allowed ninety-seven children who were remote contact carriers to return to school and no case of diphtheria developed among the other school children that was traceable to these remote contact carriers. Evidence is therefore accumulating that our great fear of this type of carrier is unfounded by fact. When we are fully convinced of this, we will let this type of carrier go and come without let or hindrance.

To illustrate by an example: After the cases in a certain outbreak of diphtheria were quarantined, cultures were taken of all the school childrens' throats. Of the 330 children only seven

were found to be harboring diphtheria bacilli: A rather small proportion for the season of the year. Of these seven, two developed the disease within the incubation period and were therefore incubatory carriers. There had been no cases of diphtheria among the other five therefore none of these were convalescent carriers.

One of these children was, however, from a family just released from quarantine for diphtheria and was therefore a direct contact carrier. The other four were remote contact carriers.

The disposition of these cases was as follows: The incubatory carriers were showing early symptoms of diphtheria when the laboratory report was received. They were immediately quarantined and given adequate doses of diphtheria antitoxin. In this particular study there were no convalescent carriers, but if there had been, they should have been placed in the modified quarantine provided for diphtheria carriers.

The direct contact carrier was placed in the modified quarantine until the culture would show non-virulent organisms or until two successive negatives could be obtained, twenty-four hours apart.

The remote contact carriers were kept under observation for the incubation period and then allowed to return to school without reference to the flora of their throat.

CONCLUSIONS:

1. Human beings with and without symptoms of any disease are the greatest factor in the spread of infections.
2. Competent follow-up work on carriers will do much in locating mild, missed, or abortive cases which spread much infection.
3. To adequately engage the carrier problem it must be sub-divided into its constituent parts, rather than to outline one administrative procedure for all parts of the problem.
4. The investigation of the contacts of incubatory carriers will yield much information necessary to prevent the spread of infection, because these cases are carrying virulent organisms.
5. The convalescent carrier should be subjected to administrative control because of the high proportion of virulent organisms he carries.
6. One-fifth to one-third of the people in contact with cases of diphtheria in the home pick up the organisms to which they are exposed. One-half to three-fourths of these people are known to be harboring organisms of virulent strain.
7. Remote contact carriers of diphtheria have so little significance in the public health problem that they are included here only for the purpose of completeness. The few of them that are found virulent can be easily explained as having been in contact with mild, missed or abortive cases without their knowledge.
8. More serious study of the outcome of contacts with incubatory carriers is warranted. More control of the convalescent carrier is warranted. More strict isolation of the patient to reduce the number of direct contact carriers is warranted. More leniency with remote contact carriers can be allowed with safety to all concerned.

STENOSIS OF THE LARYNX*

EMIL MAYER, M.D., New York City

Stenosis of the larynx may be due to many different causes as will be noted by a study of the four cases that have come under my observation during the course of years, each being different in origin.

It will be readily seen that each case requires treatment of its own and very frequently your ingenuity will be taxed to the utmost to meet some unexpected obstacle. The treatment of this condition calls forth a great deal of perseverance and patience, now and then some fortitude of the patient.

The end justifies the means here for the reward is great.

Of the four cases that I shall relate all of them recovered and this recovery was permanent in each one.

The first was that of post-typhoid perichondritis:

More than twenty-five years ago I was hastily summoned to see a young woman thirty-one years of age. She was suffering from marked dyspnoea on inspiration. She had had a severe attack of typhoid fever for which she had been treated in one of our large hospitals and had returned to her home ten days previously. Her history had been that of beginning hoarseness in the third week of her illness followed by shortness of breath which daily became more severe.

Immediate tracheotomy was advised and performed by myself within an hour. She was at once relieved and made an excellent recovery. She insisted that she was not going through life wearing a tube.

The condition then present was that of a large swelling covering the entire left of her larynx leaving only a narrow chink for breathing. Her voice was very hoarse.

*Address delivered by Dr. Mayer as the guest of the Iowa State Medical Society before the Section on Ophthalmology and Oto-Laryngology at the Seventy-Third Annual Session at Des Moines, Iowa, May 8, 1924.

A fortnight after the operation I began distension, first using the curved Schroetter tube of the smallest caliber, gradually increasing to tubes of larger diameter until I felt that she would be able to have an adult sized intubation tube introduced.

An adult sized metal intubation tube was then introduced and left in situ. The tracheotomy tube was withdrawn and the wound in the neck closed.

The intubation tube was removed after four days, cleansed and reintroduced. This procedure was continued at longer intervals for a period of nine months, when the tube was finally withdrawn. Her breathing was natural from the first and she never required further distension.

She has been under observation from time to time, was in my office during the last month and during all these twenty-five years she has lived her life without anything to show of her experience except a scar in the neck which she deftly hides with a ribbon and a pending jewel. Her voice is deeper than it was but she was entirely cured.

The second case was the result of a fracture of the larynx resulting from gun-shot wound:

At the office of my dear friend and master, the late Dr. Morris J. Asch, I was asked to see a young soldier who was wearing a tracheotomy tube, who had been sent to Dr. Asch for an opinion as to whether something could be done for him or not. He was a patient in Bellevue Hospital.

This was at the time of the Spanish-American War, and as usual the invalided soldiers received the kindly and loyal attention of visiting ladies. One of these had interested herself in this soldier and secured permission for examination by Dr. Asch with a view to restoring him to health if possible.

The patient, a fine specimen of manhood, aged thirty-four was breathing through his silver tube. His larynx was entirely closed and only slight closure of the opening of the tube caused intense distress.

I noticed an absence of a large part of his soft palate and had him tell his story of what happened.

At the battle of El Caney he was lying prone. A sharp shooter in the trees fired at him and he was struck by the bullet in the frontal bone directly over the sinus. He rolled over bleeding from mouth, nose and ears, was placed on a stretcher and carried back to the dressing station. On the way he was gagging, he felt some flesh protruding from his mouth which he pulled away. Shortly after he was placed on board the hospital ship and transferred to Bellevue Hospital. The diagnosis had been made of a glancing wound over the frontal bone.

In the meantime his respirations became worse and a tracheotomy was done restoring his breathing. He had been in the hospital for a month and nothing further done for him and no other diagnosis made.

It then became entirely clear to me taking under consideration the large hole in his soft palate, as though it had been punched out, that this was not a glancing wound of the frontal bone, but that the bullet had entered from above, crashed through the superior maxilla tearing the soft palate, entering his throat smashing his thyroid cartilage, entered his esophagus and dropped spent into his stomach and passed from his bowels about three months after he was shot.

The diagnosis was comminution of the thyroid cartilages from gun-shot wound.

He was transferred to my service in the New York Eye and Ear Infirmary, where I began dilatation of his larynx leaving the tube in his trachea.

Intubation attempted but was impossible of accomplishment because his air was cut off during attempted intubation. The intubation tube requires the solid stylet for introduction, hence he could get no air when introduction was attempted.

Procuring a large adult tube of hard rubber, I had an introducer made which I here exhibit which was hollow so that introduction could be effected without cutting off air and no haste was necessary for he breathed through tube and introducer during the entire procedure and I could take as much time as I wanted to introduce the tube. He breathed into my hand.

With the tube in position he breathed well but promptly expelled it. I then reintroduced the rubber tube. Heating a piece of metal, cocainizing the opening in the trachea I plunged the heated metal repeatedly against the rubber intubation tube thus marking the exact position of the tube opposite the tracheotomy wound.

The tube came out as usual and I had a hole made in it for a screw-piece attachment made to enter the hole of the tracheotomy opening.

Intubating him again I now introduced the screw-piece into the tracheotomy wound thus firmly holding it in place. This tube which I here exhibit is like the letter "T". It has an ingenious device of a bar of metal which prevents it from turning. This if it occurred would cut off his air. I may here, in passing, say that I was very ably assisted in the making of these devices by Mr. George Ermold who made the original intubation tubes for Dr. O'Dwyer, the American originator of intubation.

The patient could not extubate himself now and wore this tube constantly for many months, it being removed for cleansing and reinserted.

I then removed his tube, closed his tracheotomy wound and exhibited him at one of the meetings of the American Medical Association at Atlantic City as well as at several medical societies, as a patient cured by new and original methods of a most trying and necessarily painstaking nature.

He had been breathing well for two months. One day at my office I discovered a small tag of granulation tissue hanging in his larynx which I removed under cocain. He at once exhibited signs of great distress and said he was done for, in a weak voice. I hastily grasped a scalpel and cut through the old tracheotomy opening and inserted a silver tube for the emergency, he breathed well and I asked him to

return the next day assuring him that this was a temporary set-back. He never appeared again.

Months later I understood why he failed to return. As a cured patient his pension would cease, wearing a silver tube he would receive continuously a large pension regularly for complete disability.

I heard a rumor later that he was living in a balmy clime still wearing his tracheotomy tube but believe that I can honestly say that it was a cure.

The third case occurred following an external operation for tumor:

A Hungarian, male, age thirty-two, had been operated upon for an endo-laryngeal tumor. A laryngotomy was done immediately after preliminary tracheotomy. The tumor was benign in character. He made a rapid recovery but every time attempt was made to remove his tube, his larynx seemed to collapse and he became very dyspnoeic. This occurred repeatedly. He was eventually transferred to my service.

The larynx was roomy, but closure of the opening of the tube resulted in struggles for air.

He was intubated and promptly expelled the tube.

Reintubation with the hard rubber tube using the usual introducer, marking the site of the tracheal opening with the hot wire, a screw-piece was made as in the previous case.

The tube so used is here exhibited and it will be noted that the point of entrance of the introducer is much higher than in the previous case.

He breathed freely through the tube. It was removed at intervals for cleansing and reinserted during the next four months. At first he had great distress when the tube was out and he begged for its rapid return. Later he could wait until we were ready to reintroduce the tube.

At the end of another month from this time the tube was removed, the tracheal wound was allowed to heal and he has been well since then.

The fourth case was that of a post-operative tracheal fistula:

A boy, age eleven, was brought to the out-patient department of the Mount Sinai Hospital, New York City with a fistulous opening in his trachea.

His history was that he had a severe attack of diphtheria three years previously while in France for which a tracheotomy was done.

He wore this tube for a long time when it finally was removed but the result was the fistulous opening. He was referred to the hospital where a plastic operation was done. This resulted in failure and there was a still larger opening than before. Another plastic operation also failed. Finally he was referred to me.

I found his trachea and lower part of his larynx very much narrowed and believed that the failure of the plastic operations was due to this as the efforts at breathing produced violent pressure from within on the newly united parts.

Being a young boy it was impossible to do anything with him except under general anesthesia.

Under ether I proceeded to distend his larynx with the head under suspension. For this distention I made use of the ordinary uterine dilators and forcibly distended the narrowed parts and then introduced a well fitting rubber intubation tube. This was well borne and he breathed naturally.

Each time that the tube had to be removed for cleansing it was done in suspension under general anesthesia and during all this time the tracheal wound was brought together. Finally the outer wound closed while he still wore the intubation tube. The procedure was kept up for six months when the tube was finally withdrawn. His breathing was natural and the fistula no longer present.

It is now eight years since he last wore the tube. He has grown to be a fine healthy young man and apparently none the worse for his long experience.

All of these cases recovering carry with them some important lessons.

They show that the larynx is very tolerant to some very forcible manipulations; that splendid results can be obtained by the continuous wearing of an intubation tube; that each case differs from the others; that patient perseverance and mechanical ingenuity will surmount obstacles that are apparently impossible of achievement, and finally that we as laryngologists may succeed when others fail.

Permit me in closing to express my thanks to you for permitting me to appear on your program thus disarranging the usual course of your meeting.

BENIGN AND EARLY MALIGNANT NEOPLASMS OF THE MAMMARY GLAND*

DONALD MACRAE, JR., M.D., F.A.C.S.,
Council Bluffs

If the treatment of all growths in the mammary gland could be treated successfully by one standard method there could be no excuse for further discussion of the subject.

Even if all physicians had the same diagnostic ability and were capable of distinguishing the benign from early malignancy, there would then be only the difference of opinion as to the method of treatment.

Unfortunately early malignant growths oftimes camouflage their actions to such an extent that it may be impossible for the average doctor to detect its vicious character, on the other hand a simple neoplasm or "lump" may so fool the

*Presented before the Seventy-Third Annual Session, Iowa State Medical Society, Des Moines, Iowa, May 7, 8, 9, 1924.

physician that a mutilating unnecessary operation is recommended.

Bainbridge (Iowa Medical Journal, September, 1922), cites many cases of abnormal or "lumpy" breasts cured by treatment of the tonsils, teeth, correction of pelvic disorders, disturbed endocrine function, syphilis, etc.

This author says, "The profession must develop a higher degree of diagnostic ability than in the past and possess itself of all the essential facts concerning breast conditions".

Therefore with the patient before us for examination—I might ask you:

First—Has this woman an early cancer?

Second—Has she a benign growth?

Third—Has she a "lumpy" breast with no definite new growth formation?

The latter may appear to you (men who attend the meetings of this society) as an insignificant factor in differential diagnosis and yet if the experience of other surgeons throughout the country is similar to that of the writer of this paper, then I would say that hundreds of innocent breasts are being sacrificed yearly. The writer has averaged four to six cases yearly coming to him with a previous diagnosis of cancer, where no tumor could be detected.

Two cases during the past year about to receive radical operation for carcinoma by other surgeons, consulted the writer, who found no evidence of new growth formation. One of these cases, from South Dakota, presented herself just a few days ago at the clinic and was seen by several of the members of this society now present.

Again—fully 15 per cent of the women coming to me have no surgical tumors present in their mammary glands. What would have happened to these women had they consulted a "cancer specialist"?

If all diagnosticians would request the patient not to explain the position of her tumor, not even to tell the side involved and then proceed to examine both breasts carefully it is astonishing how frequently the physician and patient will disagree as to the location of the "lump".

With the flat palm of the hand pressing the gland against the ribs and at the same time gently working the breast under the hand, a real growth if present can be outlined as a hard resisting obstacle. Small soft cysts may be overlooked, but if we follow the teaching of McFarland, little harm can be done.

This authority insists that cysts are never malignant.

If no new growth is found the case is not surgical, neither should it be submitted to radium, x-ray or cancer paste.

The differential diagnosis between the benign and early malignant growths is a more difficult problem.

1. A well defined tumor, not adherent to the skin or pectoralis fascia, freely movable in the gland is probably benign.
2. Two or more tumors in one or both breasts are probably benign.
3. A cyst without a definite resistant tumor formation in attendance is probably benign.
4. A tumor of long standing undergoing no change is probably benign.
5. All multiple cystic formations whether we choose to call the condition "Chronic Cystic Mastitis" (Bloodgood, Arch. Surg., 1921), "Cystic Adenoma", "Schimmelbusch Disease" or "Residual Lactation Acini" are benign and seldom if ever become malignant (McFarland, Arch. Surg., July, 1922).

Early malignant growths of a cancerous nature are seldom freely movable, are more often adherent to the skin or muscle fascia. The nipple is not infrequently retracted even in the early cases, even if not retracted the nipple is sometimes pulled or raised above the normal position as compared to the opposite breast. A cyst formation may accompany the growth.

Early sarcoma is found as a tumor which can only be determined after extirpation, fortunately this is a rare disease.

The writer is more confused when confronted with conditions in which the question of chronic suppurative mastitis is met. Here a fixation is present, not only to the fascia, but ofttimes to the skin. The history of the case plus the presence of pain, which is extremely rare in early carcinoma, is of value in determining the differential diagnosis.

We have already excluded our patient with the imaginary tumor or transferred her to the medical side for further examination and treatment. The patient with the definite tumor now confronts us, what advice shall we give her?

From our observations of the work of others plus our personal experience over thirty years of surgical efforts, good and bad, we now advise our patient as follows: Madam, we believe you are suffering from a condition known as Schimmelbusch disease, we believe with many of our best pathologists, that this is not cancer and never will be, therefore unless some extra development occurs, we would advise you to forget it, go home and be happy. If however, your confidence in us will not permit of this and your life is made unhappy by the presence of the condition and from stories you may be told about cancer, then we would advise the removal of your entire breast.

If our patient has a definite growth, single, movable, with a preoperative diagnosis of a benign character, we advise early removal under local anesthesia, but we remind the woman that we are human and may be mistaken and insist upon her going to the hospital the day before operation to be prepared for a possible radical breast and gland operation. Everything is in readiness the next day for the radical procedure, the tumor is removed and sent at once to the laboratory where the pathologist is prepared to do an immediate frozen section examination. If the tumor is suspicious macroscopically, the wound is left open until the laboratory report is received. If the macroscopic appearance is against cancer the wound is sutured. As a rule by the time the benign report is received the patient is able to walk out a happy woman.

In case the tumor proves to be malignant ether or gas is administered and a most radical operation attempted.

In all cases where malignancy is suspected, the lung and chest are thoroughly examined by the internist and the x-ray department prior to operation; fortunately in the early cases, of which this paper deals, the writer has never found involvement of the chest.

THE LABORATORY PATHOLOGIST AND THE FROZEN SECTION

A few surgeons, exceptionally qualified in macroscopic pathology admit their ability to diagnose every tumor removed, without the aid of the microscope (Bevan, Harris and others, Illinois Medical Journal, August, 1922).

With these few exceptions the writer insists that the breast tumor surgeon is as great as his pathologist, and no greater. A first-class mechanical surgeon may perform an unnecessary mutilating operation as a result of the findings of an incompetent pathologist.

MacCarty (Surg. Gynec. and Obs., August, 1922), of the Mayo Clinic says: "Of 24,368 cases, 21 per cent required a microscopic examination before the correct diagnosis could be made or before scientific therapeusis could be administered. Nearly 7 per cent of the specimens removed at operation were removed for diagnostic purposes before further operative procedures were carried out."

FROZEN SECTION

The practice of cutting out tumors or removing pieces of tissue where cancer is suspicious for slow examinations requiring several days is objectionable and should be condemned except in rare instances.

MacCarty has the greatest faith in the frozen section and says: "The cells are more beautiful than any fixed and embedded cells I have ever seen."

"There is just as much difference between studying such cells and the fixed as there is between studying stuffed bird skins and the birds in the tree."

The writer is attempting to bring out the necessity of team work, but the team should be well matched especially in questions dealing with early suspected cancer.

The first-class practical surgeon may diagnose an acute appendicitis—operate and find a tubal pregnancy or a Meckel's diverticulum and get by with flying colors—not so however, if he should fail to perform a radical operation in an early cancer case, because of the findings of an incompetent pathologist. I am satisfied the fear of cancer mistake on the part of some surgeons is responsible for many mutilating operations, which might otherwise have been avoided had a thoroughly trained pathologist been hitched up to the surgeon.

X-RAY TREATMENT

The writer mentions the x-ray only to condemn it as a treatment for early malignant growths of the mammary gland. Rapid and frequent metastases, without local recurrence, is more apt to occur after x-ray than without.

Until better results can be shown the writer wishes to go on record against the use of the shot gun x-ray—before or after the radical surgical operations for carcinoma of the mammary gland in its early stage.

Radical surgery in early cases in the hands of competent surgeons shows a record of from 60 to 75 per cent cures.

CANCER OF THE BREAST

Group 1. Not X-rayed after operation.
Group 2. Scar X-rayed lightly.
Group 3. Intensively X-rayed after operation.

Tich in Marburg.	Group 1 (1904-1914)	Group 2 (1914-1917)	Group 3 (1918-1919)
Total number	62	61	11
Recurrence within 1 yr.	7 (11.2%)	23(37.7%)	5(45.5%)
Metastasis developed	3 (4.8%)	7(12.1%)	2(18%)
Recurrence within 1 yr	20 (32.2%)	37(60.6%)	
Free of recurrence after 3 yrs.	24 (38.7%)	23(37.7%)	
Free of recurrence after 5 yrs.	13 (20%)	19(31.8%)	
Perthes in Tubingen.	**Group 1 (1910-1912)**	**Group 2 (1913-1916)**	**Group 3 (1916-1918)**
Total number	130	144	72
Recurrence within 1 yr.	37 (28.0%)	55(38.2%)	30(41.0%)
Recurrence within 3 yrs.	62 (47.5%)	78(54.2%)	
Metastases without local recurrence	14 (11.0%)	18(12.6%)	13(18.0%)
Free from recurrence after 3 yrs.	50 (38.5%)	44(30.5%)	Multiplicity
Free from recurrence after 5 yrs.	36 (27.7%)	5(20.3%)	of internal metastases
Free from recurrence after 6 yrs.	32 (24.6%)	5(20.3%)	very marked.
Kastner in Leipzig. (Payr's Clinic)	**Group 1**	**Group 2**	**Group 3**
Total number	69	22	42
Recurrence within 1 yr.	33%	36%	47.6%

Therefore Payr for the time being dispensed with the X-ray.

Discussion

Dr. Hubert A. Royster, Raleigh, North Carolina—I am very glad indeed to make a few remarks upon this judicious, fair, and thorough paper. I find myself in almost perfect accord with Dr. Macrae, so much so that my experience has run practically parallel to his. I agree with him about the x-ray; it should certainly never be used before an operation and rarely afterwards. I say rarely, because it seems to me that some of those disappointing results that we have had in the use of the x-ray following operation have occured because we have only used the x-ray in the very late cases in which we expected recurrence. I also find that my experience runs with that of the essayist as to the number of cases that are sent for operation for cancer of the breast or any other growth, when there was no tumor at all. It is a strange thing to me how women will suspect tumor in the breast when there is none, and either not recognize it or hide it when there is a real cancer present. It is the most remarkable piece of psychology I know of. If a woman thinks she has a cancer she will hide it, but if she has no reason to suspect the presence of cancer she will imagine she has one. The cause of it is this: Most human beings go to doctors because they have pain and for no other reason; and pain is not an early symptom of cancer, but an early symptom of the benign growths. I sometimes wish that Providence had made pain an early symptom of cancer; then we would be able to cure about 90 per cent of them. The remark was made by Park that cancer is a symptomless disease. In most cases there are no symptoms at all until the patient is about ready to die. Therefore we must recognize the possibility before the growth becomes a cancer; because there was a time in every cancer when it was not a cancer. Cancer usually begins in a benign growth or some cell which was not pathological at the start. One of the greatest aids to the palpation method is to have the patient lying on a table instead of sitting up. Bloodgood called attention to that about two years ago, and it is one of the most helpful things I know of. When women are sitting erect you can find "tumors" in most all breasts, the overhanging area compressed between the fingers giving the sensation of a neoplasm; but when the patient is lying on her back and you lightly palpate the breast against the ribs, very often you will see the "tumor" disappear. The methods of palpation suggested by Dr. Macrae are the accurate ones. I do not know that I can go the whole length with him in regard to frozen sections. MacCarty does not claim any experience in macroscopic pathology. I would not say, with Dr. Harris for instance, that a surgeon is his own best pathologist, but I believe the cooperation of the two is the best method. However, I believe more and more that every surgeon should train himself to use his naked eye upon tumors as he uses his naked ear upon the chest, and that, until we get to the point where we can say in a large percentage of cases, this is carcinoma and this is not, we are going to fail to diagnose these cases in an early stage.

Dr. William Jepson, Sioux City—We are very much indebted to Dr. Macrae for bringing this interesting topic to us for consideration. It certainly is of interest to every one when we recall the fact that about one in ten (9.1%) of all patients dying of cancer, die of cancer of the breast, and when we further remember that physiologically the breast is nothing but a piece of redundant skin hanging on the anterior thorax, of which eighteen or twenty sudoriparous glands have been so modified that under proper stimuli they will secrete milk, and the epithelial cells of which under certain stimuli will go on and develop cancer. I have been restricted, and quite properly, to consideration of the early appearance of cancer in the mammary gland. I may say frankly that I would not always be able to recognize whether a definite tumor was malignant or not. However, if I considered them all cancerous I would err only fifteen times out of every one hundred, because that probably is the percentage of malignant growths in patients past the age of forty that are not cancerous. Dr. Macrae has very clearly pointed out the fact that there is no way of making a positive diagnosis without a microscopic examination. In other words, when we find a growth, whether or not it appears to be malignant, it must be sectioned thoroughly, not a little piece off one side here or there which may possibly be the part that is benign, but sectioned throughout, because many of these tumors happen to be possibly primarily benign and secondarily become malignant. I think we may say that the majority of these tumors that occur in patients under forty-five are absolutely innocent. But they carry in them the potentiality of malignancy later in life. When that tendency occurs, they may or may not be removed at the predilection of surgeon or patient. The doctor should be honest and say, this may or may not be malignant, but if malignancy develops it will be evidenced by somewhat rapid and increased growth. The so-called senile changes in the breast that make themselves manifest in the condition known as chronic cystic mastitis or multiple cystic tumors, any one should be able to recognize, and I am sure most of them are innocent. And, by the way, I may say in passing that Professor Ewing, a good pathologist, has recognized in cases of so-called mastitis at least 45 to 50 per cent of malignancy. In conclusion I wish to say: (1) As Dr. Macrae has pointed out, if a growth is malignant there is only one way to treat it, and that is by complete removal not only of the primary tumor, but of the possibly involved lymph nodes. (2) If now and then you should happen to make the mistake of removing a breast with an innocent tumor instead of a malignant one, although the region may have been somewhat mutilated, I do not think that is half as bad as to allow the case to go on to malignancy.

Dr. W. W. Bowen, Fort Dodge—If I understood Dr. Macrae correctly, he said there was a certain

proportion of these so-called non-malignant tumors of the breast in which he would advise the women to go home and forget all about it. If that is the way he does, if that is the general way that the doctors of this state will do, we will have a marvelous increase in the deaths from cancer. The position I take and that nearly every other surgeon takes on this point is this: That every tumor of the breast should be removed whether malignant or not. We know that the large majority of simple lumps in the breast are adenofibromata, and we also know that a large proportion of those, if left long enough, will become malignant. As to the other tumors, the simple mastitis and the various kinds of cysts, a certain proportion of them become malignant. If we operate early, before the growth becomes malignant, we have not performed a mutilating operation, we have not added very much in the way of morbidity, the patient is well in a few days, and there is no danger of malignancy. As to the use of x-ray, I think that this subject is all in the air now because there is no standardization of the method of using x-ray. I believe that if Dr. Macrae x-rays his tumors of the breast today and operates them tomorrow, he will increase the recurrences; if he x-rays them today and operates in two weeks from today, he will have a decided decrease in the number of recurrences. Also I am convinced, and I think it is the consensus of opinion of those connected with clinics, that x-ray treatment before and after operation, properly applied, certainly does decrease the recurrences of cancer. Dr. Jepson has made reference twice this afternoon to a thing that I do not conform to, and that is that half of the mortality in cases of cancer occurs in cancer of the breast and of the uterus. This certainly does not conform to my experience. I find more cases of cancer of the stomach than I do of the breast and the uterus combined. And, strange as it may seem to most of you, in the last ten years, since I have learned how to diagnose carcinoma of the esophagus, I have found more cases of carcinoma of the esophagus even than I have of carcinoma of the cervix.

Dr. Charles J. Rowan, Iowa City—I think that this subject is very timely, especially since the papers of some very prominent men, especially one by Dr. Bloodgood and recently published, do not seem to have been properly understood. Dr. Bloodgood is very careful in his writings and it seems to me his statements should have been understood, but many men have taken him to mean that as a benign tumor or a cystic mastitis is not at all likely to become a carcinoma, therefore we should not be as careful about the removal of significant lumps in the breast. We must remember that Dr. Bloodgood is more experienced than the average man in dealing with these cases, and even he is very careful, unless quite certain that he is dealing with an inflammatory condition, to advise an exploratory incision, and, if the growth turns out to be benign, to do a simple excision, and do a radical operation if malignant. In dealing with tumors of the breast, I believe that at the present time the most important factor is to insist that every distinct localized swelling in the breast should be an operative case, because the greatest gain we are going to make in decreasing the number of recurrences of carcinoma of the breast is by early operation. But if men get the idea that these tumors probably are not malignant, that the teaching is wrong that benign tumors are likely to become malignant, then they are going to presume on that assumption. And I think we already have seen some results of this teaching, in that doctors are more likely to figure on Bloodgood's statement that there is not much tendency for a certain benign tumor of the breast to become malignant. However, many are beginning to realize that an early carcinoma may so closely resemble a benign tumor that it is impossible to make the differential diagnosis. I agree altogether with everything Dr. Macrae has said, with the exception of his remarks with reference to x-ray treatment. I cannot go quite as far as he does in that. A study of the various statistics such as those of Bloodgood's has led him to say that a breast containing a Schimmelbusch cyst is less likely to develop carcinoma than a normal breast. I am referring to this statement simply to show how statistics may deceive. It is not reasonable to conclude that just because of the presence of a Schimmelbusch cyst the breast would be less likely to develop carcinoma than the normal breast. I mention this in connection with Dr. Macrae's statements regarding the use of the x-ray. I agree with him as to the inadvisability of treating early or operable carcinoma of the breast by x-ray. I would like to be able to condemn this practice just as strongly as he does. I also feel as he does about the preoperative treatment of carcinoma of the breast, but I would not go as far as he does in postoperative treatment. Now, if the statistics of my cases in the last few years were gone into, I am sure they would show the same apparent results: That cases wherein the x-ray was used developed a greater number of recurrences, and earlier recurrences, than otherwise. But that is explainable. After operation for carcinoma of the breast, if microscopic examination shows any metastases in the axilla I insist on having post-operative x-ray treatments. And if macroscopically it is evident that there are metastases of the axilla, especially in those cases in which the glands are large and fixed, naturally I insist that this patient receive more intensive x-ray treatment. To what does that lead? If the cases which have no demonstrable metastases either macroscopically or microscopically do not receive x-ray treatments, naturally they will have fewer recurrences, for they haven't any metastases to recur. If those cases in which metastases of the axilla can only be demonstrated under the microscope receive mild x-ray treatment, they will show more recurrences than those that do not have x-ray treatment.

Dr. Macrae—I think Dr. Rowan misunderstood me. I certainly agree with him that all real neoplasms large or small should be removed from the breast

and examined by frozen section—the earlier the better. If Dr. Bowen considers multiple cysts or Schimmelbusch conditions as neoplasms then he should remove whole tract. I have no objections to this but do not believe they are malignant, in fact, they are not new growths. I am opposed to the removal of any part of the breast where no real tumors are present. I object to radium and x-ray or anything else, except the knife in dealing with early malignancy or simple tumors of the breast. The legitimate element of the profession should call a halt on all this x-ray and radium nonsense, which would be of a joke nature were it not so serious in its end results. I refer only to early cases of malignancy of the breast. X-ray and radium have their place, but not in early malignancy of the mammary gland.

THE DIAGNOSIS AND MEDICAL TREATMENT OF GASTRIC AND DUODENAL ULCER*

Wm. H. Rendleman, M.D., Davenport

To the credit of the surgeon with his opportunity of demonstrating living pathology on the operating table we have learned that hyperchlorhydria, gastralgia and gastritis are usually ulcer. In the absence of cancer and ulcer, pain is seldom encountered in stomach disorders. The surgeon has also shown that duodenal ulcer, supposedly rare, is by far the most frequent one. To the credit of the roentgenologist we are now able to diagnose with precision the presence and location of ulcers the symptoms of which may give only a suspicion of ulcer. The surgeon and roentgenologist together have given to the clinician during the last twenty years a knowledge of ulcer far greater than the sum total known previous to this time.

The diagnosis of gastric and duodenal ulcer of former years consisted in obtaining at best a poor history, the making of a physical examination the results of which were unsatisfactory, and the carrying out of an extensive series of laboratory tests on the stomach contents. At present the history and x-ray examination give us data far more reliable while the importance of the physical examination and stomach analysis has become almost insignificant. The modern methods have added more responsibility to the diagnostician in that he must be an expert in roentgen ray interpretation. He should either do his own fluoroscopy or work in such close cooperation with the roentgenologist that he can be present at every fluoroscopic examination. The ideal it seems to me is for the clinician to do his own fluoroscopy providing he has sufficient stomach work to keep him well trained in this specialty. From this please do not infer that I recommend every general practitioner to attempt it. The x-ray as is generally used today is far more misleading than helpful. It requires years of experience and as much skill as is required in any specialty of which I have any knowledge. It took me five years to diagnose my first ulcer with the x-ray. Since then it is comparatively easy. I have seen peristaltic waves demonstrated as ulcers and what is worse, patients have been operated for the same reason. This will continue as long as anybody and everybody is making the interpretation. The roentgenologist with little stomach experience is no more able to make a correct interpretation of what he sees. The one most capable of making a correct x-ray diagnosis is the clinician with a large amount of stomach work who has done or watched the x-ray examination and followed the cases requiring surgical treatment to the operating table. The fluoroscope is to me most useful and should be supplemented by a few plates. To depend on plates alone is very misleading.

In dwelling on the importance of the x-ray I do not wish to minimize the value of the history. This must be properly obtained or it is worthless. Most ulcer patients have been the rounds and have become pretty well educated regarding the symptoms expected in ulcer until they unwittingly give a history that is misleading. As pain is the symptom most frequently complained of it is important to know the time of appearance, duration, what causes, what relieves and the periodicity of attacks. Most ulcers have existed for several years before a diagnosis is made. There is a previous history of symptoms beginning usually between the ages of twenty and forty which last for a few months most commonly in the spring or fall with intervals of several months of freedom from pain. This history of periodicity is the most characteristic of all and serves to differentiate it from gall-bladder infections and from pains of gastrospasm in chronic appendicitis and cholecystitis. The pain is seldom unbearable, is a gnawing, burning pain in the epigastrium, comes one to four hours after one or more meals of the day depending somewhat but not altogether on the location, is worse after a heavy meal, and is relieved by eating or taking alkalies. The significant feature is its punctuality. With the same meals on different days the patient can predict to an exactness the time the pain will appear. The time of appearance will vary with a modification of the diet. Moynihan has pointed

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out what he calls the "Rhythm of Pain". In gastric ulcer it is food, comfort, pain, comfort. The pain which appears shortly after eating disappears before the next meal. In duodenal ulcer it is food, comfort, pain, the pain lasting until relieved by the next meal. From the history alone duodenal ulcer can usually be diagnosed. With gastric ulcer the difficulty is much greater. Moynihan says a positive diagnosis can seldom be made except by the radiologist and by the surgeon at the operation table. Pain is usually not referred to any other region except at times to the back near the spine and below the left scapula. The patient is so sure of the pain following a meal that in spite of his ravenous appetite he eats barely enough to sustain him. Pain which awakens the patient regularly at a certain time of night is quite characteristic of a duodenal lesion.

The causes of distress in ulcer are probably variable. Muscular contractions and increased gastric tension are no doubt factors at times. Probably the most important is the action of free HC1 on the sensitive nerve endings. Free HC1 is practically always present and increased at the time of the pain. The increase in intensity during digestion parallels the increase in the concentration of free HC1 until at its greatest severity the HC1 is at its height. Sippy emphasizes the following characteristics of the distress.

1. It is absent when the stomach is normally empty (5 to 50 c.c. gastric juice).
2. It appears at an appreciable time after eating.
3. It is relieved by taking food.
4. It is relieved by alkalies.
5. It is associated with an adequate free HC1 content.

Distress that does not conform to these clinical facts is seldom due to ulcer. It never begins immediately after a meal and never lasts after the stomach should be empty unless there is retention from pyloric obstruction. Local tenderness may or may not be present. Heartburn, sour eructations and belching are common. The appetite is good. Vomiting may occur at the height of the distress, especially when there is retention from pylorospasm or organic obstruction, giving immediate relief. Hematemesis is of considerable value when present. Blood in the stools may give the first indication that the patient has ulcer. Likewise perforation sometimes occurs when there have been no previous symptoms. A typical history thus obtained is usually verified by the x-ray but unfortunately the history is often atypical leaving one in doubt as to whether the symptoms point to the gall-bladder, appendix or stomach. It is in these cases that the x-ray has proved its greatest value.

The direct x-ray signs, when present, are as pathognomonic of ulcer as a positive Wassermann is of syphilis. These are the demonstration of a crater, hour glass deformity and deformity of the cap. Besides these are the indirect signs, incisuria, six hour residue, hyperperistalsis, absence of filling of the cap, and localized tenderness which when taken together with the history give a fairly positive diagnosis.

Analysis of the stomach contents is of value mainly in determining the motility or emptying time of the organ. The presence of food eaten the day before or considerable residue seven hours after a full meal would indicate obstruction of the pylorus. Associated with this there is usually a high acidity and often sarcinæ. If blood is present and traumatism from the tube can be ruled out a valuable point is made. I cannot see much importance in finding occult blood in the stomach contents where it is so easy to get slight bleeding from the examination. As to an increased HC1 content it is not worth while to estimate as it is of interest only to know if free HC1 is present which is of value in differentiating from carcinoma. I do not make a stomach analysis as a routine on all my stomach patients.

Stool examinations are important to determine when the ulcer has stopped bleeding, which is usually prompt after treatment has begun. In ulcer without clinical symptoms other than anemia, the constant finding of occult blood may point to the diagnosis of an obscure lesion.

The therapeutic test is of great value to me in making a diagnosis. When in doubt I have usually been able to make a definite diagnosis by putting the patient on hourly or two hour feedings with an alkali between. Rare indeed is the ulcer that fails to be relieved unless there is some serious complication like perigastric adhesions, pyloric obstruction or a beginning malignancy. Observation for a few days in the hospital on a normal diet may be necessary to confirm the history obtained from the patient. This will be of much value in doubtful cases.

The accurate diagnosis of ulcer necessitates the determination of the presence and nature of complications. Among these pyloric obstruction is the most common. Pyloric obstruction means duodenal obstruction as it is not very common for gastric ulcer to involve the pylorus. This complication may be considered present when any of the following conditions are found: 1. Vomiting of food eaten the day before or of large amounts of gastric juice. 2. Removal of a seven hour meal showing food. 3. A six hour residue

after the barium meal. 4. Visible peristaltic waves.

The most important complication and the one requiring decisive action is that of acute perforation. A patient with a previous history of ulcer symptoms who suddenly has acute excruciating pain in the upper abdomen causing the patient to double up like a jack knife and having marked muscular rigidity with a disinclination to be touched or moved, presents a picture not often forgotten when once seen.

Chronic perforation, hour glass stomach and perigastric adhesions can be diagnosed by the x-ray. Acute hemorrhage produces a sudden anemia with pallor, weakness and air hunger, which is accompanied by hematemesis or melena. Secondary carcinoma should be suspected when the x-ray shows a large crater, when there is continuous presence of blood in the stools and distress that is not relieved by medical treatment. A palpable mass is most likely a carcinoma, although this sign may mislead, as chronic perforating ulcer may cause the same. To my mind the teaching of the great frequency of carcinomatous degeneration of ulcer has been much overdone. Most carcinomas I have seen gave no ulcer history and in the time I have had to follow my ulcer cases not one has so far become malignant. Like the rare occurrence of a uterine fibroid undergoing carcinomatous degeneration the possibility of the same change in ulcer gives the surgeon a talking point in favor of operation.

Ulcer must be diagnosed from cholecystitis, chronic appendicitis, hyperchlorhydria and carcinoma. Cholecystitis and gallstones frequently give a history of previous acute infections like tonsillitis and typhoid, or pregnancy, which were soon followed by pain in the right upper quadrant. The pain, usually more severe, has not the definite relation to eating, does not appear at a regular time after meals, is not relieved by eating, soda or the emptying the stomach. Jaundice, fever and leukocytosis are in favor of gall-bladder. In chronic appendicitis with pylorospasm and hyperchlorhydria there are not the periods of activity and remissions already ascribed to ulcer. In the diagnosis of cancer one cannot rely on age. I see more ulcers after fifty than carcinomas. Some will be illustrated in the slides to be shown. Most patients with carcinoma give a history of only a few months' duration without previous stomach symptoms. The onset is so gradual and the general symptoms may so overshadow those of the stomach as to make obscure the real seat of trouble. Pain and vomiting are not prominent features unless there is obstruction to the pylorus or cardia. The course is progressively downward, there being no periodicity of symptoms as in ulcer. A tumor is usually, but not always, malignant and the absence of free HCl is an important finding. The x-ray nearly always shows the characteristic filling defect.

Many aged ulcer patients with pyloric obstruction have been allowed to die because at their age it was considered malignant when a simple gastroenterostomy would have given complete relief. The ulcer in these cases may have been healed for many years, the resulting scar finally closing the pylorus.

There exists a close relationship between ulcer, cholecystitis and appendicitis. Ulcer or cholecystitis following appendicitis is too frequent to be a coincidence. Many patients have had all three, beginning with an attack of appendicitis in early life.

Is an ulcer ever healed and what is the evidence? Deaver has said he never saw a healed ulcer. Matthew Stewart, professor of pathology in Leeds University, made a study of 602 post-mortems made in Leeds Hospital in the year 1921 and found forty-nine unhealed ulcers and the scars of twenty-four healed. When it is considered that a healed ulcer leaves a scar only if the muscular coat is involved it is evident that many more than the twenty-four had healed but left no scar. No doubt multitudes of acute ulcers heal without symptoms and without scar. Stewart concludes that healing is a common event in both gastric and duodenal ulcers.

When is an ulcer healed? This we cannot say. For practical purposes if a patient goes without distress or bleeding for two or three years and the fluoroscope shows disappearance of the crater with restoration of the normal outline of the stomach, passing of the peristaltic waves through the ulcer area and absence of local tenderness, we may consider him cured. If later he has recurrence of ulcer symptoms is it not reasonable to suppose he has a new ulcer resulting from the original cause or perhaps from a different cause?

For several years in treatment I have followed as well as circumstances would permit the principles laid down by Dr. Sippy. As yet I see no reason to change. Most failures have been in cases where it was impossible to carry out details. To Sippy we owe more than to anyone else the confidence that is now accorded the non-surgical management of ulcer. But for his persistence in upholding the medical treatment based on the results of his wide experience we would still be groping in the dark for a method to which we could hang our faith. Whether or not the ideal has been attained we at least have a method which

when accurately followed puts gastric and duodenal ulcers among the most satisfactory of serious diseases the physician has to treat. There should not exist the feeling that ulcer is to be treated medically or surgically, either one to the exclusion of the other. It must be recognized that in any given case both methods may be required to give the patient his best chance for recovery. Certainly all operated cases should be given the benefit of a carefully regulated diet, one recognized as appropriate in the non-surgical management of the disease, for weeks or months after operation. Gastroenterostomy, the most common surgical procedure, can at best only offer better drainage which must be supplemented by measures to reduce and neutralize the gastric juice. While most ulcers will heal by medical management it must be admitted that many will not and it becomes necessary to employ surgical means. Each case has its own problems and should be treated individually by those methods which meet the indications best.

In any form of management physical and mental rest are essential. Especially is it important that the patient have mental rest and freedom from responsibility. This does not necessarily mean confinement in bed as ambulatory treatment may give more mental quiet than bed rest. Most cases require two to four weeks in bed which reduces the food requirement to a minimum giving the stomach more rest.

Ulcer of the stomach and duodenum differs from ulcer elsewhere in that the digestive action of the gastric juice must be taken into account. Whatever the primary cause of ulcer, whether it be an embolus or other factor lessening the local resistance of the tissue the ultimate and important factor is the digestion of the weakened cells by the gastric juice. In the cure of this condition we are not dealing so much with remote causes or with what might have caused the initial damage which probably in other parts of the body would be insignificant but rather with a serious complication the results of local conditions.

Assuming that an ulcer is caused and prevented from healing by the digestion of the necrotic and undernourished tissue of the stomach wall due to the action of pepsin in the presence of free HCl it becomes necessary to give a diet that will leave the stomach quickly, stimulate as little flow of gastric juice as possible and to administer alkalies to neutralize the acid formed. The details of the Sippy treatment which may easily be found in the literature will not be discussed here. I have modified the method to apply to those cases where it was impossible to go to bed and have often succeeded very well by allowing the patient to continue his work. Diet and alkalies should be continued for a year or more. In the beginning of treatment it is important to aspirate the stomach at times in the afternoon and evening to determine if the acid is actually neutralized. Pain and distress should disappear at once. If not gone within a week and hypersecretion is ruled out by the tube one may doubt the diagnosis of ulcer. Treatment requires close attention to details. It is hardly fair to blame the method for failure when in nine cases out of ten as it is usually carried out it is modified beyond recognition. The surgeon gets the medical failures, not the cures, and the majority of all failures have never received a thorough treatment by any medical regime.

In the obstructive type of ulcer which is due to spasm or inflammatory exudate, medical treatment will relieve the obstruction in the large majority of cases within two or three weeks. The principle of diet and alkalinization applies here as in the non-obstructive type except that to obtain neutralization it is necessary to increase the alkali and to lavage the stomach in the evening to remove accumulations of food and gastric juice, assuring the stomach of rest during the night. Only when the stenosis has become firmly organized will it be necessary to operate.

Acute hemorrhage is controlled by absolute rest, morphine and fasting. Alkalies frequently repeated and in sufficient quantity to completely neutralize the acid will prevent digestion of the clot at the seat of hemorrhage. In this way hemastasis is aided. Chronic oozing is treated no differently than chronic ulcer.

Foci of infection should be eliminated as far as possible with due regard to the fact that it will usually do no good and may do harm when carried to the extreme as is often seen in the wholesale removal of doubtfully infected teeth which are later sadly missed by the stomach in sore need of well masticated food.

From the internist's point of view I would give the following indications for surgery: 1. Suspected carcinoma. 2. Complete obstruction of the pylorus. 3. Incomplete obstruction which has failed to yield after two or three weeks of medical care. 4. Repeated or continuous hemorrhages as determined by stool examinations. 5. Acute and chronic perforations. 6. Any ulcer after thorough medical treatment has failed.

That surgery is not the last word in treatment of the uncomplicated ulcer is evidenced by the fact that methods of technique are constantly changing. One operation is in vogue for a while and then another. Many gastroenterostomies must be undone. After a while many patients

have their symptoms recur. Sometimes a gastrojejunal ulcer forms from the action of the gastric juice to which the mucosa of the jejunum is unaccustomed. The operative mortality is of serious consideration. This ranges between 2 per cent and 8 per cent with the best surgeons. It must be admitted that the mortality among operators at large must be greater. It is likely that stomach and duodenal ulcer will remain a borderline disease and the sooner all prejudice is eliminated by both surgeon and internist the earlier will the patient receive the best treatment modern medicine has to offer.

THE ETIOLOGY AND SURGICAL TREATMENT OF ULCER OF THE STOMACH AND DUODENUM*

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From the earliest times it has been recognized by clinicians that these ulcers occur in patients who are suffering from other diseased conditions, and in consequence all sorts of causal connections have been proposed. Based upon these observations experiments by various men have disclosed the fact that ulcers may be produced in manifold ways, but that certain factors seem to be always present. Ulcers always occur in localities whose secretions are normally alkaline, but which are exposed to acid solutions coming from farther up in the digestive tract. This acid is ordinarily neutralized by the alkaline food or by the alkaline secretions. That this is not the only causative factor is evidenced by the clinical observation that ulcer may be accompanied by excessive, normal, or diminished acid, or normal or diminished alkaline secretion.

It has been shown that acute ulcer may be produced experimentally about as easily by attacking the favored locality through the circulation as by way of the lumen of the bowel. Locally traumatism from violence, corrosives of many varieties, acting directly in the form of caustics, and artificial obstructions of the intestinal current, have produced ulcers which do not seem to differ materially from those which appear following the injection directly into the blood stream of various poisons like mercury and arsenic or of bacterial cultures. These experimental ulcers have the same characteristics as the clinical varieties, erosion of epithelium on the surface with extension of the process to the deeper structures causing more or less hemorrhage. Bacterial infection is present in the eroded area which is surrounded by inflammatory swelling.

The appearance of ulcer during the course of infections of almost all other parts of the body has led to the theory of bacterial infection as a cause and many experimenters have worked on this basis. In particular the reports of Rosenow and Nakamura published during the last few years are highly suggestive. Rosenow believes that he has shown that streptococci attack different tissues of the body in proportion to their degree of virulence, and that at the same degree they always attack the same tissue. That is to say that endocarditis, arthritis and ulcer are caused by streptococci differing only in viciousness. His experiments show that cultures taken directly from the ulcer and injected into the blood stream of rabbits will cause similarily situated ulcers in the great majority of cases. Nakamura has reported that the tonsils of all people seem to contain streptococci, but that they produce ulcer when injected in but a small percentage of cases, unless the patient from whom the tonsil has been taken is suffering from ulcer. In this event the percentage of ulcers rises to seventy or more, which would seem to be more than a coincidence. Rosenow has produced ulcer in the great majority of animals injected with streptococci taken from an infected tooth of an ulcer patient. While some investigators have not been able to duplicate these findings it is quite evident that focal infection may play a very important part in the etiology. A corroborative fact is the commonly noticed association of ulcer with infections of the gall-bladder and appendix, which we have come to regard as definitely focal in origin.

While acute ulcer has been produced by many methods, it is noticeable that they occur only in the part of the gastrointestinal tract which is exposed to acid. These ulcers tend to heal spontaneously, instead of changing to the chronic form. There has been little success in the experimental production of typical chronic ulcer until the work reported by Mann and Williamson. Working on dogs they attempted to prove the relation of lack of protection from normal alkaline secretions to the occurence of ulcer. Spontaneous ulcer in dogs is rare, so that its occurrence in these tests is valuable evidence. "Four series of experiments were performed. In the first series the duodenum was removed, thus eliminating the portion of the intestine which had most to do with producing the necessary alkali to neutralize the acid. In the second series the pancreatic and bile ducts were transplanted to the terminal ileum, thus eliminating the value of these

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secretions in neutralizing the gastric juice. In the third series the duodenum was removed, and the pancreatic and bile ducts transplanted to the terminal ileum. In the last series the duodenum was cut away from the stomach and made to drain its own secretions and that of the pancreas and liver into the terminal ileum. Under these conditions, which diverted the secretions which normally neutralize the gastric juice as it leaves the stomach to another portion of the intestine removed from the point of emergence of the acid, typical chronic or subacute ulcer, quite comparable pathologically to that found in man, developed in the intestinal mucosa just adjacent to the gastric mucosa in a high percentage of cases."

Some of the ulcers yielded characteristic streptococci which in pure culture produced ulcer in other animals in the majority of cases.

These results seem to apply more particularly to duodenal ulcers, which differ in many ways from the gastric variety. Gastric ulcer is far more frequently associated with diminished acidity than is duodenal ulcer. It is very rare to find complete absence of acid in the latter variety although it is comparatively common in the former. Acute gastric ulcer is produced by anything which weakens the resistance of the mucosa. Local injury from external violence is rarely a factor, but toxemia producing hemorrhage in the stomach wall is frequently followed by acute ulceration. The ulcers produced by Rosenow were at the site of infarctions produced by blocking of blood-vessels by his specific streptococci. In the bowel it seemed to be necessary to diminish the alkalinity to produce ulceration, and it is possible that further investigation will show that there are similar factors involved in the stomach. The distal portion of the stomach and the first part of the duodenum seem especially suited to infarction as the small arteries penetrate the wall in a very oblique direction, lending themselves much more easily to obstruction.

I am inclined to believe that ulcer is caused by the infarction of streptococci with a special affinity for the stomach wall, in an area deprived of resistence by decrease of its normal alkalinity. That in the duodenum this irritation causes reflex hyperacidity of the stomach in most cases, but in the distal portion of the stomach the inflammation inhibits the production of the hormone which stimulates acid production in the rest of the stomach. This coincides with the condition present in the great majority of ulcers, but I am aware that there are a sufficient percentage of exceptions to the rule to make some other modifying factors a necessary part of our theory of cause, and at present we can only guess at their influence.

Wilensky divides chronic ulcer into two types:

First, soft lesions characterized by (1) small size, (2) superficial extent, (3) limited in depth by the submucosa, (4) with no surrounding induration, (5) following a mild clinical course, (6) and frequently cured by medical care or undergoing spontaneous resolution.

Second, (1) large deep ulcers, (2) with much induration, (3) with frequent adhesions to adjacent viscera, (4) a tendency to perforation and hemorrhage, (5) a propensity to relapse periodically, (6) and an alarming percentage of mechanical complications and malignant changes.

The first variety are often amenable to medical care but the latter are distinctly surgical lesions. I feel sure that chronic ulcer with a distinct crater shown by the x-ray, or with definite food retention or adhesions to neighboring organs cannot be controlled by medical management only.

Acute ulcers can be classified in much the same way, the mild ones having a distinct tendency to spontaneous healing or reacting nicely to medical care, and a more virulent variety with frequent early hemorrhage or perforation, or gradually changing to the chronic form and resistant to anything but radical surgical measures.

Coincident with these changes from normal we find pathological alterations in function.

Abnormal Secretions—Gastric ulcer is most apt to manifest a diminished amount of alkaline secretion, with its acid cell stimulating hormone, elaborated in the pyloric end of the stomach. This is due to the local ulceration and inflammation and is followed by diminishing of the acid secretion from the fundus. This must be a late stage, as hyperacidity from irritation only is certainly a prominent factor in the early history of ulcer. In duodenal ulcer there is most frequently hyperacidity of the stomach with a possible early decrease in alkalinity of its own normal secretions. There are a large enough percentage of exceptions to these typical pictures to lead us to conclude either that different stages of ulcer are accompanied by varying degrees of acidity, as yet unproven; or that variations in secretions are not the sole cause of ulcer, a fact of which we are well satisfied.

Abnormal Motility—Hyperperistalsis is a constant accompaniment of the active stage of ulcer, and is the cause of the distressing "hunger pains", shown by the relief from measures taken to quiet this excessive muscular action.

Spasm in affected areas, with active churning of the entire organ causes severe distress, which was formerly attributed to hyperacidity. This

was probably due in great part to the fact that it is relieved by the ingestion of alkalies. However, it is not increased by any quantity of dilute hydrochloric acid, and is relieved by other agents like atropine which quiet muscular action. Also, Hardy has shown, by means of a pressure bag in the stomach, that pain exists only during hyperperistalsis and irrespective of the reaction of the gastric juice, even in complete achylia.

Pain is present only during periods of activity and it is probable that a perfectly calloused ulcer is symptomless, unless there is mechanical obstruction of the stomach outlet or during the flaring up of the acute ulcerative process. A dormant ulcer is often lighted up by acute infection elsewhere, acting both by reducing general resistance and increasing the local infection by transference from other foci.

Retention of food is due to a relaxed stomach with feeble muscular action or to actual obstruction to its passage. This may be due to muscular spasm about the inflamed area or in the first part of the duodenum, or to organized stricture from contractions of scar tissue, or to deformity of the organs from adhesions of the inflamed areas to adjacent viscera. Food retained, ferments, producing an active irritant for already inflamed tissues.

Hemorrhage, is due to necrosis of vessel walls by the ulcerative process. Sometimes they may be made permeable as the result of a general toxemia, without much local destruction.

An actively virulent process may invade the deeper structures so rapidly as to perforate the wall, releasing the stomach contents to the peritoneal cavity, unless enough warning has been given to allow the manufacture of protective adhesions, which will enclose a diverticulum.

Danger of malignant growth on the ulcer base seems to be confined to the gastric variety, and in the severe chronic types it is a real danger. Its incidence has been stated at from 8 to 80 per cent by various observers. An area of chronic irritation acted upon by some acid product of disorganized gastric function, manifests hyperplasia and then migration of epithelial cells. The local reaction is that of chronic ulcer, diminished gastric secretion, even to achylia being most frequent. In early stages the microscope alone can differentiate between them. Study of serial sections shows that hyperplasia and invasion are found in a large percentage of large chronic ulcers, and this must increasingly modify our ideas of surgical management.

Treatment—The principles of treatment of ulcer, rest upon recognition of the abnormal condition present. Our knowledge of the etiology of ulcer is somewhat incomplete, but we are struck by the definite results claimed by Rosenow in the intravenous injection of bacteria cultured from foci in the teeth and tonsils of patients suffering from ulcer, and the further fact that these same streptococci were recovered from ulcers apparently produced by removal of the natural alkaline secretions of the duodenum. The frequent existence of infections of other organs or diseases which lower resistance to infection, also leads us to lay especial stress on the importance of these experiments. It is quite apparent that drainage or destruction of infective foci in other parts of the body may be of paramount importance in prophylaxis. The fact that these specific streptococci seem to be endemic in crypts of the tonsils and about diseased teeth, would lead us to eradicate these sources of disease whenever found. Disturbances of secretions of the stomach and duodenum may be etiological factors, in the production of ulcer, but they are invariable accompaniments of it and must be dealt with.

Surgical treatment must concern itself with (1) normalization of secretion; (2) drainage of obstructed viscera thereby doing away with food retention; (3) removal of infected tissue; (4) relief of hyperperistalsis and consequent pain; (5) closure of hemorrhagic points; (6) closure of perforated ulcer; (7) prevention of recurrence at the same point or elsewhere; (8) prevention of malignant growth.

In order to complete our view of the problem, we should consider also, the causes for failure to obtain best results from operation, as given by Moynihan:

1. Gastroenterostomy with no lesion of stomach or duodenum.
2. Faulty technique, vicious circle, as result of jejunal obstruction, especially distal limb, or as result of too small a stoma, or too long a jejunal loop.
3. Lack of thoroughness, neglect to remove affected appendix or gall-bladder, or to deal directly with ulcer area.
4. Formation of new ulcer in stomach, duodenum or jejunum, reaction of unhealed ulcer, carcinomatous changes in old ulcers not removed. These may give rise to attacks with symptoms identical with original. May come from extensive adhesions of pylorus duodenum, jejunum or to abdominal wall.

It is at once evident that the problem is complex and that no one surgical maneuver can answer all its requirements. Much careful work must be done in preliminary diagnosis, and in many cases periods of medical test treatments, before decision is made, and frequently the type of operation must be decided after the field of disability is exposed.

Duodenal Ulcer—Gastro jejunostomy, properly performed, has a record of approximately 95 per cent cures in the hands of a large number of operators. The addition of local destruction of the lesion by cautery or excision has added to its popularity.

Its most dreaded after complication is jejunal ulcer, reported by various operators to occur in from 1 per cent to 4 per cent of cases. Belief that this occurrence was even more frequent led to the development of more radical measures, especially in European clinics. Jejunal ulcer is caused by the action of the hyperacid gastric secretions upon the jejunal mucous membrane. Mann showed that jejunum connected to the stomach and deprived of the alkaline bile and pancreatic juice, almost always become ulcerated, partial gastrectomy, removing the hormone producing portion of the organ in order to reduce the hyperacidity was used by a surgical group, represented by Finsterer, in an effort to remove this complication. This is a much more severe operation than gastroenterostomy, and although it has its enthusiastic advocates, I do not believe we are ready to endorse it unreservedly for all cases. It would seem safer to use diet and medical care for an extended period, after gastroenterostomy with removal of ulcer by knife or cautery, in an endeavor to prevent the occurrence of further ulceration. It might be said, however, that jejunal ulcer once formed is extremely resistant to medical management; excision and restablishment of normal relations of stomach and bowel, with removal of any remaining evidences of the original lesion being necessary for relief.

Resection of the duodenal ulcer alone has given relief in a number of cases, but its field is limited to cases where the duodenum can be mobilized and the resulting scar will not cause constriction and obstruction, so that procedure cannot entirely take the place of gastroenterostomy as long as its percentage of cures remains at 95.

Duodenal ulcer is especially liable to perforation. If operated within a few hours, gastroenterostomy after cautery and suture of the ulcer may be done, but if operation is delayed, the added shock from longer time and more trauma may be enough to materially affect the patient's risk, and it is better to delay it for a later session which may never be needed.

Gastric Ulcer—Is usually on the lesser curvature over one and one-half inches from the pylorus. Pyloric ulcer is very rare. It may lie just anterior or just posterior to the lesser curvature and is frequently multiple.

The choice of operation will depend upon the size and other characteristics of the lesion. Unquestionably fine results follow cauterization or excision of small ulcers with gastroenterostomy. Larger ones offer cause for partial gastrectomy, either of the sleeve operation or resection of pylorus if it is nearly involved and on account of the danger of malignancy there is a growing tendency to extend this measure to all cases. There is as yet no definite statistical proof of the greater occurrence of carcinoma after excision of the ulcer and gastroenterostomy, than after gastrectomy. However, serial sections of large ulcers have shown malignant tendency in such a large percentage of cases that I think we shall feel much safer with removal of such dangerous tissues. Radical operation will be much more usual than in duodenal ulcer where the danger of malignancy is remote.

The occurrence of jejunal ulcer after gastroenterostomy is probably not more frequent than recurrence of the original gastric ulcer, and both depend upon restoration of normal secretion and function of the stomach.

We cannot expect that rearrangement of the digestive currents, even with removal of the ulcerated area will in all cases remove the tendency to ulcer formation.

Our studies in etiology have shown us that focal infection must be eradicated before its results can be prevented. The elective action of a specific streptococcus upon the wall of the stomach must be combated, and already experiments are in progress to see whether vaccination against this particular organism can be effected. It would seem that the building up of immunity might be assisted materially. With the removal of infection we may be able to make better progress toward restoring normal gastric secretion.

The solution of our problem lies in better liaison between the surgeon and internist. Medical treatment alone is long drawn out, expensive of time and money, and impractical for the ordinary worker. Properly planned surgery will cut short this period greatly, make easier and more effective the medical management which should accompany it.

Too much is expected of surgery alone, and poor results after operations are widely heralded, when similar ending to a period of medical regimen is apt to be passed unnoted, possibly because it is more or less common or expected. We can expect this of surgical treatment of ulcer. Even in chronic cases, which it does not cure, you may expect more relief than from their previous medical treatments. And if our forces are properly combined and the patient kept under supervision for the two years recommended by Sippy after a term of medical treatment we should certainly see a great improvement in our results.

THE ADMINISTRATION OF ETHYLENE-OXYGEN*

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Current literature reveals practically all the data relative to ethylene anesthesia with the exception of its administration. It is assumed that those who are familiar with the administration of nitrous oxid and oxygen are also familiar with the use of ethylene and oxygen, which is, for the most part, true. My paper is intended principally for those who have had no previous experience with gas anesthesia, especially with ethylene anesthesia. The technic of administration described is applicable to cases of ordinary abdominal section, since an expert anesthetist would have little difficulty in applying it to other types of cases.

Ethylene is indicated in nearly all types of ordinary minor surgical cases, and in the majority of ordinary major surgical cases, especially if profound relaxation is not necessary. Its principal indication, however, is the weak, debilitated patient. There is, at present, probably no other anesthetic agent which affords as profound anesthesia with as little reaction as does ethylene when it is properly given. It is unquestionably for the weak patient and the poor risk that the advantages of ethylene are most strikingly demonstrated.

During the administration of an ethylene anesthetic, the conduct of the operating room must be the same as if it contained a small leak of illuminating gas. In operations requiring a cautery or similar apparatus, its use is contraindicated. Neither will it suffice, combined with oxygen, for laparotomy in the presence of acute peritonitis, and it frequently fails in operations on the gall-bladder. It does not afford the profound relaxation that can be obtained with ether.

In a case of ordinary gastroenterostomy, the patient is placed on the operating table; the ankles and wrists may or may not be fastened down. Any good gas machine that has been loaded with a supply of ethylene, oxygen and ether may be used. The face mask must be fit snugly; therefore different sizes of masks are desirable. After opening the tanks, a stream of 80 per cent ethylene and 20 per cent oxygen from the mixing chamber is allowed to enter the bag until it is moderately inflated. The mask is slowly lowered until it fits snugly on the patient's face. It is only the first two or three breaths of ethylene that distress a sensitive patient. By the time the fourth or fifth breath has been taken, the sense of smell has been dulled and semi-consciousness produced. The patient may require rather a strong mixture and yet retain a good color, and so the percentage of oxygen in the mixture is reduced to 5 or 10 per cent in the induction period, which usually lasts from twenty-five to fifty seconds. The percentage of oxygen is slowly increased to percentages as high as 15, 20 or 25, depending on the extent of relaxation demanded and produced. From the second minute of the anesthetic, which is equivalent to the first minute of the second stage, saturation of the patient with ethylene begins, and continues gradually, if the mixture respired is not altered for a time in its percentage of ethylene and oxygen. The optimal saturation usually exists at the end of the first ten or fifteen minutes of the anesthesia. At this time, the patient being saturated with the gas, it is possible to reduce the strength of the mixture and still maintain anesthesia. Therefore, in order to obtain satisfactory results with ethylene in abdominal surgery, it is, as a rule, advisable to start the anesthetic at least ten minutes prior to the time when the peritoneum is to be incised.

Let us assume that the anesthesia has been started, that the induction period is passed, and that surgical anesthesia has been established and the skin incision made. It is necessary at this time to keep the patient as deeply anesthetized as possible, and still give from 15 to 20 per cent oxygen. Occasionally a patient will require as high as 90 per cent ethylene in this early period. It is ordinarily better not to decrease the oxygen below 10 per cent and if ether is not particularly contraindicated, to add a little of it to the ethylene-oxygen and raise the oxygen to 20 per cent. As the peritoneum is incised and the exploring hand passed through the abdomen, the patient may stop breathing. Cyanosis rapidly develops, and must be avoided by the administration of oxygen; however, this is given only until the patient has respired two or three times, or until the cyanosis disappears. Then the percentage employed in the latter part of the induction period is abruptly restored. With the conclusion of the exploration and the delivery of the diseased organ into the wound, anesthesia may be lightened; this amount is usually sufficient for the period of operating to within five minutes of closure. The deep anesthesia used during the incision and exploration must then be induced. After the peritoneum and posterior fascia have been closed, light anesthesia is used, as during the middle of the operation. The anesthesia may be discontinued just before, or during the time the last suture is being placed. It is the custom of some anesthetists to terminate the anesthetic with the

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administration of a considerable quantity of oxygen. It makes little difference how this anesthetic is terminated, so long as the final mixture is light.

A good psychic effect may be obtained for temperamental patients by an induction with nitrous oxid, followed by ethylene and oxygen. For the majority of patients it is an application of the Golden Rule. Preoperative hypnotics given either in water or in magnesium sulphate solution are often indicated, especially for nervous patients and for very muscular patients. The best adjuvant is ether, however, and is easily administered with ethylene and oxygen; in combination with these agents it usually produces a satisfactory anesthesia. If the anesthetist is familiar with the four agents ethylene, oxygen, ether and morphin, these afford good results. The second

SIGNS OF ANESTHESIA WITH ETHYLENE AND OXYGEN

A. WITHOUT MORPHIN

First stage (40 to 60 seconds) 90 per cent C_2H_4—10 per cent O_2.

1. Pupil normal, occasionally a sudden fleeting dilatation. Reacts quickly to light.
2. Skin pink.
3. Relaxation absent.
4. Eyeball moving freely.
5. Temperature of skin unchanged.
6. Humidity of skin unchanged.
7. Pulse rate often increased.
8. Blood-pressure often about 20 mm. high or low.
9. Respiration voluntarily normal.
10. Blood pink.

Second stage (light surgical anesthesia, occasionally a period of excitement) 2 to 5 minutes, 85 per cent C_2H_4—15 per cent cent O_2.

1. Pupil normal or slightly dilated. Reacts quickly to light.
2. Skin pink.
3. Relaxation moderate.
4. Eyeball moving.
5. Temperature of skin normal.
6. Skin dry.
7. Pulse rate usually normal.
8. Blood-pressure usually normal.
9. Respiration deeper and faster.
10. Blood red.

Third stage (deep surgical anesthesia) 5 to 15 minutes, 80 per cent C_2H_4—20 per cent O_2.

1. Pupil slightly dilated. Reacts to light. 2. Skin pink.
3. Relaxation good. 4. Eyeball fixed, often turned and fixed.
5. Skin warm. 6. Skin dry.
7. Pulse rate normal or slowed.
8. Blood-pressure normal or lowered.
9. Respiration normal as in sleep. 10. Blood pink.

B. WITH MORPHIN

First stage (25 to 50 seconds) 85 per cent C_2H_4—15 per cent O_2.

1. Pupil contracted. Reacts quickly to light.
2. Skin pink.
3. Relaxation slight or absent.
4. Eyeball moving freely.
5. Temperature of skin unchanged.
6. Humidity of skin unchanged.
7. Pulse rate normal.
8. Blood-pressure normal.
9. Respiration voluntarily normal.
10. Blood pink.

Second stage (light surgical anesthesia, usually no excitement) 2 to 3 minutes, 80 per cent C_2H_4—20 per cent O_2.

1. Pupil contracted. Reacts to light.
2. Skin pink.
3. Relaxation moderate.
4. Eyeball moving slowly.
5. Skin normal.
6. Skin dry.
7. Pulse rate slightly increased.
8. Blood-pressure normal or slightly lowered.
9. Respiration faster.
10. Blood red.

Third stage (deep surgical anesthesia) 3 to 10 minutes, 75 per cent C_2H_4—25 per cent O_2.

1. Pupil normal. Reacts slowly to light. 2. Skin pink.
3. Relaxation very good. 4. Eyeball fixed, may be turned and fixed.
5. Skin warm. 6. Skin dry.
7. Pulse rate normal or slowed.
8. Blood-pressure normal or lowered.
9. Respiration normal as in sleep. 10. Blood pink.

Fourth stage. Premortem (at any time) 97 per cent C_2H_4—3 per cent O_2.

1. Pupil dilated. Does not react to light. 2. Skin blue, black, and finally gray.
3. Relaxation complete. 4. Eyeball fixed. 5. Skin cold.
6. Skin moist. 7. Pulse rate fast, irregular and faint. 8. Blood-pressure very low.
9. Respiration shallow, irregular and inhibited. 10. Blood black.

best adjuvant is local anesthesia, as it has the qualities which complement ethylene. Novocain in moderate amount and strength does not add shock or unpleasantness to the anesthetic. Occasionally respiration becomes inhibited, regardless of the anesthetic agent used. For instance at the end of the induction period with ethylene and oxygen, a patient will occasionally hold his breath. One must be watchful and anticipate the cessation of breathing by the administration of a breath or two of oxygen which, of course, eliminates the embarrassment which otherwise results. Respiratory inhibition is more common, however, at the time when ethylene-oxygen anesthesia has become established, and an attempt is made to introduce ether with it. This is usually the result of sudden addition of ether, in concentrations above 7 per cent, or stronger than can be used during the induction period of an open ether anesthetic. Whenever ether is added, the exhaling valve should be opened, and the percentage of oxygen increased. When the ether is turned off, the exhaling valve is closed. This difficult situation is also faced during the administration of ether by the open drop method. That is, the patient sometimes holds his breath reflexly before anesthesia becomes established, and occasionally during the course of the anesthesia. In about a dozen anesthetics,[1] I have been able to handle such a situation without difficulty by administering a little carbon dioxid with the ethylene and oxygen, or ethylene, oxygen and ether, as the case may be.

Patients with acute peritonitis do not relax satisfactorily with ethylene and oxygen alone, but relax well with ethylene, oxygen and ether, provided plenty of ether is used. Lesions of the gall-bladder cannot be routinely operated on under ethylene and oxygen, or even under ethylene, oxygen and ether anesthesia. In such cases the most uniformly satisfactory method is the open drop ether. The future, however, holds out a possibility that carbon dioxid will aid in overcoming the difficulties attending operation on the gall-bladder, inasmuch as it is assumed that while the carbon dioxid escorts the anesthetic, the patients will not be able to hold their breath long enough to grunt. Carbon dioxid makes general anesthesia easier and gas anesthesia more efficient, as respiration is more easily controlled. The signs of anesthesia are outlined in the tabulation.

These stages and signs of anesthesia are only approximate, because they are often fleeting and at first pass unnoticed. Postoperatively there is frequently momentary nausea, and possibly the stomach will empty. The patient does not always vomit, but nausea may be annoying, when ether is added or when the gas is impure.

Prostration is noticeably absent, particularly if ether is not added to the ethylene and oxygen. Rebreathing and ether cause sweating, but this is easily controlled with atropin. A sudden return to consciousness may mean the quick onset of post-operative pain. Morphin affords the necessary relief.

1. Since this paper was read this series has been increased to 400. The application of the nitrous oxid, ethylene, oxygen and carbon dioxid anesthetic, and ether if necessary, will probably be used extensively in the future.

We have had the question of the disappearance of the "Country Doctor" discussed by the city doctor, by the specialists, occasionally by the country doctor himself, who really knows, and now the country doctor's wife, who has a clearer vision than anyone else, one who knows and is able to express herself.

For the first time we are able to present the views of an observer on the ground. We have the feeling that Mrs. (Dr.) Crabbe would not exchange an assured position for one of doubt, or a Ford for a Packard?—(Editor.)

THE PASSING OF THE COUNTRY DOCTOR*

Mrs. A. A. Crabbe, Traer

Fate seems to be decreeing against the country doctor, just as it did against the country schoolmaster. Very little has been written of his influence upon the nation.

In the earlier years, when obedience and patriotism were the two cardinal virtues, it was he who taught the young. He was not apart from the irksome tasks of the day. No one knew better than he what citizenship meant, but fate decreed against him and he is no more.

As a teacher of a number of years' experience, I wonder if his absence has not had much to do with the view that is taken in our country today by a large mass of the people, and if it has not something to do with the disregard for law by the average youth?

We can hardly blame the youth, when he depends entirely for his inspiration upon some bobbed-haired girl in her teens, her face painted beyond recognition, her dresses to her knees, with very little training and little if any wisdom, yet to her we have entrusted the grave task of teaching our children citizenship! Do you wonder that the boys of today are taking responsibility lightly and that they regard the laws of our great land very largely as a joke? It would be interesting to know just how far this condition

*Read before the Tama County Medical Society.

has contributed toward the general unrest and disregard for the laws of our land.

But to go back to the country doctor. His ranks are thinning and there seems little available material with which to fill those ranks. By a recent survey, it has been found that the average age of the country doctor is around fifty-three years. An ideal age for service, with an average rich experience of a quarter of a century behind him, but, "time and tide wait for no man", the years are passing, and there seems little hope of sufficient recruits, under existing conditions, to replace those who are falling by the way. But few of the new students intend to enter the field of general practice because of the seeming lack of opportunity. The present requirements of seven years of collegiate training, and the consequent expenditure of from $10,000 to $15,000 makes the investment too great to risk in a seemingly doubtful field.

This very training unfits the student for any other career but that of a specialist. He has been associated with the foremost scientists of his day in unwinding threads of scientific research in our great laboratories and in the operating room. He wants to stay in this alluring field, to follow this great work. He has grown one-sided along the lines of specialism.

The story goes of a newly graduated student who was asked if he intended entering the field of general medicine. "No", said the young man, "I am going to specialize". "What is your line?" asked the questioner. "I am going to specialize on the nostril." "Oh", said the other, "Which nostril?"

He has grown away from the practical side of his profession. He has outgrown the common tasks of routine daily practice, the "Yes, doctor", "No, doctor", of the enameled nurse has become such music in his ears that he is like a lost soul without it. It is a very costly sort of physician that is being produced, and not the sort of men who will do the ordinary service of medicine for the ordinary people, and the ordinary people make up more than half of our population.

All sorts of objections are given against entering the field of general medicine in the rural communities. They cite the superior financial, social and professional advantages of the city. However, they fail to take into consideration that any or all of these advantages depend entirely upon the individual.

While it is true that the financial condition of the country doctor is not a bright and shining light that the young medic will hasten to follow, yet the reason in thousands of cases is not that the practice does not warrant a better condition, but that the individual doctor is absolutely no sort of a collector or business man. He refrains from pressing his accounts because he fears to offend, when as a matter of fact the patient loses respect for a doctor who is an easy mark.

Doctors, as a rule, are notoriously easy spenders. They buy any thing that is offered, from a gold mine to the latest expensive electrical apparatus. Sometimes in self-defense, and if the saleswoman happens to have a pretty face her sales are 100 per cent. Their sympathies are large and any tale of hard luck finds ready response. Many live beyond their means with an idea that they are putting up a good front. Was it not Lincoln who said: "You can fool all of the people part of the time, and part of the people all the time, but you can't fool all of the people all the time"? Often an expensive automobile and its up-keep stands between a doctor and his reputation for paying his bills. As a rule, they are good bluffers. We had a doctor friend who told wondrous tales of $300 laparotomies performed in a neighboring hospital, almost daily, and who conversed in terms that were entirely beyond my ken, who drove luxurious cars, I was almost envious—until one day his wife forgot and inadvertently said, "You know, Mrs. Crabbe, it takes nearly every cent Webster makes to keep the car going". "Verily, a prophet is not without honor save in his own country."

There are drawbacks in the general practice of medicine today in the small town that was not the case twenty years ago. The automobile and good roads makes it easy for the patient to get to the larger towns and thus get away from his doctor, because it often happens that the doctor loses his patient as soon as he takes him to a hospital—unless he is on the staff—and many times the almost snobbish contempt in which the small town doctor is held. These conditions and many more tend, as it were, to steer the student to the larger centers and into the special field where they have not these unpleasant conditions to contend with.

And yet, in spite of it all, there are compensations in the life and service of every country doctor that are beyond money and beyond price and that the specialist knows nothing of. The country doctor is the family's friend. He rejoices with them in their prosperity and sympathizes with them in their adversity. He is their confessor and friend, and may the day be far distant when he shall have been forgotten and when we shall cease to draw the picture of the country doctor from the poem, "Our Old Family Doctor".

> You'll know him by his muddy shoes,
> His clothes of last year's style;

The weary look about him,
The sweetness of his smile.

You'll know him when the school's let out,
And see the children flock
To catch a cheery word from him,
And shout their "Hello, Doc".

You'll know him too, at midnight,
When he rides thru sleet and rain,
And wades deep in swollen stream,
To reach your bed of pain.

You'll know him in the dawning,
Still sitting by your bed
In damp clothes—Oh, so patient,
His hand upon your head.

He was never in a hurry,
When a kindly word could cheer;
And the little jokes he saved for you
Are memories most dear.

He didn't fall in Flander's Field
Where crimson poppies grew;
He wore himself out, waiting
On folks like me and you.

He has no cross in Flander's Field,
Mid poppies crimson hue;
His cross is in the aching hearts
Of folks like me and you.

GOLD IN TUBERCULOSIS*

J. W. Kime, M.D.
Superintendent Boulder Lodge Sanatorium, Fort Dodge

It has long been known that gold has a selective action in tuberculosis. Efforts are now being made to determine whether this action may be specific in this disease.

In 1890, Koch found that in a solution of 1-1,000,000, or one grain of gold to a half barrel of bouillon, the tubercle bacillus would not grow in the test tube. He attempted to apply this knowledge to the treatment of tuberculosis but his technique failed and nothing was accomplished along this line.

Since that time, a number of efforts have been made by others to destroy the tubercle bacillus in the living body by means of gold, but all such efforts have failed. Recently, Moellgarrd of Copenhagen, has renewed these efforts, using a salt of gold which he designates as Sanocrysin. Tests are now being made to ascertain the efficiency of this preparation.

While awaiting this report, we have been making use of a common salt of gold in a number of advanced and hopeless cases that are under sanatorium treatment.

Since, under present methods of treatment, these patients have nothing to hope for, they have nothing to lose should the gold prove to be of no avail.

As no data are available upon such use of gold, it has been necessary to proceed with great caution, feeling out each step as to size of dose, frequency of repetition and method of administration.

It was soon found that the effects of a single moderate dose of gold were seen for a week or more after its administration.

Under its use the sputum rapidly diminishes in amount, and, in some moderate cases, almost completely disappears. The sputum also becomes more cellular in character and in many cases is composed almost wholly of leucocytes, or pus cells.

Within twenty-four hours after the administration of a moderate dose of gold, many leucocytes are found in the sputum which contain tubercle bacilli, frequently great numbers being crowded into a single cell. In addition, large clumps of bacilli are found in many fields of the microscope. These groups are circular in form and their size is such that there can be no doubt that they have been contained in a leucocyte whose outlines cannot be made out.

Examination of the sputum before the use of gold, usually shows the presence of a few tubercle bacilli scattered irregularly in the microscopic fields, but after the use of a single moderate sized dose, the bacilli appear to be increased, often a thousand fold, and most of these bacilli are clumped in the manner above described.

Increased phagocytic activity of the leucocytes, only, can explain these remarkable changes in the sputum and the clumping of the bacilli in almost every field of the microscope.

This apparent increase in numbers of bacilli is due to the great activity of the leucocytes as scavengers. They attack the bacilli in great numbers and carry them out upon the open surfaces communicating with the air. In any tuberculous focus, however, only relatively few of the bacilli in the tubercles are found upon the open ulcerating surfaces. They lie embedded in the tissues of the affected parts and are there attacked in the same manner by the leucocytes and are destroyed, giving rise to evidences of reaction to the drug.

After several days, the bacilli are greatly reduced in numbers and there is no clumping of those which remain. When this state has been reached a second dose of gold is given.

In many of the phagocytes, and in clumps, are seen fragments of bacilli which have been destroyed by the leucocytes, many of the phagocytes being entirely filled with such partially digested and fragmentary bacilli. In others, the bacilli are entirely altered in appearance, being nothing more than fine threads with numerous beads that are brown or black, while among them are many that are short rods which appear to be bacilli that are broken into parts and whose ends lie separated from one another.

With the lessening in the amount of sputum, the cough becomes less and the patient rests more quietly. The appetite is greatly improved and the patients take more nourishment than before the use of the gold.

Immediately after the use of a moderate dose of gold, however, there is usually some loss in weight, even though the patient may take more food. This loss may amount to a number of pounds. It is a part of the reaction to the drug.

Where this loss occurs, it is our practice to increase the interval between the doses. In far advanced cases, where this loss is marked, treatment is discontinued altogether as such patients are not able to recuperate the loss.

After the immediate reaction to the drug, the weight again increases in cases which are not too far advanced for any remedial treatment.

Following the use of the gold, there is a reaction, usually seen within a few hours, of a degree or two in temperature, which may remain for two or three days, or even longer, when it again declines and gradually approaches the normal. The heart rate follows the temperature curve. When the temperature falls, the heart rate declines with it or follows shortly after.

In far advanced cases, no permanent benefit has followed the use of the gold. In moderately advanced cases, gold has properties which are equaled by those of no other drug. It now seems to us, that there is much reason for the hope that when the dosage and the proper spacing of the doses have been accurately worked out, this remedy will be classed in tuberculosis as a near specific for this disease.

I am fully aware that it is the proper thing to scoff at the idea that any specific drug treatment will ever be evolved for tuberculosis, the favorite argument being that any drug which is sufficiently active to kill the bacillus will also be fatally destructive to the animal cells.

That this position is wholly untenable, is evidenced by the fact that the spirochetes of syphilis, the plasmodium of malarial fever and the actinomyces of actinomycosis, are all destroyed by means of drug action and without injury to the vital cells of the hosts.

Medicine is filled with just such accomplishments and we are but flying in the face of all the achievements of modern medicine when we close the door upon tuberculosis and denounce any man who even attempts to solve this problem.

As yet, we have used the gold only on advanced cases, but from results with these patients, we have much reason to believe that in early and suitable cases this agent will be of the greatest value.

Any drug which will, in late stage cases, largely eliminate the sputum, suppress the cough, increase the appetite, reduce the temperature and stimulate phagocytic action to a high degree, cannot fail to take high rank in the treatment of early cases. No other drug than gold will accomplish these things in any stage of tuberculosis.

In no case have any untoward symptoms of any kind been seen.

The action of gold in tuberculosis resembles, in some respects, that of tuberculin. There is an irritation and a pouring out of leucocytes in the tuberculous areas. It has a selective action upon lung tissue and particularly upon those parts infested with the tubercle bacillus.

In the administration of gold, we proceed upon the theory that, in proper doses, it stimulates phagocytosis in a high degree and that the tubercle bacillus is thus attacked and destroyed.

The administration of the proper dose, in the proper manner, and at proper intervals, is the problem to be solved.

That definite results, with moderate doses, are obtained, no longer admits of any doubt.

As has been stated, gold has been tried in the treatment of tuberculosis by others during the past thirty years, but all such attempts have failed. What reason is there then to believe that gold has any special value in the treatment of this disease?

It does not appear that those who have made efforts along this line in the past had any other thought in mind than the actual destruction of the bacillus itself by means of large and poisonous doses of gold—poisonous to the tubercle bacillus, but without toxic effects upon the patient. It is proposed to administer sanocrysin in one, or a few large doses, which will destroy all the tubercle bacilli without injury to the host. This is mentioned only to condemn.

Results so far obtained, as we are using the gold, are conclusive that a powerful phagocytosis is excited which continues for many days, during which time immense numbers of tubercle bacilli are attacked and destroyed by the invading army

of leucocytes. The dose administered for such excitation of phagocytosis is far short of any toxicity, while, by phagocytosis, it is destructive to the bacillus itself. At the same time, all the clinical evidence points in the direction of improvement in the condition of the patients so treated.

While phagocytosis and parallelism, or clumpage, are referred to in the literature, I have never seen, and I do not believe that any other person has seen the type of phagocytosis, or parallelism, which is produced under the use of gold. Tubercle bacilli in the sputum are extra-cellular and it is rare that they are found within a leucocyte, but after the use of gold, in many cases, practically all the bacilli are intra-cellular, many of the cells being completely filled with them. Allen, of Saranac Lake, in an article written in 1907, speaks of phagocytes which contained as many as eight tubercle bacilli. Our slides show, every day, phagocytes that have not less than fifty bacilli in them.

The phagocytes that are sometimes seen in sputum, represent an effort on the part of the patient to destroy the bacilli, but usually such efforts fail. The artificial phagocytosis produced by the use of gold is on an enormous scale and very clearly demonstrates an aroused effort on the part of the organism to free itself of these unwelcome parasites. (The form of gold here used must not be confounded with sanocrysin.)

ACUTE EXANTHEMATA*

W. A. Bagby, B.S., M.D., Laurens

The exanthemata are characterized by a rash appearing sometime during the disease. Diseases like syphilis which become chronic, and skin diseases *per se* are not to be considered with the acute exanthemata. The progress of preventive medicine has naturally led to a study of these diseases through the fact that they produce immunity. Small-pox, chicken-pox, measles, German measles, all produce immunity more or less permanent. Most of these diseases can be controlled by artificial immunization. This is a very important fact and only recently has it become generally true of them. Every layman knows the advantage of vaccination against small-pox and the public is beginning to realize the importance of immunization against diphtheria and scarlet fever. The responsibility for the latter is ours and we must shift it by teaching the public their duty toward them. When we say "fools and babies must be vaccinated" we presume that a careless public will take care of itself. But our health laws quarantine against small-pox instead of the unvaccinated.

The etiology of small-pox is still a debatable question which we will not attempt to settle at this time; but it is sufficient to call it a filterable virus since that can not be disproved. In the pathology of small-pox there is a leukocytosis. This is not true of chicken-pox and is a convenient point in the diagnosis. In the differential diagnosis of small-pox may well be considered; (1) prostration; (2) distribution of the lesions on the skin; (3) localization, and (4) maturation. The three days of prostration with fever and pain in the back which precede the eruption almost tell the story. The lesions have a strong liking for the face, wrists and hands rather than the body as do those of chicken-pox. The time of eruption is important, being three or four days late in small-pox and only a few hours in chicken-pox. One should notice the palms of the hands and the soles of the feet, also whether the crops are single or successive. Small-pox rarely occurs within five years after vaccination.

The morbidity of scarlet fever depends largely upon toxemia and complications. The malignant cases are very toxic and early death is due to the toxemia. Adenitis and nephritis are the most common complications. Otitis and mastoiditis are frequent. The disease certainly is not so contagious as measles and the fatalities are much less per capita.

The cause of scarlet fever as discovered last year by Dr. Dick is a hemolytic streptococcus. Experimental scarlet fever was produced and the germ again isolated thereby complying with the laws of Koch in establishing the identity of the causative factor of the disease. From Dick's discovery has come several important developments in the prophylaxis and treatment of the disease, namely, the production of a toxin from the specific streptococcus, and antitoxin and the use of these in testing immunity or susceptibility and in treating the disease. The toxin was obtained and diluted to a strength just sufficient for a dose of one-tenth of one milligram to produce a reaction when injected into the skin almost identical to that of the Schick test. A positive reaction is manifested by a reddened area which occurs in from twenty-two to twenty-four hours and lasts about forty-eight hours. One which fades within that time is not a positive reaction. Immunity is produced by injection of a toxin in gradually increasing doses, five days apart for three times and repeating the third if necessary. This is to be determined by the test before mentioned.

*Read before the Twin Lakes District Medical Society, January 15, 1925.

The test injection is given with a one-half c.c. syringe with Leur tip graduated in one-tenth c.c. and a one-half inch 26-gauge needle. Reaction fading by the end of twenty-four hours is negative. It will be noticed here a striking similarity to the test determining susceptibility to diphtheria, the extent of time being an important factor.

The treatment of scarlet fever with vaccines was attempted in 1905 by Gabrilschewsky. Some advantage was noticed in this method due to the antitoxin produced in the patient's blood by the presence of toxin of the hemolytic streptococcus, the specific germ of scarlet fever. Marmorec in 1895 made anti-streptococcic serum by injecting the germs into horses. Moser in 1902, Sherman in 1924, obtained the serum in the same way. The dosage of this serum required for the treatment of scarlet fever was so large that its use in the disease was abandoned. Antitoxin for the treatment of scarlet fever is obtained by injecting the specific hemolytic streptococcus into the horse and its concentration brought about in the usual manner. The dose of this serum is not large and may be used in the treatment of any case of scarlet fever. It is especially valuable when given early to a malignant case, and it may be depended upon to prevent complications in practically every case when used early in the disease.

Susceptibility to measles is high. That is to say only a small per cent of the people have a natural immunity to the disease. Zingher gives as high as 96 to 98 per cent of susceptibility among children in New York City. Isolation in the same home with a case is misdirected energy and only adds to the difficulties of household duties. When a case of measles is found in a family of children, isolation is futile.

Mortality from measles varies greatly with different conditions. Poverty and crowding are the main factors leading to a high mortality. The age of two years is the critical age for measles. As high as 46 per cent has been reported in foundling institutions where the children were young and where many children were crowded into one building. Ninety per cent of the death rate are children under five years of age. While the statistics show a general rate of six or seven per one hundred cases, under these special conditions of environment, age, and time of year, the rate is twenty-two times higher. The time of year has a very noticeable influence upon the mortality rate of measles. Zingher also points out that 95 per cent of the mortality in New York City occurs between the months of January and June, leaving only about 5 per cent for the other six months. The time factor is influenced largely by the prevalence of other diseases, especially the respiratory diseases such as bronchitis, influenza, and bronchopneumonia. During the first ten years following 1900, 30,000 children died of measles in Germany; 100,000 in twelve years in the United States.

The prophylaxis of measles is within the range of possibility. The difficulties are, however, much greater than those of small-pox, diphtheria, typhoid, or scarlet fever, but are by no means unsurmountable. In view of the mortality statistics given above, even difficult obstacles should be overcome where the conditions warrant such action. Until the specific cause of measles is known the prevention will probably not be an easy task. In 1916 Nicolle and Conseil, also Park and Zingher, attempted immunization against measles and with fair success. At present this is accomplished by introduction of the disease and then controlling it with immune serum, or with immune or convalescent blood. A case of measles introduced into a susceptible child by means of a smear from the nasal mucus membrane of an active case is prevented from developing the actual symptoms. This is done by injecting a dose of 2.5 c.c. of convalescent, or 5 c.c. of serum from an immune adult about the fifth to the tenth day of exposure. Usually no coryza, cough, or fever are noticed, only a low temperature, and slight rash similar to that of a light case of measles.

The duration of passive immunity varies. The length of time of the immunity depends upon whether the immune serum is given before the beginning of the disease or afterward. When the immune serum is given to a susceptible child who has been exposed but has not yet taken the disease, an immunity is produced for only a short length of time, usually about four to six weeks. A mixed immunity results by use of the serum five to eight days after exposure. In this case we have the effect of the serum plus a partial effect of the disease. Permanent immunity follows the disease and may be produced by introducing the disease and controlling it by use of the serum.

Degkivitz, Park and Zingher and many others have successfully used serum from patients convalescing from measles in the treatment of the disease. Donors of blood for immune serum must, of course, be free from tuberculosis and syphilis. A Wassermann of the serum should be made when necessary unless the donor has had a recent negative reaction. Five hundred to six hundred c.c. of blood may be obtained from an adult at one time and the same amount collected

again after two or three weeks. The blood may be used whole or allowed to stand and the serum removed for later use. The dose of the serum is just half as much as that of whole blood. Also the dose of convalescent serum is only half of that of the immune. The technique of obtaining the blood is as follows: A bottle holding 500 or 1,000 c.c. with a double perforated stopper, each perforation receiving a glass tube. To one glass tube is attached a rubber tube which has attached a 16-gauge needle for collecting the blood. The other perforation is for a rubber tube to which suction is produced. This apparatus is wrapped and sterilized and is then ready for use. The use of convalescent serum in frail patients to whom measles might be fatal, or children having tuberculosis or some acute disease or a young child about the age of two in unfavorable surroundings is doubtless the best method of treatment, and is calculated to save life. Convalescent serum obtained about ten days after the fever of measles is the most potent. This when collected under proper conditions will remain effective for treatment of measles for about six months' time. In view of the fact that the serum is important and rather hard to get every opportunity should be used to obtain it.

UNITED STATES CIVIL SERVICE EXAMINATION

The United States Civil Service Commission announces the following open competitive examination:

Occupational Therapy Aide
Occupational Therapy Pupil Aide

Applications for occupational therapy aide and occupational therapy pupil aide will be rated as received until August 31, 1925. The examinations are to fill vacancies in the Veterans' Bureau throughout the United States, at entrance salaries of $1,680 a year for occupational therapy aide and $1,000 a year for occupational therapy pupil aide. Advancement in pay may be made without change in assignment up to $2,040 and $1,400 a year, respectively.

Applicants for these examinations must be qualified in arts and crafts; experience in academic or commercial subjects will not qualify applicants for these positions.

The duties of occupational therapy aides will consist of giving instructions in the arts and crafts, keeping a daily record of the work and progress of each and every patient coming under direction and instruction, and making the required reports of the activities of the reconstruction work in occupational therapy.

The duties of occupational therapy pupil aides will be, under the supervision and instruction of the chief aide, to apply occupational therapy by means of teaching arts and crafts; to keep a daily record of the work and progress of patients; and to make the necessary reports of the activities of the reconstruction work in occupational therapy.

Competitors will not be required to report for examination at any place, but will be rated on their physical ability, and education, training, and experience.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the board of U. S. civil service examiners at the postoffice or customhouse, in any city.

INTERNAL REVENUE SERVICE

In making application for reregistration under the Harrison narcotic law, as amended, fiscal year 1925, be guided by the following instructions:

Execution: Forms 678—Execute both sets; one to cover class 3 or 4, the other to cover class 5.

Inventories: Forms 713: Class 3 or 4—Show all the taxable narcotics which you have in your possession under this classification; do not show any exempt preparations. If no taxable narcotics are on hand, state in explanation: "None on hand." Sign and swear to same before a notary public, forwarding duplicate copy only to this office, retaining original copy for your files.

Inventories: Forms 713: Class 5—Show only the amount of taxable narcotics, kind and quantity, which you have on hand, with which to manufacture exempt preparations, such as paregoric, etc. If no separate stock is maintained for this purpose, it is still necessary that you execute Form 713, showing "No narcotics on hand under this classification." Sign and swear to same before a notary public, returning duplicate copy only to this office, retaining original copy for your files.

Payment of Tax—Forward only certified checks or postal money orders, as no other forms of remittances can be accepted. Do not send drafts. In making remittance do not include an additional one dollar for Class 5 when registering under any of the other classes, as such registration grants you registration under Class 5 without the payment of additional tax of $1.

Return of Forms—Return forms promptly, as same are due in this office on or before July 1. Delay will mean payment of penalty.

Discontinuance of Registration—In case it is your desire to discontinue registration under the Harrison Act, it is requested that you so advise this office stating whether or not you have any narcotic drugs or preparations in your possession, as well as any official order forms. Proper instructions regarding the procedure to be followed by you will then be issued.

L. E. Bladine,
Collector Internal Revenue, Dubuque.

The Journal of the Iowa State Medical Society

D. S. FAIRCHILD, Editor.....Clinton, Iowa

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THE SEVENTY-FOURTH ANNUAL SESSION OF THE IOWA STATE MEDICAL SOCIETY

As we look back on the succeeding sessions of the Iowa State Medical Society we find reason for congratulations in that there is a progressive improvement in every particular. The attendance is increasing from year to year, with some fluctuations to be sure, influenced by condition of weather and roads. The increasing attendance compels the Society to limit its migrations on account of hotel accommodations. The personal feeling of the members was expressed in the desire to accept the invitation of the Cedar Rapids profession to meet in that city for the 1926 session, but with a registration of 608 members, with their families making a total of 800, it was determined to be unwise to go outside a convention city for its meetings. At various times it has been proposed to make Des Moines the permanent home of the Society, but the desire to visit the various cities of the state has been too strong for such permanent action.

The 1925 session was especially marked by the character of the papers and the promptness of the speakers to respond when their names were called. Much credit is due to the President, Dr. Frank M. Fuller of Keokuk, for the expeditious manner in which the general sessions were conducted and for the successful way the House of Delegates functioned. The attendance of the delegates was unusually large and prompt. It was gratifying to observe the interest manifested by the Councilors in the survey of the societies in their respective districts. The plan adopted for a personal detailed report of each Councilor is a decided improvement over the old method of reporting through the chairman. The new plan imposes a greater degree of personal responsibility.

The registration law at first threatened some serious discussion, but when it was found that the new Department of Health had no definite relation to examining boards and that each of the so-called professions—ten in number—had their own independent examining boards which certified to the qualifications of their own candidates, the feeling became less tense, and that under the laws existing in Iowa governing the practice of medicine, nothing better could be expected. As all the cults recognized under the law must subscribe to the law requiring a registration annually, with an annual registration fee of one dollar, the regular practitioner could not refuse to abide by the law, but could not escape the feeling that an annual registration and an annual tax could serve no useful purpose. As taxation seems to be one of the important features of legislation, the medical profession may not expect to escape. In this connection we may note, that the Bureau on Legal Medicine and Legislation of the American Medical Association sent in a communication on the war tax on the Harrison narcotic law, the tax on traveling expenses necessary for attendance at meetings of medical societies, and the tax on the expenses of post-graduate study. There was a feeling that the $3 tax on the privilege of prescribing narcotics is excessive, and that the $1 formerly exacted is sufficient to meet the expenses of administration of the law. It was felt also that the expenses of travel on attendance on medical meetings and the expenses of post-graduate study are legitimate deductions on income tax. The House of Delegates concurred in these recommendations of the Bureau.

We are constantly reminded that objectionable legislation is from time to time enacted which serves to increase the burdens of the medical profession, and leads to a condition deplored by all classes of people, of the disappearance of the doctors in smaller and less productive communities. These burdens, together with the greatly increased cost of medical education, has forced the former small town doctor to desert these communities and locate in larger and more productive towns, as a means of realizing some returns to meet these increasing costs and expenses. It is further to be observed that there is also a serious loss in the larger towns of the family doctor whose charges must be moderate to meet the small fees the majority of town dwellers are

able to pay, and take up special work which offers larger financial returns.

There was expressed as an undercurrent the thought that the Field Activities Committee should be discontinued and these activities should be centered in the Field Secretary—a service scarcely a year old, but which promises much. The writer believes that the committee on legislation should be endowed with authority to employ such aid as may be necessary to keep them informed as to pending legislation and be able to communicate such information to the county societies through a competent county committee appointed by the county society. In this way the general profession may not be taken by surprise, as sometimes happens. The State Society is now well organized. Through a watchful secretary and active committees the regular business of the Society is thoroughly co-ordinated. The Society is wise in selecting a strong Board of Trustees, whose duty it is to guard the property of the Society entrusted to them. Through the elevation of Dr. Powers to the presidency, the vacancy was acceptably filled by the election of Dr. M. J. Kenefick of Algona. Dr. J. W. Cokenower, who had served many years as chairman of the Board in a most efficient manner, declined an election, and Dr. O. J. Fay was elected to fill his place. The Board of Trustees as now constituted, consists of Drs. W. B. Small, Waterloo; O. J. Fay, Des Moines, and M. J. Kenefick, Algona.

The candidates for President as presented by the Nominating Committee, were Drs. Powers, Pearson and McManus. Dr. Powers having received the majority vote, after several ballots, was declared elected. The merits of the several candidates were so nearly balanced that the voter was in doubt as to his candidate.

The 1926 session will be held in Des Moines.

To the Editor:

Please allow me to say just a few words in The Journal, to the members of the Iowa State Medical Society.

The meeting just held in Des Moines was a very successful one. For those who were too busy to attend will say that more than 600 rather busy physicians did attend. The attendance was more than in any other session.

Every paper of the thirty-one on the program was read by the man who wrote it and the discussion was opened by the man designated by the Program Committee, with one exception, and he wired that he was sick.

Our eminent guests gave us very scholarly addresses of great value.

The local committees of the Polk County Medical Society gave most freely of their time and their well known hospitality. You are certainly under repeated obligation to the men of Polk county and I know that everyone acknowledges it.

There were many kind expressions of approval given to me personally, but I want to say that were it not for the enthusiastic and efficient work of your Secretary, Dr. Tom B. Throckmorton, the meeting could not have been the success it was. His efforts together with the thoughtful work of the Chairmen of Sections, Dr. Paul White, of Davenport; Dr. Frederick G. Murray, of Cedar Rapids, and Dr. Ira N. Crow, of Fairfield, and the cooperation of all the officers and committees made the meeting the success it was.

It only remains for the members to realize that next year can be made more profitable by all County Secretaries to be effective during the year and for them to see to it that only men are selected as delegates who will promise, when elected, to attend all sessions of the House of Delegates, May 12, 13 and 14, 1926.

Thanking everyone for his kind and generous approval and for the many evidences of sincere friendship I am,

Yours most gratefully,
Frank M. Fuller.

COUNCIL BLUFFS MEETING OF RAILWAY SURGEONS

An important meeting of railway and other surgeons was held at Council Bluffs, April 24, for the purpose of considering certain problems concerning the safety of transportation to passengers and employes. Among them were Dr. C. W. Hopkins, chief surgeon C. & N-W. Ry. Co.; Dr. S. C. Plummer, chief surgeon C. R. I. & P.; Dr. B. F. Lounsberry, chief surgeon C. M. & St. P. Ry. Co., and Dr. A. F. Jonas, chief surgeon U. P. Ry. Co., Omaha.

The morning session was held at the Edmundson Hospital Amphitheatre, where important subjects were discussed, at the close of which a luncheon was served. Following the luncheon the gentlemen visited Mercy Hospital. Too much praise cannot be given these two very modern institutions, which represent the highest ideals in hospital equipment and organization, and we feel that the profession of Council Bluffs is fortunately situated so far as facilities for high class professional work is concerned. To make such facilities effective, there must be a sympathetic cooperation on the part of the profession. This is exemplified in the fine clinic building equipped

with every facility for the conduct of scientific medicine and surgery in all their branches. We cannot go into all the details of its organization or management, but they appeared ideal. We were impressed with the idea that a profession so situated and co-ordinated serves to make the practice of medicine pleasant, agreeable and profitable. We do not need to go back very far to discover the reason for the present state of medical practice in Council Bluffs. We have in mind a group of medical men who laid the foundation of a broad and liberal practice and who year after year with strong and firm hands held in check any deviation from the straight path of professional honor, right and justice. The material was good and easily molded.

The afternoon session convened at the Clinic. Dr. C. W. Hopkins, chief surgeon C. & N-W. Ry.; Dr. S. C. Plummer, chief surgeon C. R. I. & P. Ry.; Dr. B. F. Lounsberry, chief surgeon C. M. & St. P. Ry., and Dr. A. F. Jonas, chief surgeon U. P. Ry., presented topics for discussion which occupied the remainder of the day. It was not a meeting for surgery alone, for, in an adjoining building were groups of men who carry the responsibilities of operating the railways, who were anxious to hear the message brought to them by the men connected with the medical and claims departments, in which they were deeply and personally interested. The time is already here when formal rules of conduct are not enough, but must be supplemented by personal contact, even if such contact and understanding should bring loss to the surgeon in fees and salary. The activities of the chief medical officers of railways has not only wrought marked changes in the welfare of individual employes, but also to the railways themselves.

IOWA STATE UNIVERSITY NEWS NOTES

Dr. William F. Boiler, professor of ophthalmology, has resigned from the staff of the college of medicine. He will be succeeded by Dr. C. S. O'Brien. Dr. O'Brien graduated from the University of Indiana in 1913. Since that time he has been on the staff at Johns Hopkins Hospital and at the Wills Eye Hospital, Philadelphia. He has become well known because of his ability and research work.

Members of the University Hospital staff who attended the recent meeting of the American Medical Association at Atlantic City, were Drs. Falls, Beye, Sharp, Dean and Griswold. Dr. Dean presented a paper before the section on head specialties and Dr. Griswold presented a paper before the section on public health.

The state laboratory is examining the heads of many dogs, cattle, hogs and horses for rabies. Such a large proportion of those examined are found positive that the rabies menace has become a real one. With the coming of hot weather there will probably be more bites by dogs and the spread of rabies thus facilitated.

To the Editor of the Journal of the Iowa State Medical Society:

It seems quite unwarranted that asking one to wholly rely upon God, the Creator and Benefactor of man, should be construed as an appeal to the credibility of an individual. And yet that is the essence of a declaration made by the writer of the article "The Art of Medicine" appearing in the May issue of your publication when he alleged that Christian Scientists live upon the credibility of the most enlightened people.

Healing through Christian science practice is accomplished only by a right understanding of God and man's relation to Him. To the Christian scientist the divine mind is the only source and means of relief from the discords of human experience including sickness and sin. Confidence in the Infinite should not occasion accusation of resorting to methods questionable and sinister, and such allegation is extremely unjust.

It cannot truthfully be said of Christian scientists that they misstate the cause of a malady (nor do they need to do so) in order to prove the rationality of the treatment given, as was further alleged by the writer mentioned. The results of Christian science practice furnish the proof of its efficacy, and likewise of the rationality of its application just as fruit distinguishes a tree in accordance with the maxim of the great Physician.

Your contributor's very frank admission, "Camouflage may be wrong and deceitful but woe unto him who practices medicine without some of it" may portray medical practice as he would have it observed, but at the same time reminds one of another pronouncement of "woe" written long ago and recorded in Isaiah 5:20, "Woe unto them that call evil good, and good evil". Neither camouflage nor any form of suggestion enters the practice of Christian science, as might be inferred from the article under review. But as stated on page xi of the preface to the Christian science text-book, "Science and Health with Key to the Scriptures" by Mary Baker Eddy, "The physical healing of Christian science results now, as in Jesus' time, from the operation of divine principle, before which sin and disease lose their reality in human consciousness and disappear as naturally and as necessarily as darkness gives place to light and sin to reformation".

For the privilege of presenting to your readers a correct statement regarding Christian science practice, I thank you.

J. Latimer Davis,
Christian Science Com. on Pub. for Iowa.
May 19, 1925.

May 26, 1925.

Dear Doctor:

County medical societies and individual physicians will be especially interested in an arrangement which has been made by the Field Activities Committee with the Iowa Tuberculosis Association and the Iowa Heart Association whereby demonstration or consultation chest clinics can be held without cost to the county societies.

These organizations will furnish examiners for tuberculosis, heart disease and all allied conditions.

It is the aim to have only a few patients (selected in cooperation with their family physicians) and to make the clinic a consultation primarily for the benefit of the physician. Of course another object is to educate the public at large to the necessity of early and frequent examinations by the local or family physician.

The expenses are divided between the local public health association or Christmas seal committee and the Iowa Tuberculosis Association. There is no expense to county medical societies or physicians.

If you desire to take advantage of this arrangement an invitation to hold the clinic, from the county medical society and signed by its president or secretary, should be sent to the Iowa Tuberculosis Association, 518 Frankel building, Des Moines. This association will then secure the consent of the local association and its agreement to assist in defraying the expenses and will make such arrangements as securing the clinicians, providing nursing assistance, clinical supplies, etc.

This service is made possible through funds derived from the annual sale of Christmas seals in your county and throughout the state.

Sincerely yours,

Walter L. Bierring,
Chairman, Field Activities Com.

January 24, 1925.

D. S. Fairchild, M.D.,
Clinton, Iowa.

Dear Doctor:

I am in receipt of your favor of January 22, inclosing a letter of I. H. Phillips, M.D., of Missouri Valley, Iowa, to Doctor Throckmorton, dated January 6, 1925, asking for an opinion as to the rights of Doctor Phillips, under the statements contained in his letter to Doctor Throckmorton.

The statements contained in Doctor Phillips' letter are very meagre, and I do not want to undertake to render an opinion thereon, as my final judgment in his particular case, without more information.

The Doctor says "About three months ago, two families near here were quarantined by me for suspected diphtheria. I treated them according to regulations".

It does not appear whether the quarantine was made lawfully or not. I do not understand that a private physician has the right to declare a quarantine. Assuming, however, that the quarantine was lawful, then the statute provides:

"In case any person or persons liable for the support of such person under quarantine shall be financially unable to secure the proper care, provisions, or medical attendance, it shall be the duty of the mayor or township clerk to procure such diseased person proper care, provisions, or medical attendance, while so quarantined. All bills for supplies furnished or services rendered by the order of the mayor or the township clerk, as herein provided for persons financially unable to provide for their sustenance and care, shall be allowed and paid for only on a basis of the local market price for such provisions, services, and supplies in the locality in which such services and supplies may have been furnished. All services and supplies furnished to individuals or families under the provisions of this action must be authorized by the local board of health or by the mayor or township clerk acting under standard regulations of such local board, and a written order, therefore, designating the person or persons employed to furnish such services or supplies, issued before such services or supplies were actually furnished, shall be attached to the bill when the same is presented for audit and payment. No bill for any expenses incurred for any person during quarantine or for disinfecting premises shall be allowed or paid except in cases removed to a separate house or house of detention, unless it shall be found that such person is financially unable to pay said bill."

The supreme court of Iowa has upheld this section and has held that the provision requiring a written order from the local board of health designating the person employed, shall be issued before the services or supplies are furnished, and shall be attached to the bill when presented for payment, is mandatory.

I have no way of knowing whether this statute has been complied with by Doctor Phillips or not.

If I knew why the board refused to pay the bill, I could answer the question more satisfactorily.

I may say, however, that under the law a physician can recover from the county for his services in attending a person under quarantine only when:

(a) The quarantine is legal;

(b) The person to whom the services were rendered or those persons who are legally liable for the support of such persons are financially unable to secure the proper care without public aid;

(c) The services rendered were upon an order of the mayor or township clerk, pursuant to a same regulation;

(d) The particular person has been designated in the order prior to the time he rendered the service.

If all of the foregoing things have complied with, the county is liable, otherwise not.

The Doctor says that his services were rendered about three months ago. I have assumed that they were rendered prior to the taking effect of the new code, which was on October 28, 1924. If they were rendered since that time, the provisions of the new code would cover them, but they are substantially the same as the provisions of the code which I have above set forth.

Yours very truly,

Chas. M. Dutcher.

Minutes of the Iowa State Medical Society
Seventy-fourth Annual Session
May 13, 14, 15, 1925
Des Moines

Wednesday, May 13, Morning

The Seventy-fourth Annual Session of the Iowa State Medical Society was held in Hotel Fort Des Moines, Des Moines, May 13, 14 and 15, 1925.

The Society was called to order at 9 o'clock by the President, Dr. Frank M. Fuller, Keokuk. The meeting was opened with invocation by Dr. Elmer E. Higley, Ames, Pastor, Methodist Episcopal Collegiate Church.

The address of welcome for the city was given by Hon. Lafe Young, Jr., Des Moines, as follows:

Mr. President, Members of the Medical Fraternity of Iowa:

Des Moines appreciates very much the fine compliment which you extend to her by meeting here. The whole world honors and respects the medical profession. As some one has aptly said, we could not live without you. Those of us who live here are exceedingly proud of our city. We feel there is no city in America with a finer public spirit, we believe there is no city in the world in which there is a greater average distribution of wealth and culture, and that statement is worthy of analysis. Des Moines has a wonderful system of hospitals, and we have a healthy, happy people. Possibly many of you do not know that, of the large cities of the country, Des Moines ranks first in freedom from typhoid. Des Moines is famous as an insurance center, the average amount of premiums received in behalf of insurance exceeding $300,000 per day. Most of you do not know perhaps that Des Moines is considerable of a city from a manufacturing standpoint. There are over 400 factories in Des Moines with more than 10,000 employes, and the two largest factories from the standpoint of prosperity have grown up in the last ten years.

J. M. Barrie wrote a little story called "Mary Rose", in which he tells about an island in the group known as the Hebrides and he called it the island that would like to be visited. And here we like to be visited. We want Des Moines to be a very friendly city, and it is. We hope you will have a splendid time in Des Moines both from the scientific standpoint and from the standpoint of real pleasure, and that you will desire to come again and very often.

Dr. William W. Pearson, Des Moines, President of the Polk County Medical Society, on behalf of the local profession extended to the visiting members the following words of welcome:

Mr. Chairman, Members of the Iowa State Medical Society:

The members of the Polk County Medical Society appreciate your presence here. The work of the medical profession is extremely scientific, and, while I do not wish to boast, I want to impress you with the fact that the growth of our medical fraternity in Des Moines during the last ten years is something to be proud of. We take great pride in feeling that in every branch of the practice of medicine we have members who stand up well in any society of their chosen specialty. We are pleased to have with us on this occasion members from over the state who are deeply interested in the scientific subjects to be presented here, imparting and receiving information that will better equip us to care for the individuals who consult us.

My first impression of the State Medical Society was gained through noting the activities of outstanding men in that group who were directing the destiny of the profession in the state. I saw that they were good students and scientific men, and I could not help but appreciate the influence that they were exerting in behalf of the profession. I have always believed that we should do our work as professional men and forget the financial side, and that is logical, because the better we take care of the one the more we will receive from the other. It is necessary for us to think of the profession in many ways and to seek to control influences that interfere with its proper functioning. For example, the activities of the State Legislature. Many influences are constantly pressing in one direction and another to interfere. I refer to this question not from a selfish motive, but from the viewpoint of the ultimate good not only of scientific medicine, but of the public and especially of the sick. That is what we are here for—to consider the proper care of the sick and to learn how we may best serve them. I was absent during the last session of the Legislature, but am happy to say that we have with us today one member who has rendered excellent service. If we could always have a man of that type to look after the proper scientific interests of the ethical physician it would not be necessary for us to worry about the opportunity to practice medicine as it should be practiced. I refer to Dr. Powers, who is a member of the Legislature and has been wide awake to the needs of the profession. He has guarded the interests of the scientific practice of medicine in this state in a way that the profession should appreciate, and I know that you would all do so if you were familiar with the facts as some of us are.

As already stated, the members of the local Society are delighted to have the meeting in Des Moines. We gain a great deal from your presence here, not only in friendships, but through the interchange of ideas pertaining to our every-day work, and I hope you will absorb something from us. We know that the profession of this state stands well in comparison with that of any state in the Union. We have a right to speak of these things among ourselves, not boastingly, for if that were not the case we would want to analyze the situation and ask ourselves,—Why is it we are not competent? Every time we come together in these meetings we gain a few more ideas, we are better prepared, and we have more

to take home with us and employ in the case of emergency in the scientific practice of medicine. That is our duty. Why should not this state have a profession to stand up with any of them? In traveling over countries that are more or less bare as I see it, fictitious in their claims, the idea seeming to be—I boost you and you boost me, in commercial organizations, etc., and knowing the percentages in the matter of harvest, delivery, etc., I see so much that is false in connection with all this that when I get back to Iowa and note the wealth, stability, and everything that is to be desired from a climatic and inherently sound financial standpoint, such as is represented by our farming lands, etc., I ask myself why shouldn't we have the best? Every time I go away from Iowa I am impressed with that one thing. Gentlemen, we may have our depressions in a business way, but that should not bother us as medical practitioners. I think it is unfortunate that some members of the profession wish to become millionaires. If we do our work well we will have a competence and enough to live on, and that is all we should wish for. I have been impressed with the difference between our citizens and those in the old countries. We are always striving for wealth, while in the older countries there is less of that The men there are doing excellent work, but are not chasing the elusive dollar as we are doing here. I suppose this factor will right itself in time, but when we reflect upon conditions here we are little disposed to criticize ourselves for it. Ultimately I think it will be different.

The members of the Polk County Medical Society wish to entertain the visiting members, their wives and friends, in a way that will make it an object for them to come here for a holiday whenever they feel like it. It is the desire of the local men to do anything they can to help make our meeting a success.

Dr. James F. Edwards, Ames, responded to the welcome extended by the local representatives of the profession, as follows:

Mr. President, Fellow Members: I feel hardly equal to giving an adequate answer to the welcome we have received this morning. Those of us who were here two years ago when the Tri-State meeting was held, and also those who have attended former meetings of the State Society in Des Moines, realize that this really is one of the greatest convention cities in the United States. The people of Des Moines have always been especially anxious to make meetings of the State Medical Society the success that they have been.

I was deeply impressed by the words of the speaker who has just closed when he said that the work of the medical profession is one of service rather than for the benefit of the individual doctor. This has always been the rule of the Iowa State Medical Society.

We are deeply grateful for the welcome that has been extended to us. When we go away from here filled with medical lore, we will, I am sure, carry with us a sense of deep appreciation for the welcome that you have given us.

Dr. William R. Hornaday, Des Moines, read a paper on "Some Observations on the Management of Cystitis". Discussed by Drs. William Jepson, Sioux City, and B. L. Knight, Cedar Rapids.

Dr. Conrad R. Harkin, Osceola, read a paper on "Aspects of Disturbed Thyroid Function". Discussed by Drs. Cyril G. Field, Fort Dodge; D. J. Glomset, Des Moines, and by Dr. Harkin in closing.

Dr. James F. Chalmers, Fort Madison, read a paper on "Industrial Surgery", which was discussed by Drs. Peter A. Bendixen, Davenport; William Jepson, Sioux City; Frank A. Ely, Des Moines; Charles H. Magee, Burlington, and M. J. Kenefick, Algona, the essayist closing the discussion.

Dr. Don M. Griswold, Iowa City, presented a paper on "Interpretation of Laboratory Reports". Discussed by Drs. Vernon L. Treynor, Council Bluffs; B. L. Eiker, Leon; James F. Chalmers, and Dr. Griswold in closing.

Dr. William C. Newell, Ottumwa, presented a paper on "The Treatment of Compound Comminuted Fractures", which was discussed by Drs. Charles H. Magee; D. C. Brockman, Ottumwa; J. F. Herrick, Ottumwa, and Paul E. Gardner, New Hampton, Dr. Newell closing the discussion.

Wednesday, May 13, Afternoon

The meeting was called to order at 1:30 o'clock by the President.

Addresses of the Section Chairman were presented as a Symposium on "The Diagnostic Net", as follows:

"Medical Viewpoint", Dr. Frederick G. Murray, Cedar Rapids, Chairman of the Medical Section.

"Surgical Viewpoint" (with lantern demonstration), Dr. Paul A. White, Davenport, Chairman of the Surgical Section.

The address in Medicine was presented by Dr. Robert B. Preble, Professor of Medicine, Northwestern University Medical School, Chicago; subject, "Some Fundamental Facts in the Diagnosis of Heart Lesions".

At the conclusion of Dr. Preble's Address, the President announced that at a meeting of Iowa physicians held in Des Moines the previous evening (May 12), there was organized a society for the study of the heart, made up of members of the Iowa State Medical Society and working indirectly through it, the organization to be known as the Iowa Heart Association, and stated that members desiring to join the Association might do so by registering their names.

It was moved by Dr. Walter L. Bierring that the Society express its appreciation of Dr. Preble's interesting and instructive address by a rising vote. A rising vote of thanks was unanimously extended to Dr. Preble.

President Fuller retired to attend the meeting of the House of Delegates, and Vice-President T. U.

McManus presided during the remainder of the session.

Dr. Raymond S. Grossman, Marshalltown, read a paper on "The Early Recognition and Treatment of Arsenical Poisoning Due to the Administration of Neo-Arsphenamine". Discussed by Drs. Clarence E. Van Epps, Iowa City, and Murdock B. Bannister, Ottumwa.

Dr. Raymond L. Latchem, Sioux City, presented a paper on "The Hydronephrotic Kidney", with lantern demonstration.

Dr. Robert H. Lott, Carroll, presented a paper on "Perinephritic Abscess".

These papers were jointly discussed by Drs. Nathaniel G. Alcock, Iowa City, and A. G. Fleischman, Des Moines, Dr. Lott closing the discussion.

Wednesday, May 13, Evening

At 7 o'clock the Fellows of the Society, members of their families, and friends, convened in the banquet hall for the social evening annually observed. The musical program, under the direction of Mr. George F. Ogden, was furnished by the Chanters of Za Ga Zig Temple, Des Moines, and Paul Garber's Orchestra, following which President Fuller presented the speaker of the evening, Hon. F. F. Faville, Chief Justice, Supreme Court of Iowa, who gave a masterly address on "What Next"?

Thursday, May 14, Morning

In the absence of the President due to meeting of House of Delegates, Vice-President McManus called the meeting to order at 9:15 o'clock.

Papers were read, as follows:

"Incidence of Meckel's Diverticulum", R. C. Coleman, Estherville. The paper was discussed by Drs. Charles J. Rowan, Iowa City, and William C. Newell, Ottumwa, the essayist closing the discussion.

"Diseases of the Pancreas, with Case Reports", Dr. Aldis A. Johnson, Council Bluffs. The paper was discussed by Drs. Fred M. Smith, Iowa City; D. J. Glomset, Des Moines; Emil C. Junger, Soldier, and Donald Macrae, Jr., Council Bluffs, Dr. Johnson closing the discussion.

The President took the Chair.

"General Practice and its Relation to Preventive Medicine", Dr. Walter J. Connell, Dubuque.

"Preventive Medicine in Rural Communities", Dr. John H. Chittum, Wapello.

The last two papers were jointly discussed by Drs. Daniel C. Steelsmith, Dubuque; H. T. Haeren, Story City; G. P. Reed, Davis City; John F. Loosbrock, Lacona; Don M. Griswold, Iowa City; Milo M. Loomis, Manilla, and by Drs. Connell and Chittum in closing the discussion.

The President appointed the following members a committee on State Medical Library, said committee to take action in the House of Delegates the last day of the meeting: B. L. Eiker, Leon; C. E. Ruth, Wm. E. Sanders, and J. S. Weingart, Des Moines.

"Caecal Ptosis", Dr. Kenneth L. Johnson, Oskaloosa. The paper was discussed by Drs. John T. Strawn, Des Moines, and J. F. Herrick, the essayist closing the discussion.

"Essentials in Drug Therapy", Dr. George B. Crow, Burlington. The paper was discussed by Dr. Robert L. Parker, Des Moines.

Thursday, May 14, Afternoon

The meeting was called to order at 1:30 o'clock by the President.

In presenting the emblem of presiding officer to President Fuller, Secretary Throckmorton said:

"Some twenty-one years ago it was my good fortune, sir, to have the pleasure of first meeting you. You were then an instructor and I was a student. I little thought at that time that it would ever come within my province to serve in the capacity of Secretary of an organization wherein you were the official head of the Iowa profession. I am quite sure that, during the twenty-one years that have elapsed since I first met you, there has sprung up between us a friendship which I feel is lasting. It has given me, sir, great pleasure to serve in the capacity of Secretary under your administration and to be of such service to you as it has been possible for me to render. It therefore gives me pleasure, on behalf of the Iowa State Medical Society, to present to you the symbol of your office, a gavel; a gavel to be used in helping you to maintain the dignity and decorum of this body and of the legislative body over which you preside. I am sure I speak on behalf of the members of this association when I stress the deep regard we all feel for you as a man, as a medical practitioner, and as the one whom this Society selected last year to govern and preside over the destinies of the profession of the state during the past year. Will you please be so kind as to accept from the Iowa State Medical Society this little token of love and affection?"

President Fuller: "Gentlemen, it is unnecessary for me to say anything in appreciation of the words of kindliness and friendship that have been expressed by my very good friend, Dr. Throckmorton, the official Secretary of this Society. And it is not necessary for me to say anything to express to you my appreciation for the honor you have conferred upon me. I will say frankly that there never has been anything that has come to me in my entire term of professional life that has given me so great a sense of elation and pleasure as to be selected the presiding officer of this body. I make that statement without egotism, but in a spirit of humility, because I feel there is no one but feels his lack in ability and capacity to fulfill properly the office of President of this great organization.

"I thank you for this memento of a service which has been a great pleasure to me, and I shall treasure it through all the years of my life. The thought that comes to me just now is that I may hand it down, as representing the memory of a very pleasant year, to my son, who begins the study of medicine next year. I thank you."

Dr. Herbert R. Sugg, Clinton, presented "A Re-

port on Thirty-seven Cases of Acute Poliomyelitis Treated with Rosenow's Serum". The paper was discussed by Drs. August R. Anneberg, Carroll, and Don M. Griswold, Iowa City, the essayist closing the discussion.

A symposium on "The Thyroid" was presented, as follows:

"Medical Considerations", Dr. Elmer G. Senty, Davenport.

"Surgical Considerations", Dr. Charles J. Rowan, Professor of Surgery, Iowa State Medical School, Iowa City.

"Radiation Considerations", Dr. Thomas A. Burcham, Des Moines.

Discussion of Paper No. 1 of the Symposium was opened by Dr. Walter L. Bierring, Des Moines; of Paper No. 2, Dr. Donald Macrae, Jr., Council Bluffs; of Paper No. 3, Dr. William W. Bowen, Fort Dodge. General discussion was participated in by Drs. D. J. Glomset; Charles J. Magee; Lloyd T. Reid, Gravity; Elbert J. Watson, Diagonal; Frank M. Fuller, Keokuk; S. L. Clabaugh, Gravity, and Conrad R. Harkin, and, in closing, by Drs. Senty, Rowan, and Burcham.

The Address in Surgery was then given by Dr. Walter E. Dandy, Associate Professor of Surgery, Johns Hopkins Hospital, Baltimore: Subject, "The Diagnosis of Brain Tumor".

The Secretary: I feel that each and every one of us has enjoyed very much this able presentation by Dr. Dandy, who has come out to Iowa to meet this association. He has given to us freely of his time and talent. We cannot repay him either for his talent or for his time, but as a means of at least showing our sense of appreciation I move that we extend to Dr. Dandy a rising vote of thanks.

A rising vote of thanks was unanimously tendered to Dr. Dandy for his presentation.

Dr. Francis R. Holbrook, Des Moines, gave an address on "The Factor of Intracranial Pressure in Head Injuries" (with lantern demonstration). No discussion.

Dr. T. A. Moran, Melrose, read a paper on "Rabies, with Report of a Case Terminating Fatally after Pasteur Treatment". Discussed by Dr. Samuel T. Gray, Albia.

Thursday, May 14, Evening

The meeting was called to order at 8:30 o'clock by the President.

Dr. Thomas B. Holloway, Professor of Ophthalmology, School of Medicine of the University of Pennsylvania, Philadelphia, Guest of Section on Ophthalmology, Otology and Rhinolaryngology, gave an address on "Some Types of Intraocular Tuberculosis". At its close an ovation was spontaneously accorded to the speaker of the evening.

With Vice-President McManus presiding, President Fuller presented his Address, at the close of which the audience expressed its approbation by a fitting demonstration of approval.

President Fuller: Ladies and gentlemen, it was my pleasure to meet Governor Hammill in the lobby and invite him to come to the session. We are highly honored to have him here, and we will not only be honored, but greatly pleased if the Governor might have some word to convey to us as representative citizens of the State of Iowa.

Governor Hammill:

Mr. President, Ladies and Gentlemen:

First of all, I want to congratulate the members of this Society upon the accomplishments of your great profession, and I also want to congratulate your President on the splendid message he has just delivered on your profession. (Applause.) It has shown its growth and development from the beginning, and if there is anything needed today more than anything else it is an educational program setting forth what has been accomplished in medicine in the way of service to the people of this great state and to the nation. If an educational program of that character were inaugurated generally, you would not have in competition with you, as you have today, men who are claiming to heal or who are attempting to heal the sick. And in this connection I just want to leave this thought with you: I was a member of the 33d and 34th General Assembly, at which time we had before us many measures to admit to practice men who were employing various methods of healing in the state, and I at that time took the position that if a man went out to heal the sick there should be required of him certain qualifications, not for the purpose of protecting the profession, but for the protection of the men and women who might seek to be treated or healed by him. It has been my observation that a man or woman who becomes ill, is looking for almost any kind of relief from any place possible with the hope of finding it.

Just another thought, and that is the matter of a Board of Health for the building up of this department in the state. I firmly believe that the Board of Health in Iowa should be made one of the important departments of government. I am thoroughly impressed with the idea that the purpose and intent of a Department of Health on the part of the state is to do as much as is possible in the way of preventive medicine, for this should be the dominant thought insofar as the department is concerned. And it is my purpose, not only so far as the Department of Health is concerned, but in every other department of government in Iowa, to give to the state the most efficient government in each and every department. In order that we may be enabled to accomplish this, we are going to ask the cooperation of such men as you are, to build up not only the Department of Health, but also the other departments of government, and I simply ask that in these matters we may have your cooperation.

I am glad to have this opportunity to meet with you. I did not intend to talk to you when I came in, I simply expected to have opportunity to enjoy your program. I am glad, however, to extend to you this word of greeting and bid you Godspeed in your profession. I thank you.

A buffet luncheon nad smoker followed the scientific session, with a most enjoyable program of entertainment.

Friday, May 15, Morning

The President being in attendance at meeting of the House of Delegates, Vice-President McManus called the meeting to order at 9 o'clock.

Papers were read, as follows:

"Conservation of the Uterus in Prolapse", Dr. Bush Houston, Mason City. Discussed by Dr. Murdock B. Bannister, and by the essayist in closing.

"Cooperation in the Management of Peptic Ulcer" (with lantern demonstration), Dr. Wesley E. Gatewood, Iowa City. The paper was discussed by Drs. Charles J. Rowan; John H. Chittum; the discussion being closed by the essayist.

"Coeliac Disease", Dr. Fred Moore, Des Moines. The paper was discussed by Dr. Philip C. Jeans, Iowa City; Dr. Moore closing the discussion.

The House of Delegates having adjourned, President Fuller presided during the remainder of the session.

Dr. W. C. Woodward, Executive Secretary, Bureau of Legal Medicine and Legislation of the American Medical Association, Chicago, addressed the Society on "The Physician's part in the Legislation Program". At the close of the presentation, the President, on behalf of the Society, expressed appreciation for the valuable message which Dr. Woodward had given to the profession of the state.

Dr. John W. Billingsley, Newton, presented a paper on "Ectopic Pregnancy". Discussed by Drs. Emil C. Junger; M. J. Kenefick; L. C. Kern, Waverly; Albert E. Conrad, Decorah; Walter E. Baker, Des Moines; Paul E. Gardner, New Hampton, and Harold A. Spilman, Ottumwa, the essayist closing the discussion.

Report of the transactions of the House of Delegates was then presented by the Secretary, as follows:

SUMMARY OF PROCEEDINGS OF THE HOUSE OF DELEGATES

"The By-Laws decree that the Secretary shall make a report of proceedings of the House of Delegates to the General Assembly for its consideration and ratification. I will simply state, and I think without fear of contradiction, that the past year has been one of the best in the history of the Iowa State Medical Society, for more enthusiasm and a greater degree of interest in the medical profession have been shown by members throughout the state than have been manifest at any time within the period during which I have been associated with its affairs. This is reflected, I feel quite sure, in the attendance, not only at the meetings of the General Assembly, but also in the meetings of the House of Delegates. For instance, we have registered at this session 762 members, which is, I think, the largest registration in the history of the organization. As I pointed out to the members of the House of Delegates, a survey of the attendance of officers and delegates at its meetings in the eight years during which I have served as Secretary, reveals the fact that at only one meeting in that period did we have an attendance of 60 out of a possible 101 members who were entitled to be seated in the House. At the meeting this year we had in attendance at the first day's session of the House 88 officers and delegates; the second day we had an attendance of 87, and the third day an attendance of 73, which I think without any question reaches a high water mark in the history of the meetings of our legislative body.

"No measure of any particular importance was passed or presented at the first day's session. There were submitted simply the written reports of the Secretary and the Treasurer, the Trustees and Council, and some of the Standing Committees.

"The work of the second day was largely of a routine nature. At this session there came before the House, for consideration, the possible appointment of a committee on military affairs. Surgeon-General Ireland is very anxious to have contact with the various state associations from the Surgeon-General's office and has recommended that the House consider the possible appointment of a committee on military affairs. Therefore, during the coming year, a committee consisting of Drs. Conkling, Macrae and Spilman, will meet and formulate such plans as it may deem necessary for the establishment of such committee, presenting their report at the next session.

"A question was raised in the House as to why physicians should be annually taxed for renewing their licenses, similarly as dogs and other blooded animals of the state are taxed. Also some questions were raised, and personally brought to my attention by my good friend Dr. Woodward of the home office at Chicago, as to why a physician should be obliged to pay annually a narcotic tax of $3, when prior to the war we were charged but one dollar. I will say for your consideration that Dr. Woodward has for a considerable period of time been making a valiant fight at the home office in trying to bring pressure to bear upon the President and Congress to induce them to recognize that this tax is discriminatory and unjust, that the tax was a war measure, and that as the war is over and deductions in other things have been made, physicians should not be obliged to pay a narcotic tax of $3. It is not the $3 we are concerned about, but the principle of the thing.

"Dr. Woodward has also used every means at his command in addition to the machinery of the home office in trying to bring about some consideration on the part of Congress as to the advisability of allowing physicians the necessary expenses incident to attendance at meetings of societies of this character, both state and national. If we can as a Society get behind what the home office is trying to do for our good, I am quite sure the President and the Congress will wake up to the fact that the physician who spends time and money in attending meetings abroad or in this country should be en-

titled to the necessary expenses incident thereto, because he comes back to his community and gives to the people the beneficial things he has gained while in attendance at such a meeting. A merchant sends men to New York and Chicago and the amount expended on the trip is deducted as necessary expense. Then why should not physicians receive the same courtesy? These were some of the points considered by the House of Delegates.

"As regards the session of today, the important thing of course was consideration of the candidates proposed by the nominating committee. For the office of President-Elect the names of Dr. T. U. McManus of Waterloo; Dr. W. W. Pearson of Des Moines, and Dr. T. E. Powers of Clarinda were presented; and Dr. Powers was elected as President-Elect for the ensuing year. I will state, however, that after the first ballot had been taken one of the delegates from Polk County requested that the name of Dr. Pearson be withdrawn, as he had not wished his name to be presented as a candidate. It was then moved that the House make the election of Dr. Powers unanimous, and I am sure this action meets with the approval of the General Assembly.

First Vice-President, Dr. F. C. Mehler, New London.

Second Vice-President, Dr. E. G. Murray, Cedar Rapids.

Secretary, Dr. Tom B. Throckmorton, Des Moines.

Treasurer, Dr. A. C. Page, Des Moines.

Dr. Oliver J. Fay was elected a member of the Board of Trustees, and since Dr. Powers, who has served on the Board of Trustees, had been chosen as President-Elect, Dr. M. J. Kenefick was elected to fill the unexpired term of Dr. Powers on the Board of Trustees.

Dr. M. N. Voldeng, Woodward, was returned to his post of duty as Delegate to the A. M. A., and Dr. J. W. Harrison was elected as his Alternate.

"No special change was made as regards the standing committees.

"Des Moines was again selected as the meeting place for the annual session next year, the dates being May 12, 13 and 14.

"A member raised the question as to why Des Moines should be imposed upon so much in making preparations for and taking care of physicians, wives and guests who come each year to this meeting. I can assure you, on behalf of the committee of arrangements and the members of the Polk County Medical Society, who, by virtue of their office have something to do with helping to entertain you when the session is held here, that it is a pleasure to have you come. Des Moines is centrally located, means of ingress and egress are ample. We readily recognize the geographical location as being one which would naturally draw the greatest attendance. Therefore I assure you that we again will welcome the return of the annual session of the Iowa State Medical Society to Des Moines, and I feel, without fear of contradiction, that the Polk County Medical Society and the members of the Committee of Arrangements will do everything in their power to make the coming year even greater and better than the meeting which is now being brought to a close."

In inducing President-Elect S. A. Spilman into the office of President of the Iowa State Medical Society, the retiring President said:

"While you come here, Mr. President, apparently under arrest, I am going to sentence you to one year of good service, hard service, but a sentence which will bring with it a pleasure that I know cannot be excelled by anything else that you will have had in your medical experience. If you shall have, Mr. President, the pleasure and the cooperation that I have had here, if you will have the response to every call that you make upon every man in this Society and in the medical profession of the state such as I have had, I can assure you that your term of service during the coming year will be such that you will have a lasting feeling of gratitude towards the men who have raised you to this high and honorable position. Therefore I present you as President of this Society."

President Spilman: "I thank you, Dr. Fuller, for these kind words. I cannot express to the members of the Society my deep gratitude for the high honor you have conferred upon me. I can only ask and believe that I shall receive the earnest support of every member of this great body. I thank you."

In presenting President-Elect Powers, the President said:

"Mr. President-Elect, we are happy to greet you on this occasion. If you look forward to the coming year as I looked forward to it, you will not perhaps be as unhappy as when you assume the task that I now have assumed."

President-Elect Powers: "I assure you that it is a privilege to have opportunity to stand here and express to you my sincere gratitude for the honor you have thus conferred upon me. To be called upon to preside over the deliberations of a scientific body of men such as this, which I consider is not surpassed by any state medical organization in the Union, is an honor that I deem greater than any political honor the state could possibly confer. All the worth-while activities that are carried on in this world are done for the well-being of mankind, and of those activities the most important one is the physical and moral welfare of the individual members of society. This is the duty of the medical profession, and at this closing hour of the session I desire simply to say that if I attain any degree of success whatever in presiding over your deliberations it will be due to your cooperation, which I earnestly ask of every member of the Society."

Dr. Fuller: "While my official duties have terminated, I feel that it would be the basest ingratitude to leave without just one word—a word of gratitude, a word of satisfaction that I feel for the uniform help and courtesy that have been granted to me. There have been many expressions of appreciation relative to the character of the meeting we have had. I take none of those to myself, for the success

of the meeting has been due to the efficient work—practically solely the efficient work—of our remarkable Secretary, Dr. Tom B. Throckmorton, assisted very ably by the Chairmen of your Sections. These men, in selecting the essayists and making up their program, most carefully considered the talent of the state, selecting members capable of presenting subjects that would be valuable to you in your deliberations. And so I wish to thank the Secretary and the Chairmen of the Sections on Medicine, on Surgery, and on Ophthalmology, Otology and Rhinolaryngology, most cordially and heartily, and express to them my sense of appreciation for the work that they have done, without which there could not have been such a successful meeting as we have had here in the last three days. Therefore as I retire from this highest office in the profession of Iowa, I want to express very sincerely my sense of gratitude to you all, and I thank you. I will treasure through all my life the thing which this gavel will always represent to me, and that is the professional friendship, and, more than that, the personal friendship of the men of this Society who have so highly honored me."

The Secretary: "As most of you know, I have no time to attend the meetings of the General Session. I regret very much that I did not have opportunity to hear the address by Dr. Woodward, but which I know was well worth while. And I take this opportunity of asking that we extend to the representative of the home office our sincere thanks for the things which I know he has ably given to us this morning."

A rising vote of thanks was extended to Dr. Woodward for his presentation.

The meeting was adjourned, sine die.

Tom B. Throckmorton,
Secretary.

Transactions House of Delegates Iowa State Medical Society

Seventy-Fourth Annual Session May 13, 14, 15, 1925 Des Moines

First Meeting, Wednesday, May 13

The House of Delegates met on the eleventh floor of the Hotel Fort Des Moines and was called to order at 3:30 p. m. by President Fuller.

Roll call showed the presence of 71 delegates and 17 officers, making a total of 88. This is the largest representation of officers and delegates within the knowledge of the Secretary.

The President announcing that a quorum was present, the House then proceeded to the transaction of business.

The minutes of the Friday morning session, held in Des Moines, having been published in the July, 1924 issue of the Journal, were considered to have been given sufficient publicity, and were accordingly held approved as published.

REPORTS OF OFFICERS

The Secretary, Dr. Tom B. Throckmorton, presented his report, which, upon motion duly seconded and carried, was accepted and such portions of the same as referred to finances were referred to the Finance Committee.

REPORT OF THE SECRETARY

To the Members of the House of Delegates of the Iowa State Medical Society:

The following report for the year 1924-25 is respectfully submitted:

Membership

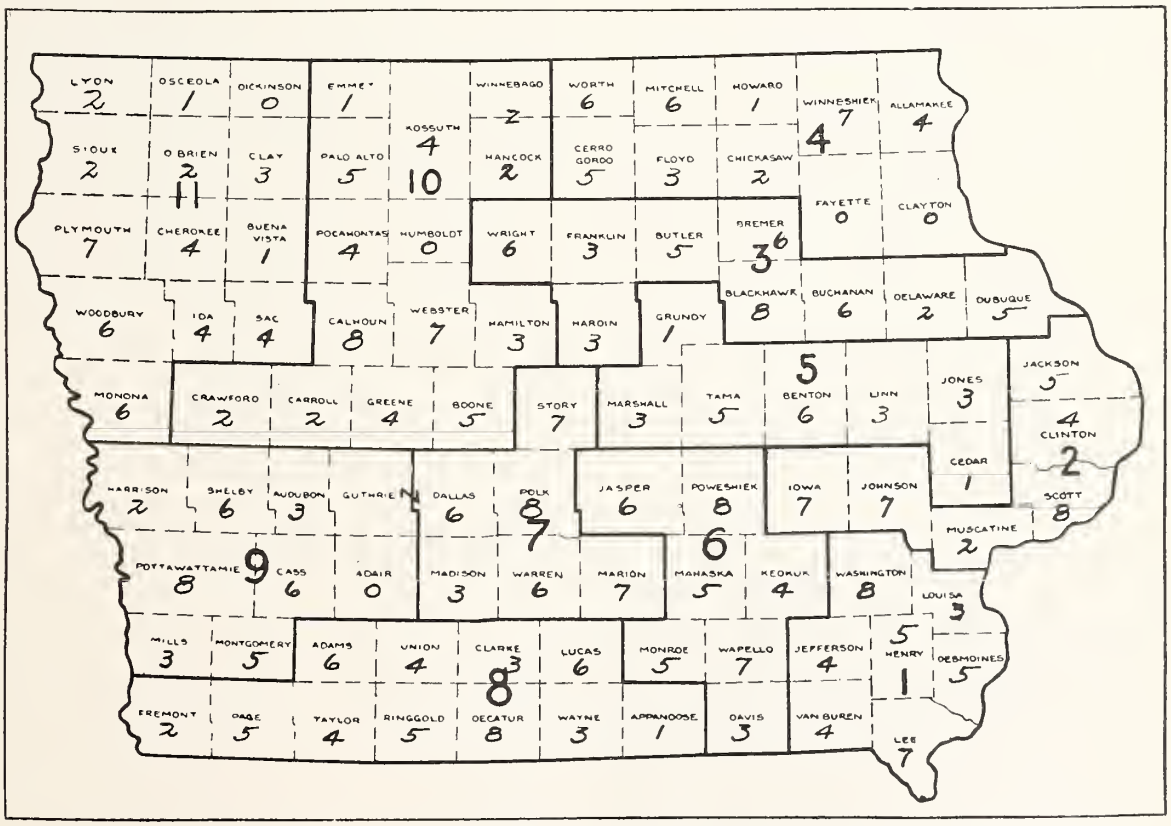
The membership of the Society during the past year has made a small but appreciable gain. In 1916, at which time I took over the office of Secretary, the total membership was 2200. Since that time there has been a steady and healthy growth in membership, except during the war period at which time quite naturally a decrease occurred, with later a reaction for the better. In 1918 the membership was 2185, the total number of physicians in the state being 4004. Of this number only 54 per cent were members of the State Society. Since 1919 the membership increase has been steady, although the number of physicians in the state has steadily decreased. The total increase in membership during the nine years of my incumbency is 203, representing on the whole about a 10 per cent increase in spite of an ever-lessening number of physicians within our commonwealth. The last edition of the American Medical Directory—1923—accords to Iowa 3490 physicians. During the same year our membership was 2397, representing a percentage of over 68 as members. At present our Society is composed of over 2400 members, representing physicians who are licensed and who are non-sectarian in their method of practice. To just what extent our Society may be able to increase its membership is problemmatical, but it can be nought but good omen to note an ever-increasing membership in spite of an ever-lessening number of physicians within the state. Already 2320 members have paid their dues to date and I feel it may be stated with certainty that our membership for the coming year (1925-1926) will surpass that of any previous year—perhaps by nearly a hundred.

A number of reasons may be ascribed for our continued growth as a Society. The increased activity of County Secretaries, supplemented by encouraging and helpful efforts on the part of the Councilors, perhaps has done more to hold the interest of members and to encourage them in retaining their connection with organized medicine than anything else. I cannot say too much to the credit of those Secretaries and individual Councilors who have been of untold value and help to me in keeping every one of the ninety-seven component County Societies functioning. True, some few County Societies have been seemingly moribund or lethargic, but with persistent determinedness of purpose that no break in the ranks be allowed to occur, our organization has continued 100 per cent as far as active County Societies is con-

cerned. This record may be equaled by some sister State Societies, but it is a record which cannot be beaten, and is one in which we, as members, may take just pride. Again, the office of your Secretary has persistently done everything legitimate to retain the membership of a waning member, or to bring into organized medicine any worthy qualified physician. There can be no question but that those men, who were entrusted to draw up our Constitution and By-Laws, clearly had the foresight of justice in mind when to the County Societies themselves was entrusted the power of determining the qualifications for membership; and be it said to the honor of our Society that not once has it, as an institution, attempted to dictate to a County Society as to what it, as the only portal of entry to organized medicine, should do concerning the qualifications of its members or of those who sought admission into its ranks.

House of Delegates

That we have a right to take just pride in our membership and in those things which we, as a Society, have accomplished goes without saying, but there are some things in which room for improvement yet remains. Among these minor delinquencies may be mentioned, with propriety, the attendance at the meetings of the House of Delegates by those who by virtue of their office or by election as delegates are entitled to a seat in the House and to take a part in its legislative deliberations. The Constitution decrees that the House of Delegates shall be the legislative and business body of the Society, and shall consist of (1) delegates elected by the component County Societies, and (2) ex-officio, the officers of the Society as defined in the Constitution. The latter consists of a President, two Vice-Presidents, a President-elect, a Secretary, a Treasurer, eleven Councilors and three Trustees. Thus ninety-seven component County Societies are entitled to send delegates, to the total extent of 102, to represent them, and the combined officiary to the extent of 20 are also given an opportunity to take an active part in the proceedings of this House. Let us consider, for a moment, to what extent this privilege of membership in the House of Delegates has been put to use. Consultation of roll calls made during the past eight sessions of the House shows that only eight County Societies have been consistently represented during this time. This does not mean that even these eight Counties were represented at every meeting; it only means that at each annual session, a delegate or alternate to the delegate was present at one or more of the meetings and represented his County Society. The eight Counties who have a clear record as to attendance are Blackhawk, Calhoun, Decatur, Polk, Poweshiek, Pottawattamie, Scott and Washington. An acute analysis of the attendance of delegates from these County Societies shows that out of twenty-four roll calls Scott County answered to twenty-one, Calhoun and Pottawattamie



Map showing Districts of the Councilors (bold faced type); also the number of Sessions at which delegates have been in attendance (indicated by small faced type) during the past eight years at meetings of the House of Delegates.

to twenty each, Blackhawk and Washington to seventeen each, Poweshiek to sixteen, and Decatur and Polk to fourteen each. On the other hand, five County Societies—Adair, Clayton, Dickinson, Fayette and Humboldt—have had no representation at any time during these past eight years. None of these Societies now under consideration have been suspended or any charter revoked for failure to send in their assessments as required, but still not once during this time has a delegate or alternate seen fit to grace the House with his presence and to represent his County Society.

With these two extremes before us, let us consider briefly from a statistical point just what the attendance in the House of Delegates has been during the time I have served as Secretary. The following, I believe, will be sufficient evidence for the point at hand and needs but little explanation.

Attendance—House of Delegates—Past 8 Years

Year	Day 1	Day 2	Day 3	Possible Max.
	OFFICERS			
1917	No report			20
1918	7	9	9	20
1919	14	10	10	20
1920	14	12	13	20
1921	13	13	11	20
1922	13	10	10	20
1923	15	15	12	20
1924	17	13	13	20
Average	13	12	11	20
	DELEGATES			
1917	55	50	38	100
1918	37	25	22	100
1919	42	37	32	100
1920	51	33	35	101
1921	53	35	41	101
1922	44	43	40	101
1923	47	37	36	102
1924	44	36	36	103
Average	47	37	35	101
AVERAGE DAILY ATTENDANCE—8 YEAR PERIOD				
Officers	13	12	11	20
Delegates	47	37	35	101
	60	49	46	121
	50%	40%	38%	

AVERAGE ATTENDANCE—8 YEAR PERIOD

52 — 43%

It is clearly demonstrative that the first day's meeting is the one mostly attended; that the second, and the third meetings show a marked reduction in attendance. Why there should be such a falling off in attendance, especially at the second day's meeting, I do not know. Many members, of course, are anxious to return home by the evening of the second or the morning of the third day, hence the lack of interest concerning the third day's meeting with a correspondingly decrease in attendance. After the presentation of these facts, the question naturally arises, are we to be satisfied with an average daily attendance of 50 per cent or less, or should some steps be taken to remedy this lack of attendance in our legislative body? I can say, without fear of contradiction, that each year, as Secretary, letters have gone from my office urging the County Societies to elect men who could and would represent them in the House of Delegates. When a County Society failed to send in the names of delegate and alternate, further correspondence ensued, ofttimes to no avail. I have always claimed that a physician is not a policeman and that he has no right to compel a patient to do a single solitary thing that the patient does not care to do. So also I claim that it is not the province of a State Secretary to go out and personally compel a County Society to do a thing that it, the Society, does not care to do. This especially holds true concerning the question of electing delegates to represent the various component County Societies in the House of Delegates. For eight years I have tried every devise and scheme known to me to interest attendance in the meetings of the House. Some of the results of my efforts have already been touched upon. Quite naturally the question arises as to whether we—as a body—are satisfied with affairs as they now stand, or should some definite step be taken in the hope of increasing interest, and hence attendance, in our legislative proceedings. Not infrequently members of County Societies have intimated that "to a few has fallen the lot of running the State Society; therefore, why bother by attending the meetings of the House of Delegates". Almost invariably have I ascertained that the person making such a remark was a member of a County Society which has had little or no representation in the House of Delegates because the Society either failed to elect a delegate or, if one was elected, he failed to perform his duty by being present and taking a part in the active work of the House. From a secretarial point, I would say, the laggard County Societies long ago discovered the range of any gun that could be fired from the Secretary's office and so fortified themselves accordingly; hence some scheme other than printer's ink or pen seems advisable if increased attendance is desired. It may be worthy of consideration to present briefly a plan which, if found feasible and adopted, would, I believe, very materially increase the attendance of both officers and delegates. I refer to the payment, by the State Society, of the actual railroad fare by the shortest and most practicable route, of all members of the House of Delegates from and to the County Seat of the County in which a member resides, and to and from the County Seat of the County in which the Annual Session is held, in proportion to the number of meetings a member answers to roll call. Perhaps some better or more economical plan than this can be devised whereby the attendance may be increased; perhaps after all it may be best to allow things to drift in the hope that more delegates will eventually become interested and feel their responsibilities. However, I felt no harm would arise in bringing this matter to the attention of the members of the House of Delegates concerning the apparent indifference on the part of

many County Societies as to representation in this legislative body, and what has appealed to me as a plausible means for correcting the same.

Executive Secretary

At the last Annual Session, the House of Delegates authorized the appropriation of a sum of money—not to exceed $4,000—to secure the services of some person to assist the Secretary; to act as Business Manager of the Journal; to aid the Field Activities Committee; and to perform such other duties as may be assigned. Accordingly, after advising with the Editor, the Board of Trustees, and some other members who have always had the interest of the State Society at heart, it was suggested that Mr. C. G. Throckmorton, might, for various reasons, be qualified for such a position and accordingly negotiations were entered into whereby his services were secured, beginning with June 15, 1924.

Since that time Mr. Throckmorton, has devoted his entire time to State Society matters. He has personally visited fourteen County Societies, exclusive of Polk County, aiding quite materially in some instances in reorganizing some Societies practically moribund. He has assumed the full responsibilities of Business Manager of the Journal, assisting from this point in the publication of 968 pages with an average issue of 2639 copies, at a profit to the Society of over $2100. This amount, however, does not represent any money that might be charged as salary against the business management of the Journal. As a single item of his work in connection with the Secretary's office it may be of interest to note that he has mailed out over 6000 letters, and has been of great help in systematizing the work of the office. The Board of Trustees designated his status as Executive Secretary and placed his salary at $1300 for the first six months, and on a basis of $1400 for the last four and a half months of this year, making the total salary $2350 for the ten and a half months period. In addition to this amount a sum of $158.41 was allowed for traveling expenses, including a visit made to the home office of the American Medical Association in connection with duties associated with the advertising department of the Cooperative Bureau. Of the $4000 thus appropriated last year only $2408.41 has been used, leaving a balance of $1591.59 untouched. I would therefore recommend that the position of Executive Secretary be continued and that a similar appropriation be made this year, as was made last, for the financing of this office.

Only those individuals who have had occasion to come in close contact with the Secretary's office can begin to understand the volume of work which has persistently and progressively grown during the past years, as a result of organized medicine. Each year sees new and added duties. Sister State Associations, the American Medical Association, all bring to bear on the office of State Secretary additional tasks which are important, and which must be handled promptly and efficiently if the standing of the Iowa State Medical Society is to be maintained as one of the national units. A greater membership than ever before, with a correspondingly greater demand on the Secretary's time by individual members, likewise increases the duties. To offset this increase in work, and to make possible the services of a Secretary who could not devote all his time to society work, the office of full time Executive Secretary was established last year. The Board of Trustees has been generous in supplying the Secretary's office with equipment with which to carry on the work of the Society. There is, however, an additional need which I feel will greatly facilitate the work of handling the correspondence to the members and officiary, namely, the use of an addressograph. The purchasing of such equipment would not necessitate a great outlay of money. About $400 would be a sufficient sum for this purpose and I would recommend to the Trustees and to this House of Delegates that during the coming year, the Secretary's office be furnished with an adequate addressograph equipment.

FINANCIAL STATEMENT
IOWA STATE MEDICAL SOCIETY
May 1, 1924 to May 1, 1925

Income

Advertising	$ 7,752.18	
Reprints	850.98	
Subscriptions—Non-Members	106.06	
Sales	56.26	
Honorarium—Advertising Bureau, A. M. A.	249.18	
Dues	1,300.00	
Dues	10,908.00	
Check made good—a/c bank failure	5.00	
Total Income for Year		$21,227.66

Disbursements

Discount and Commission to Advertising Bureau	$ 1,130.01	
Check to Bankers Trust Co. a/c 1924 bank failure	5.00	
Check deducted a/c bank failure	5.00	
Paid to A. C. Page, Treasurer	20,087.65	
		$21,227.66

Other matters in which the office of Secretary has been active are reported to the House of Delegates from other sources.

Respectfully submitted,
Tom B. Throckmorton,
Secretary.

REPORT OF THE TREASURER

Dr. A. C. Page, Treasurer, read his annual report, which, upon motion duly seconded and carried, was accepted and referred to the Finance Committee.

Balance Sheet as of April 30, 1925

Total Investments as of April 30, 1924		$36,866.04
Received from Secretary		20,087.65
Interest on Investments—		
Liberty Bonds	$ 807.50	
School Bonds	100.00	
People's Savings Bank	173.28	
Iowa National Bank	112.46	
Total Interest on Investments		1,193.24
Total		$58,146.93

Society and Journal Expenses	$21,791.48
Total Investment as of April 30, 1925	$36,355.45
Total Investment as of April 30, 1924	$36,866.04
Net Loss for Fiscal Year Ended April 30, 1925	$ 510.59

Assets

Liberty Bonds (Face Value $25,000.00)	$23,682.37
School Bonds (Face Value ($2,000.00)	1,909.16
Iowa National Bank—	
Time Deposits	9,591.79
Checking	1,172.13
Total	$36,355.45

Respectfully submitted,
A. C. Page, Treasurer.

REPORT OF THE COUNCIL

The report of the Council was represented by the individual Councilors from the various districts. Upon motion by Dr. Paul Gardner, Chairman, seconded and carried, the report of the Council was accepted.

Report of Councilor, First District

No report.

The Councilor of this District was selected to fill the vacancy arising from the resignation of Dr. R. S. Reimers, Ft. Madison, too late to prepare a report.

Report of Councilor, Second District

To the Council of the Iowa State Medical Society:

The Councilor of the Second District begs to report as follows:

I sent a questionnaire to the Secretary of every County Medical Society in my District. I received replies from all except Iowa County.

The questions were:

How many regular meetings of your County Society were held in 1924? Clinton, 2; Muscatine, 4; Jackson, 2; Johnson, 6; Scott, 9.

How many special meetings? Clinton, 2; Muscatine, 1 (with State Senator and Representative in reference to Practice Act); Jackson, none; Johnson, none; Scott, 1 (business).

Were the special meetings, clinics, scientific or social? Clinton—two meetings were labeled in the Secretary's minutes "special"; four of the special meetings were of a scientific nature; two were social.

What per cent of your programs was given by members? Clinton, none; Muscatine, none; Jackson, 33⅓; Johnson, 83⅓; Scott, 50.

What per cent of membership is the average attendance? Clinton, 30⅓; Muscatine, 60; Jackson, 50; Johnson, 35; Scott, 35.

Membership? Clinton, 1; Muscatine, 24; Jackson, 22; Johnson, 67; Scott, 75. Iowa reported in 1923 membership 15.

Give suggestions for increasing attendance. To this I received only one reply, and that was from Dr. Paul A. White, the very efficient Secretary of the Scott County Society. He says: Good programs, stimulation and propaganda by the Secretary.

Muscatine reports two eligible doctors non-members; Jackson, six. These figures must not be taken literally. In Jackson while there are six non-member physicians practicing, three would probably not be voted members. The two rural counties, Iowa and Jackson, with fifteen and twenty members have not held more than two meetings a year.

Every Society said their delegates would attend the Annual Session.

I do not know how many deaths there were in the District, but I hereby report the death of Dr. A. B. Bowen of Maquoketa, which occurred about April 20.

Dr. Bowen was a pioneer in Jackson County, a regular attendant of his County and State Society during many years.

Respectfully submitted,
D. N. Loose,
Councilor, Second District.

Report of Councilor, Third District

Report of Councilor of the Third District to House of Delegates, March 13, 1925:

So far as I know all County Societies are functioning. During the past year President Fuller and Secretary Throckmorton, with the aid of five or six members of the State Society from Des Moines, gave a splendid program at Manchester, Delaware County, and at the same meeting the Doctors of Delaware County reorganized their County Society and their Delegate is present at this meeting.

Respectfully submitted,
A. G. Shellito,
Councilor, Third District.

Report of Councilor, Fourth District

I visited most of the County Societies in my district and found then all in good working condition. Some are holding monthly meetings, others quarterly meetings, but most of them yearly meetings, with good programs, both scientific and social, which we appreciated.

I would urge the different societies (county) in the state at their meeting for the election of officers, to be very sure that either their delegate or alternate can and will attend the state meeting and remain there until the meeting is over.

Respectfully submitted,
Paul E. Gardner,
Councilor, Fourth District.

Report of Councilor, Fifth District

The County Society condition in the Fifth District is about as it has been for several years. Linn County, the largest in the District, has had monthly meetings during the year except in mid-summer. They usually have prominent men from the outside, and invitations are sent out to members in the surrounding counties, and a very large attendance is the result. The Society has thus taken on something of the character of District Society. Several diagnostic clinics have been held.

Marshall County has a good Society and holds regular meetings.

Benton County has taken on a greater activity this year.

Tama County holds regular meetings with good interest.

Jones, Cedar and Grundy Counties keep up their organizations, but have not been very active; and there is much room for improvement in that regard.

Respectfully submitted,

G. E. Crawford,
Councilor, Fifth District.

Report of Councilor, Sixth District

Report of the Sixth District, including seven counties: Jasper, Poweshiek, Keokuk, Mahaska, Wapello, Davis, Monroe.

	Meetings	Attendance	Physicians in Co.	Mem. Co. Soc.	Non-Members	Ineligible	Attendance	Program
Jasper	4	10	38	20	16	2	Fair	Good
Poweshiek	4	13	25	16	9	..	Good	Fair
Keokuk	1	17	30	15	15	..	Good	Good
Mahaska	14	14	32	30	..	2	Fair	Fair
Wapello	18	18	59	40	10	9	Good	Good
Davis	5	10	12	11	1	..	Good	Good
Monroe	8	8	15	13	2	..	Fair	Good
	54	84	211	145	53	13		

Number of Physicians in District 211
Number Members of County Societies 145
Non-Members 53
Ineligible Physicians 13

Jasper County Society during past year took over the county work on a 65⅔ per cent of regular work. Keokuk County has been inactive since the war and for some time had no regular organized society. December 18, 1925, a meeting was held in Sigourney with an excellent program presented by outside physicians under the direction of the councilor. The society was reorganized and has fifteen members and promises to get in good working condition again. Keokuk County has a large number of physicians, many of them located in towns at the very borders of the county. This makes it very difficult for all the physicians of the county to be active in society work.

Mahaska County has all the physicians of the county as members except two who are ineligible on account of unethical practice. This society has taken over the county work. They hold tri-monthly banquets at which outside speakers are chosen.

Wapello County has an active society and it holds meetings twice a month for nine months; has a printed program for the year and holds clinics as a part of the program.

Davis County has the least number of physicians and all are members except one who is retiring from practice. They have good programs and good attendance.

Suggestions for the betterment of the societies have been to make more meetings clinical ones and to cooperate with health agencies both local and state and educate along public health activities.

A fine spirit of harmony is reported in all the counties.

Only one death in the district, Dr. Kemp of Sigourney.

The district shows 70 per cent of the physicians members of county medical societies, 25 per cent not members and 5 per cent ineligible. The 25 per cent are mostly physicians who do not wish to pay dues or care to attend meetings. This per cent is too large and these physicians should be educated to see the benefits of membership in organized medicine. None but the ineligible physicians should be out of the County Medical Society. As the success of the State Society depends altogether on the activity of the county societies, I would suggest a closer cooperation between the two. One worthwhile scientific program furnished by the State Society for each county during the year and a district meeting of all the counties once a year would do much to arouse local interest and promote the general welfare of the medical profession.

Respectfully submitted,

S. T. Gray,
Councilor, Sixth District.

Report of Councilor, Seventh District

The Seventh District comprises seven counties and contains six component societies—the counties of Dallas and Guthrie being fused into one.

During the past year I have visited each county society at least once and there has been in the District as a whole a distinct advance over former years in membership, interest shown and the quality of the programs given.

In my opinion this advance may be attributed in great part to the very efficient work of the Field Activities Committee which has functioned well in spite of the small outlay of money; to the slow but sure awakening of the profession itself and in some small part to the increased interest of the Council.

Three of the societies are very good and three are good. The former meet on specified dates and the latter at certain times on call of the president.

In general the programs have been given by members of the societies and I have been deeply impressed by the evidence of the time and study that some members have given to their papers. Others import part of the talent and while there is no question that this gives a particular meeting added stimulus, I believe that, in general, more good results when the members themselves give at least a majority of the program.

In this district there are some hamlets and villages without a local doctor but there is no community that is suffering from lack of medical attention.

During the year I have met twice with the Field Activities Committee and I have also procured a suitable record book and hereafter the proceedings of the Council will be kept in permanent form.

Respectfully submitted,

Channing G. Smith,
Councilor, Seventh District.

Report of Councilor, Eighth District

My report will be very brief of conditions such as I find them in the different counties. There are eleven counties in this district.

Early in the year I communicated with the Secretaries of the respective counties and about one-half of them responded. I asked them to put me on their visiting list. I visited five of the eleven counties, and the conditions were as follows:

The Ringgold County Medical Society is doing fair; there has been some slight misunderstandings in the past which I think are being ironed out. They have some excellent talent in this county and most of the physicians belong to the society.

At the Clark County meeting, there were about ten or twelve doctors present; they had two local men and one outside physician. About three-fifths of the doctors of this county belong to the Society.

The Taylor County Medical Society tries to meet once a month and the members claim they are getting stronger all the time. There seems to be a good feeling among the doctors at present. Their papers are confined generally to home talent.

The Wayne County Medical Society is sure a success; the members gave several excellent papers and nearly all the doctors of the county belong to the Society. It has a wide awake President and a good Secretary; dues are $10 a year and there are no delinquents.

The Decatur County Medical Society claims that it is one of the best societies in the state for its size; every physician in the county belongs but two. The members meet twice a year and generally have an attendance of twenty-five to fifty. It is one of the eight counties in the state which has been represented every time in the last eight years, in the House of Delegates. Generally about 60 to 75 per cent attend the State Medical Society.

The condition of a County Medical Society is generally due to the efficiency of its Secretary, if a poor Secretary is elected you generally have a poor Society. There are some Societies in the Eighth District that meet only once a year and then for the purpose of electing officers; this speaks very poorly for the Society and for its Secretary.

I hope that I can receive invitations from all the County Medical Societies in my District in 1925.

Respectfully submitted,

Fred A. Bowman,

Councilor, Eighth District.

Report of Councilor, Ninth District

There are nine counties in the ninth district—I have visited every county society in the District except two. Guthrie County is united with Dallas County in one society, and the councilor for the Seventh District reports for it in this society.

Adair County—I have repeatedly tried without success to arrange to meet with this society.

Number of meetings each year, 2; number of members, 9; number eligible, not members, 3; number of practitioners, not eligible for membership, 2; no deaths during the year; estimated population, 15,000. This society has not had a delegate to the annual meeting since prior to 1909.

Audubon County—Number of meetings each year, 4; number of members, 11; number eligible, not members, none; number of practitioners, not eligible, 5; no deaths; estimated population, 11,000. This society was represented by a delegate the last time in 1923. Number of times represented by a delegate according to the records of the secretary since 1916, three times.

Cass County—Number of meetings each year, 3; number of members, 25; number eligible, not members, 3; number of practitioners, not eligible, 6; no deaths; estimated population, 12,000. This society was represented by a delegate the last time in 1924. Number of times represented by a delegate according to the records of the secretary since 1916, six times.

Harrison County—Number of meetings each year, 2 or 3 at call of president; number of members, 18; number eligible, not members, 7; number of practitioners, not eligible, 6; no deaths; estimated population, 25,000. This society was represented by a delegate the last time in 1919. Number of times represented by a delegate according to the records of the secretary since 1916, two times.

Mills County—Number of meetings each year, 6; number of members, 16; number eligible, not members, 4; number of practitioners, not eligible, 3; no deaths; estimated population, 15,000. This society was represented by a delegate the last time in 1924. Number of times represented by a delegate according to the records of the secretary since 1916, three times.

Montgomery County—Number of meetings each year, no regular meetings, one last year; number of members, 18; number eligible, not members, none; number of practitioners, not eligible, 6 or 7; no deaths; estimated population, 16,600. This society was represented by a delegate the last time in 1923. Number of times represented by a delegate according to the records of the secretary since 1916, five times.

Shelby County—Number of meetings each year, 2; number of members, 6; number eligible, not members, 2; number of practitioners, not eligible, 2; no deaths; estimated population, 17,000. This society was represented by a delegate the last time in 1924. Number of times represented by a delegate according to the records of the secretary since 1916, six times.

Pottawattamie County—Number of meetings each year, 6; number of members, 57; number eligible, not members, 5; number of practitioners, not eligible, 40; no deaths, transferred or dropped, 3; estimated population, 65,000. This society was represented by a delegate the last time in 1924. Number of times represented by a delegate according to the records of the secretary since 1916, all meetings.

Number of members of county societies in the Ninth District, 160.

Number of men eligible, not members, 24.

Number of practitioners, not eligible, 70.

Estimated population, 176,600.

I have tried to impress upon the members of the different societies the importance of having a delegate represent them at the annual meeting of the

State Society. In no other way can they discharge their obligations to the local or State Society. I have also tried to impress upon them the fact that the same man can better serve them as a delegate when returned a number of times.

I am endeavoring to arrange during the coming year a meeting of all of the societies in this district with the Pottawattamie County Society at Council Bluffs, hoping that it may be a means of increasing the interest of all of the societies in their work, and that of the State Society.

The figures given in this report are approximate—definite figures cannot be given.

Respectfully submitted,
H. B. Jennings,
Councilor, Ninth District.

Report of Councilor, Tenth District

The District is composed of fourteen counties with thirteen County Medical Societies. The counties of Hancock and Winnebago are joined in one society.

The members of all the county societies are taking active interest in organized state medicine and there is a general good professional fellowship among the members, very little discord anywhere. We have an exception to this in the societies of Emmet and Humboldt County, who have been holding very few meetings annually but we hope that in the near future we will be able to get them to hold meetings more frequently.

As near as I can determine 96 per cent of the eligible doctors in the county belong to the medical societies and the other 4 per cent are retired doctors. With the two exceptions mentioned the county societies hold from six to twelve meetings annually. Webster County Medical Society held thirty-four meetings last year.

I have to report only one death during the past year; that of Dr. E. W. Bachman of Estherville, Iowa, who died of cardiac disease at Rochester, Minnesota, May 28, 1924.

Respectfully submitted,
W. W. Beam,
Councilor, Tenth District.

Report of Councilor, Eleventh District

During the past year society work has been excellent. In June I visited the Clay-Dickinson Society at Spirit Lake—about forty were in attendance. The meeting was of much interest and nearly all took part in discussions.

In March I met with the Sac County Society. All the doctors of the county but five I think were present. They discussed the care of pregnant women and at the close appointed a committee to prepare an obstetrical record sheet and furnish the same to each member of the society.

Early in April I visited the Sioux County Society, twelve members were present. We discussed the advisability of physicians of towns uniting and establishing small sanatoriums for the purpose of giving electrical treatments, baths, massage treatments, packs, etc., to be in charge of a competent attendant and all supporting and sharing in the enterprise.

Late in April I attended the northwestern Iowa Society at Sheldon. This society takes in four counties and is the pioneer in uniting county units for better work. Over sixty were present. Practical papers and discussions gave it the air of a real society. These meetings are of such interest as to attract physicians from Sioux City and Sioux Falls—a number from each place being in attendance.

Last August I met with the Four County Society at Le Mars and in December at Cherokee. The Le Mars meeting brought out some valuable papers. Every one present took part in the discussions. About twenty were in attendance. The Cherokee meeting was fully attended and an obstetrical film was shown.

The Woodbury County Society is very strong and active. It is without doubt the best county society in Iowa.

Monona County has not fully affiliated with Woodbury but a number attend the Sioux City meetings.

Ida County Society holds six meetings a year. The members are called alphabetically to be on the program, and this plan works out well.

During the winter I prepared a directory of our thirteen counties, giving name, age, school, and year of graduation, with a summary for each county showing gain or loss in numbers in last four years: also giving the average age of physicians in 1921 and 1925. Dr. Fairchild has written me he will print the directory in the Iowa State Medical Journal. The manuscript is now in his hands and we look for an early issue of it.

Respectfully submitted,
G. C. Moorehead,
Councilor, Eleventh District.

The report of the Board of Trustees was presented by Dr. J. W. Cokenower, Chairman of that body. Dr. Shellito moved the acceptance of the report and that the same be placed on file. Seconded. A discussion was entered into by Doctors Treynor, Taylor and Small relative to the fluctuation of the interest amount during the last several years. After the discussion the Chair put the motion which prevailed and the report was accepted and placed on file.

REPORT OF THE BOARD OF TRUSTEES

The reports just read by our Secretary and Treasurer, show our Society in good condition and our Journal better and better each year, and to encourage this, your Board has given our Editor and Business Manager support in the publishing and printing of our Journal. Looking after all economic business of our Society is as essential as looking after the business of any organization, and our finances plainly show this has been done.

The following figures, will no doubt, be of interest to you. In 1921-2 we gained $2777. In 1922-3 we had a loss of $3161. In 1923-4 a gain of $2914, and in 1924-5 we had $22,410 gross receipts and $22,921 expenses and a deficit for that time of $510. The principle reason for the loss and gain, shown above, was the amount paid for Field Activities work and

Medical Education propaganda, during the past three years.

Respectfully submitted,
J. W. Cokenower,
Chairman, Board of Trustees.

Dr. D. S. Fairchild, Chairman, presented the report of the Medico-Legal Committee, which upon motion, duly seconded and carried, was accepted.

REPORT OF THE MEDICO-LEGAL COMMITTEE

The duties of the Committee for the past year have been unusually heavy because of the number and complexities of the cases before it. There is at least one rule of law involved in the defense of malpractice claims, and that is the exercise of a reasonable degree of skill and care on the part of a physician and surgeon in treating the patient; such reasonable skill and care as is exercised in similar communities. But the provision has not been standardized and there is no certain way of measuring "reasonable skill and care" except by submitting the question in each case to the court and jury. There are also many other questions to be considered. In the case of an operation, was there an agreement or understanding as to operation? Were certain organs to be exempt from molestation? Was proper consent given? Then there is the question as to the reasonable value of the treatment, the question of fraud and misrepresentation, unnecessary operations, etc. All these questions must be met in the face of more or less prejudice and ignorance. In certain minds there is a feeling of resentment against the physician or surgeon as for some imagined grievance, insistence on the payment of an over-due bill. Many times it is said that malpractice suits grow out of criticisms of unfriendly or unwise neighboring physicians. That claim is greatly over-estimated, but there is one thing certain, and that is, no case would ever get to the jury if no legally qualified doctor testified against the defendant doctor.

One of the most frequent causes of malpractice claims are disputes over bills in the form of counter-claims for damages if the statutes of limitation has not expired. If the statute of limitation has expired, the counter-claim is to show that the services were without value.

If the counter-claim is sued before the statute of limitation has expired, the jury may grant any sum in the form of a judgment they see fit to give, and it has the effect of an original suit. If the statute has expired, the judgment cannot exceed the amount of the bill sued for; one offsets the other.

A somewhat different rule applies if the patient is a minor as to the statute of limitation, which runs until the patient is of legal age and one year more.

We have a file of 363 cases where claims have been presented against physicians and represent 103 types of claims based on the diagnosis of the attending physician or the attorney who files the petition. The fundamental cause or causes of suits for alleged malpractice are probably numerous, but not always apparent. The question has been asked, if practitioners of irregular schools of medicine have been influential in inciting suits for malpractice. The evidence before us does not support such a view. That members of our own school of medicine do foster suits for malpractice there can be no doubt in many instances, and more than that, have appeared on the witness stand against a defendant doctor. An important fact should be considered here. Unless a legally qualified physician of the defendant's school testifies to the wrongful treatment, the case will not go to the jury, but unfortunately in nearly all communities there is some one who, for one reason or another, will testify that the treatment was not proper—something the plaintiff's lawyer or perhaps some of the jury are looking for.

The class of cases which have objective features are the dangerous ones—fractures and x-ray burns. Fracture with marked deformity are observed by every one, or an x-ray deformity which is only markedly noted in the x-ray plate, will in themselves be strong witnesses against the doctor, if it is shown by a legally qualified practitioner that the deformity, burn or scar, for instance, is the result of unskillful or negligent treatment.

The effect of a malpractice suit is always more or less serious. First, because of the financial loss from the expense of the trial, and the preparation for trial, and the possibility of a verdict and the expense of an appeal, including the loss of time, worry and the more or less serious impairment of professional reputation. The latter is less serious today than forty or fifty years ago, when a conviction for malpractice meant disaster. Some of the New England states under the jurisdiction of the old English common law, held that malpractice was a tort, and if a doctor was convicted of malpractice, he was convicted of a wrongful act and must be punished, and if the doctor could not pay the judgment, he must go to prison until it was paid. This law was in force during my day in Vermont.

Malpractice suits were very rare fifty years ago, and the judgments were comparatively small. A judgment of $1500 to $3000 was relatively larger than $5000 to $8000 today. We all know verdicts against corporations are much larger than twenty-five years ago.

The difficulties of a defense are also greater. We have no standardized method of treatment and there are, of course, material differences of opinion as to the best methods of treatment. One group favor non-operative treatment of fractures, another holds for the open method when there are difficulties in anatomical adjustment. Another is satisfied with good physiological results, and then comes in an x-ray revelation of a real or apparent deformity, even if function is good.

There are many x-ray laboratories which will furnish the evidence of a poor line of anatomical adjustment, which may be made available if the bill is not satisfactory to the patient, and if the collection is pressed and made the basis of a counter-claim for damages, and the doctor is forced to abandon his

bill or take the chances of a claim for malpractice, to his very material loss if the experience is too often repeated. This it may be seen is a frequent method of evading an undesirable bill.

There is the treatment of x-ray and radium. We know there are certain risks of burns in the uses of these powerful agents in the treatment of diseases, that seem to resist all milder methods of treatment, even the most guarded care in the use of them will not always prevent a burn. And here again comes in differences of opinions among medical men as to the real value and use of x-ray and radium in the treatment of disease.

Just so long, therefore, as there are differences of opinion among medical men as to the best and safest method of treatment, and just so long as there is a selfish spirit abroad among the people, just so long may we expect legal controversies over treatment and bills. Shall we therefore to prevent possible malpractice claims refuse aid to members who insist on collecting their rightful claims for services? The committee think not, but would recommend care and prudence in their relations with a dissatisfied patient.

In relation to methods of procedure, we have insisted that the committee and our chief attorney have full and undisputed control of the case, for a divided responsibility is always disastrous, and the control shall extend from the beginning to the end of the case.

On account of the increasing danger of malpractice suits, we recommend our members to carry commercial insurance against the chances of a suit going against us, either from the nature of the case or the uncertainties of a jury verdict. We also insist on appearing for the defendant doctor if he carries commercial insurance and that the fact of commercial insurance be kept in the background. This is shown in a Texas case which we recorded in the March Journal, in which it was held that the jury discussed the question of the defendant carrying commercial malpractice insurance and that the doctor would not have to pay the verdict, but an insurance corporation would. This fact was offered by the defendant as one of the grounds for a reversal. The supreme court refused to consider this and a verdict of $8000 was sustained.

During the past year from April 1, 1924, to April 1, 1925, the committee has dealt with twenty-nine cases —twenty were new cases having arisen within the year and nine carry-over cases from previous years. Eighteen cases have been disposed of through the courts, verdict for the defendant by the jury five. Dismissed at plaintiff's cost four, settled 8, in sums from $61.30 to $800, making in all settled cases $2361.30. Except one most unfortunate case of x-ray burn which was settled for $5820, the Ft. Wayne Company paying $5000.

There was one judgment entered against a defendant doctor of $500 which was settled for $400 rather than go to the supreme court. The adjustment of the cases as above given was after consultation with the parties interested.

Unless there are dangerous points of weakness in the case, we prefer to contest the case through all the courts, for its moral effect, but when the verdict is for $500 or less, the defendant generally prefers to pay without appeal, and sometimes when the case can be settled on such terms, not to contest it in the courts.

We must urge again that doctors that carry commercial malpractice insurance keep it as much as possible from public knowledge. It is for its bad effects on courts and juries that we have persistently refused to carry commercial insurance advertisements in the Journal. Above all things do not boast that you do not fear malpractice suits because you are well protected.

Cases Coming Before the Committee

April 1, 1924, to April 1, 1925

New Cases	20
Amount asked	$351,319.00
Disposed of cases	18
Settled 7 cases at cost of	$ 7,656.30
One judgment obtained against doctor for	200.00

Attorneys Fees April 1, 1924 to April 1, 1925

Dutcher & McClain, July 1, 1924	$ 352.40	
Dutcher & McClain, Oct. 1, 1924	1,278.65	
Dutcher & McClain, Jan. 1, 1925	1,044.28	
Dutcher & McClain, April 1, 1925	1,996.23	$4.671.56

Local Attorneys

McCook & Lyons	$ 509.00	
Torgeson vs Plummer, (Freeborn Co., Minn.)		
Gilles & Daughterty	100.00	
Greenup vs Hammer		
Henderson, Fribourg, Hatfield & Fribourg	50.00	
Ryan, Admrs. vs Drs. Waters & McGrane		
Higbee & McEniry	50.00	
Hribal vs. Dr. J. W. Fry		
V. R. McGinnis	50.00	
Addie Grimm vs Dr Geo. Tallman		
Comfort & Comfort	216.60	
Dr. Huntongton Case		
H. H. Dunn, (Albert Lea, Minn.)	150.00	
Torgeson vs Plummer		
Picket, Swisher & Farwell	81.37	
Warner vs Dr. Carl Bickley		
Lorentzen & Sheperd	66.43	
Morris vs Miller		
		$1,273.40
Total		$5,944.96

This has been an expensive year as will be seen from the attached bills, amounting altogether to $5944.86, compared with

1924-1925	$5,944.86	
1923-1924	3,718.60	
1922-1923	2,895.21	
1921-1922	4,914.94	
1920-1921	2,502.03	$19,975.64

On a basis of a membership of 2300 and a per capita of $2, the sum at the disposal of the Committee for the past five years would be $23,000, of which we have expended in that period about $20,000, thus turning back $3000, or in normal years $5000 or about $1000 a year.

Once in about three years a group of cases come due and we have an expensive year. Inasmuch as a large per cent of malpractice cases have their origin in disputes over fees and as the medical profession and the public are getting wider apart in relation to fees, it is not probable that there will be any material lessening in malpractice suits—at least for the present—and the only solution that the Committee can see is to fight genuine malpractice claims or for the practitioner to reduce or cancel his bill. It appears to us that it is wiser to insist on a reasonable fee for services rendered, and if this leads to a malpractice suit as a counter-claim, to resist to the fullest. If an original suit for malpractice for unfortunate results or for error on the part of the physician or surgeon, to adjust it through the advice and judgment of a competent committee.

Report of Malpractice Cases, 1924-1925

To the Iowa State Medical Society:
Gentlemen:

We are enclosing herewith our Annual Report, showing the cases now pending and those disposed of during the last year.

The record shows an increased number of cases begun, and my observation is that there is more of a disposition to prosecute actions against the profession than there used to be. I think one reason for this is the current belief among the members of the legal profession that all doctors carry indemnity in some insurance company, and, therefore, the loss does not fall upon the doctor. I do not see how this can be avoided, but I would urge upon the profession that they refrain from saying anything about them having indemnity. This should be a matter to be kept as secret as possible.

I have tried more than the usual number of malpractice cases in the last year, but no judgment has been rendered against us, except the judgment in the case of Rudolph vs. Dr. Rowntree, at Waterloo, and I am leaving now for Waterloo to determine whether we shall appeal this case.

We desire to express our appreciation of the cooperation which we have received from the Medical Defense Committee.

Respectfully submitted,
(Signed) Dutcher & McClain.

Iowa City, Iowa,
May 11, 1925.

Cases Commenced Since the Date of Last Report and Since Disposed of

G. W. vs. Dr. E. B. M.:

This action was brought for the September, 1924, Term of the District Court of Polk County. It involved a very severe x-ray burn. Dr. M. forgot to put in his filters at a treatment administered to the plaintiff and in a few hours the oversight occurred to him and he went to his patient and told her that he had forgotten to put in the filters and that he was afraid that she would have a burn and asked permission to treat her prophylactically. The burn, however, developed and involved an area of about nine inches in diameter on the plaintiff's back. It was a third degree burn. The case was set down for trial in January, 1925, and the jury impaneled, and after the impaneling of the jury, the case was settled for $5,820. Up to this time plaintiff had expended about $2500 in hospital bills and services of nurse, and the burn after a year and a half had not healed, there still being an open sore of about five inches in diameter. The Physicians' Defense Company of Fort Wayne paid $5000 and the doctor himself paid $820, and the case was finally disposed of.

C. M. vs. Dr. B. H. M.:

This is an action begun for the August Term, 1924, for the District Court of Taylor County, wherein plaintiff sought judgment against the defendant for $5000, for alleged negligence in the treatment of a fracture of the right arm. The allegation was that the defendant failed to discover the fracture and diagnose an injury as a dislocation. As a matter of fact the allegation of the petition was true. The defendant did not discover the fracture owing to the fact that the patient was in the country and it was impossible to take an x-ray and her body was so obese that it was difficult to make the diagnosis. The case was set for trial and the defendant on the day before the trial commenced preferred to pay $800 rather than to take the chances of a suit. The case was settled therefore for $800.

Nelson vs. Dr. J. G. W.:

This action was commenced in the District Court of Pottawattamie County before the case was reported to us in January, 1925. There was joined with the defendant a dentist who had fractured plaintiff's jaw in doing some dental work and the defendant, Dr. W. was insured in the Medical Protective Company of Fort Wayne and that company employed Mr. Emmet Tinley of Council Bluffs. The case came up for trial when we were engaged in the trial of another malpractice case and we were not able to participate therein. The case was successfully defended and a verdict was obtained for the defendant.

E. M. vs. Drs. A. and M.:

This case was commenced for the October Term, 1924, of the District Court of Carroll County, Iowa. Damages were asked in the sum of $25,000 for alleged negligence and unskillfulness in performing an operation for gall-bladder trouble and readjusting fallen uterus. The plaintiff claimed the defendants, without her knowledge or consent, removed one ovary and fallopian tubes, thus rendering her from being capable of bearing children. This case came for trial while we were trying the case of French & Cobb at Marshalltown, and the case was tried by attorneys employed by the Physicians' Defense Company, and resulted in a verdict for the defendants.

Dr. G. A. L. vs. R. J.:

This was an action begun by Dr. G. A. L., before a Justice of the Peace in Mitchell County, Iowa, to

recover for services rendered to the defendant in the amount of $100. The defendant counterclaimed for $100. We wrote the Doctor, advising him that in view of the fact that the amount involved was small, and that the claim for malpractice was only used as an off-set against his bill, that we did not feel that the Society should defend the case. We advised that the Doctor settle the case or if he did not desire to do so that he have his local counsel file a general denial and make only a perfunctory defense in the Justice Court and then appeal to the District Court. We never heard anything from the Doctor in reply to our recommendation and from his local counsel and we assume that the case was finally disposed of.

W. T. vs. Dr. W. P.:

This action was begun at Albert Lea, Minnesota. Dr. P. was a resident of this state and the action grew out of alleged negligence in treating a patient in Minnesota. The case was reached for trial but it was deemed best to make a settlement of it, which was done for $250. The amount was paid by the Physicians' Defense Company, Fort Wayne, Indiana, and the case is finally disposed of.

F. H. vs. Dr. J. W. F. and C. B. & Q. Ry. Co.:
(See Report of 1924)

This action was begun in the District Court of Union County, and was removed to the Federal Court. We filed a motion on behalf of Dr. F., which was sustained by the court, and the plaintiff was ordered to amend his petition within a certain time. He failed to do so, and the court dismissed the case, with prejudice, at plaintiff's cost, and the case is therefore finally disposed of.

D. J. R., Admr. of Est. of J. E. R. vs. Dr. R. W. W. and Dr. R. F. McG.:
(See Report for 1924)

Dr. McG. is a dentist and Dr. W. administered the anesthetic and the patient died under the influence thereof. Dr. W. afterward moved to Kansas City and is practicing medicine there. This case was called for trial last January, and Dr. W. was very anxious not to be required to go to Sioux City to defend the case, and we finally settled it for $450, each of the doctors paying one-half thereof, and the case is finally disposed of.

A. G. vs. Dr. G. T.:

This action was begun for the September Term, 1923, of the District Court of Decatur County. Plaintiff claimed $5000 damages in the treatment of a fracture of the wrist. The case was set for trial last February, and on February 14, we settled the case for $61.30. It was a rather bad case, if we had been compelled to go into the trial of it. We felt that settlement was very desirable.

I. B. R. vs. Dr. A. J. L.:

This action was dismissed by the plaintiff without trial, and is finally disposed of.

Malpractice Cases Pending at the Date of Last Report and Since Disposed of

Dr. H. E. McC. vs. Mrs. A. G. & Ed. G.:

This is an action begun before the Justice of the Peace for professional services. Defendants filed a counter-claim for $1000, but the Justice of the Peace, of course, had no jurisdiction to entertain a counter-claim. We suggested a mutual dismissal and the Doctor consented thereto, and the case is finally disposed of.

C. W. W. vs. Dr. C. B.:

This case was finally dismissed by the plaintiff. Statute of limitations has run and the case is finally disposed of.

H. B., minor, by his next friend, J. B. vs. Dr. E. A. B.:

This case was tried in 1919 and the court was to about direct a verdict for the defendant, when plaintiff dismissed the case and brought it over again, and it was pending until this year, when it was finally dismissed at plaintiff's cost.

A. C. vs. Dr. A. G. S.:

This case has been dismissed by the plaintiff as the statute of limitations has run, and it is finally disposed of.

M. Van D. vs. Dr. P. G. I. and Dr. G. S. W.:

This case was tried and verdict rendered for the defendants in September, 1921. A motion for a new trial was filed and overruled, and the case is finally dismissed.

Ed. M. vs. Dr. J. F. C.:

This action was pending in the District Court of Lee County since April, 1922. It was assigned for trial many times, and finally last March it was specifically set down, and the evening before the trial commenced, the plaintiff agreed to accept $300 in settlement. This amount was paid by the Medical Protective Company of Fort Wayne, and the case finally disposed of.

J. L., Admr. of Est. of A. C. L. vs. Dr. C. E. B.:

This case was tried in the District Court of Franklin County last September, and a verdict was rendered by the jury in favor of defendant. No motion for new trial was filed and the case is finally disposed of.

Mary F. N. N., Admr. of Est. M. L. N., deceased, vs. E. J. N., B. Van H. and M. Hosp.

This case was begun and dismissed and begun over again, and last fall the trial was started and continued for two or three days in the District Court of Linn County. After two or three days' trial, the case was settled by the payment of $200. The amount was paid by the Physicians' Defense Company of Fort Wayne, Indiana, and the case finally disposed of.

Condensed Report of Cases Against Members of the Iowa State Medical Society, 1924-1925

To Dr. D. S. Fairchild, Dr. H. B. Jennings and Dr. W. B. Small, Medical Defense Committee.

Gentlemen:

We have submitted full report upon all cases pending at the date of our last report and also of cases commenced since that date. The following is a summary of certain particulars in all cases commenced since the establishment of the Medical Defense Committee of the Society:

Cases commenced since organization of department	246
Cases commenced prior to the report of 1909	15
Cases commenced during 1909-1910	13
Cases commenced during 1910-1911	10
Cases commenced during 1911-1912	14
Cases commenced during 1912-1913	13
Cases commenced during 1913-1914	10
Cases commenced during 1914-1915	24
Cases commenced during 1915-1916	19
Cases commenced during 1916-1917	17
Cases commenced during 1917-1918	13
Cases commenced during 1918-1919	14
Cases commenced during 1919-1920	7
Cases commenced during 1920-1921	12
Cases commenced during 1921-1922	13
Cases commenced during 1922-1923	18
Cases commenced during 1923-1924	14
Cases commenced during 1924-1925	20
Cases pending at date of 1909 report	7
Cases pending at date of 1910 report	10
Cases pending at date of 1911 report	14
Cases pending at date of 1912 report	25
Cases pending at date of 1913 report	26
Cases pending at date of 1914 report	21
Cases pending at date of 1915 report	28
Cases pending at date of 1916 report	33
Cases pending at date of 1917 report	33
Cases pending at date of 1918 report	29
Cases pending at date of 1919 report	29
Cases pending at date of 1920 report	26
Cases pending at date of 1921 report	30
Cases pending at date of 1922 report	26
Cases pending at date of 1923 report	33
Cases pending at date of 1924 report	37
Cases now pending	38
Total cases disposed of	212

Nature of Cases

Malpractice in removing seed wart	1
Malpractice in not discovering and uniting severed ligaments of the wrist	1
Alleged assault	2
Removal of cancer of the hand	1
Conspiracy to have plaintiff declared insane	2
Fracture of the arm	35
Fracture of leg or femur	58
Fracture of the jaw	1
Appendicitis—sponge case	2
Caesarian operation—sponge case	1
Cancer of breast—sponge case	1
Womb operation—sponge case	1
Operation—sponge case	1
Operation for kidney—sponge case	1
Operation—gall-bladder—sponge case	1
Appendicitis, malpractice in operation	5
Appendicitis—exploratory opening	1
Childbirth, alleged failure to attend after alleged agreement to do so; child died (separate actions by father and mother)	2
Childbirth, allegeing negligence, mother died	1
Libel for testifying patient was insane	1
Hand crushed, alleged improper treatment	1
Failure to discover sub-caracoid dislocation of shoulder joint	1
Hand lacerated, alleged improper treatment	1
Ear, alleged improper treatment	2
Eye, alleged improper treatment	1
Infection, childbirth	2
Medical treatment of child	1
Abortion, improper after-treatment	3
Abortion, without justification	2
Improper treatment of nail puncture in foot	1
Alleged removal of wrong kidney	1
Stomach trouble, alleged improper treatment and failure to treat	1
Anesthetic, death under	2
Improper diagnosis of diphtheria	1
Improper diagnosis of broken ribs	1
Removal of uterus, alleged negligent incision of the bladder	1
X-ray burn	10
Infection following amputation	1
Alleged improper treatment of scald	1
Removal of adenoids	2
Alleged improper abdominal incision	3
Failure to administer serum, patient died of lockjaw	1
Fracture of collar bone	3
Willful insertion of instrument, producing abortion	1
Operation for pregnancy of fallopian tube	1
Negligence in administration of poison, causing death	1
Improper treatment of wound in leg from kick of horse	1
Alleged negligence in communicating erysipelas to woman in childbirth	1
Negligence in suffering patient mentally delinquent to jump out of unguarded window in private sanitorium	1
Negligent amputation of finger	3
Negligence in attending and severing cords of hand	1
Wrongfully administering morphine	1
Communicating small-pox to patient in hospital	1
Fracture of lower jaw	1
Dislocation of knee	1
Cancer of stomach	1
Puncturing jugular vein	1
Failure to operate for removal of appendix	1
Negligence in treating hernia	1
Operation on nose of a minor without consent of parents resulting in death	1
Negligence in treating wrist	1
Failure to discover dislocation of ankle	1
Draining pelvic abscess	1
Operation for tonsils without consent	2
Negligent incision into intestine—ovarian tumor	1
Negligent diagnosis and treatment of pus in abdomen	1
Negligent treatment of infected jaw	1
Negligent treatment of infected antrum	1
Negligence in removing button from child's throat	1
Hot water bottle burn	2
Failure to discover fractured vertebra	1
Improper treatment of vaginal infection	2
Improper treatment of inflammatory rheumatism	2
Negligent removal of tonsils	4
Negligent removal of tonsils and adenoids	1
Negligent treatment of gunshot wound	3
Negligent treatment of abscess of bladder	2
Negligent treatment of abscess under arm	1
Wrong diagnosis of sprain of ankle	1
Failure to properly tie umbilical cord	1
Failure to discover fracture of illium	1
Exposing patient to scarlet fever by wrong diagnosis	1
Improper treatment of insect bites	1
Negligent treatment of fractured finger	2
Improper treatment of fractured foot	1
Paralysis of facial nerves in mastoid operation	1
Failure to diagnose abscess of kidney	1
Malpractice—childbirth	1
Malpractice, diagnosing and treating typhoid fever	1
Malpractice, kidney irrigations	1
Malpractice, infection following injection for piles	1
Malpractice, childbirth, born dead	1
Malpractice, infection following operation for hernia resulting in death	1
Malpractice, alleged arsenic poisoning from medicine prescribed	1

Malpractice, electrical treatment for shingles	1
Malpractice, treatment pulmonary abscess	1
Malpractice, fracture of foot	1
Malpractice, repair of cervix, removal of appendix	1
Improper treatment of ligaments of wrist	1
Negligence in tying patient in bed, resulting in gangrene and amputation of leg	1
Exploratory opening for diagnostic purposes, negligence in exposing person, resulting in death of child	1
Negligent burn by radium	2
Negligent treatment, dislocated shoulder	1
Syphilis	1
Total amount of damages claimed in all cases to date	$2,777,098.00
Judgments recovered against members	10
Aggregate amount of judgments	$ 15,676.00
Consultations on cases threatened in which no proceedings were had	124

Respectfully submitted,
Dutcher & McClain.

Iowa City, Iowa, May 11, 1925.

Dr. D. S. Fairchild, Chairman, Clinton,
Dr. H. B. Jennings, Council Bluffs,
Dr. W. B. Small, Waterloo,
Committee.

The Secretary then made an announcement relative to the duties of the Nominating Committee, quoting from Chapter 5, Section 2, of the By-Laws concerning instructions as to the manner of selection of nominees.

Upon motion the meeting adjourned at 5:30 p. m., to meet at 8:00 a. m. Thursday.

The delegates from the various congressional districts then assembled to select a member from their various districts to act as members of the Nominating Committee. The Committee reported was as follows:

First District—C. H. Magee, Burlington.
Second District—Paul A. White, Davenport.
Third District—Will Hearst, Cedar Falls.
Fourth District—F. A. Hennessey, Calmar.
Fifth District—W. N. Moore, West Branch.
Sixth District—E. F. Talbott, Grinnell.
Seventh District—John H. Peck, Des Moines.
Eighth District—Samuel Bailey, Mt. Ayr.
Ninth District—G. V. Coughlin, Glenwood.
Tenth District—Michael J. Kenefick, Algona.
Eleventh District—H. J. Brackney, Sheldon.

M. J. Kenefick, Chairman,
Paul A. White, Secretary.

Second Meeting, Thursday, May 14, 1925

The House of Delegates met on the eleventh floor of the Hotel Ft. Des Moines and was called to order at 8:00 a. m., by President Fuller.

Roll call showed the presence of 17 officers and 70 delegates; a total of 87. The President announcing that a quorum was present, the House proceeded to the transaction of business.

No report from Public Policy and Legislative Committee.

THE REPORT OF THE CONSTITUTION AND BY-LAWS COMMITTEE

The report of the Committee on Constitution and By-Laws was given by the Chairman of the Committee, Dr. V. L. Treynor, Council Bluffs. The report follows:

Resolution—To amend Chapter 4, Section 2 of the By-Laws by adding the following words: "In case the delegate, after being seated, is unable to further attend the meetings of the House of Delegates, the alternate to the delegate shall be entitled to be seated for the remainder of the meetings."

Resolution—To amend Chapter 12, Section 11 of the By-Laws by adding the words: "And an alternate to the delegate" after the word delegate, in line three (3); "and one alternate to the delegate" after the word delegate, in line five (5), making the section as amended to read as follows:

Section 11 (as amended)—At some meeting in advance of the Annual Session of this Society, each County Society shall elect a delegate and an alternate to the delegate to represent it in the House of Delegates of this Society in the proportion of one delegate and one alternate to the delegate for each fifty members, and one for each major fraction thereof, but each County Society holding a charter from this Society, which has made its annual report, and paid the assessment as provided in this Constitution and By-Laws, shall be entitled to one delegate.

This report in accordance with the Constitution and By-Laws, was laid upon the table for one day, to be acted upon at the Friday morning session of the House.

REPORT OF PUBLICATION COMMITTEE

The report of the Publication Committee was presented by Dr. D. S. Fairchild, Editor and Chairman, which upon motion duly seconded and carried, was accepted.

The financial report of the Journal has been presented by the Secretary and it will not be necessary for the Committee on Publication to go over that feature of activities, more than to note that the Journal has received from various sources, an income the year 1924 of $14,267.64, and the expenses have been $12,847.87, giving a balance returned to general fund $1,419.77.

There were published 12 numbers in 1924, totaling 572 pages of reading matter, including 110 original papers, distributed as fairly as possible between the different medical activities of the profession of the State, the State Medical Society, the several district societies, the county societies, the Tri-State Society, and a very few personal or individual papers.

We decline individual papers unless we know who the man is and what message he has for the profession. We have had a few such papers from men in high places influenced by a friendly regard for the Journal. Many of these volunteer papers, we regret to say, are only for the purpose of bringing the writer before the medical public, and are generally carelessly prepared. We have welcomed contribu-

tions from the State University that serve to keep the profession informed of the work done there. We have also welcomed contributions by beginners in medical literature, when they come with the endorsement of the writer's local Society, and we cheerfully aid in putting them in form for publication.

We appreciate the criticism of those who raise the question of literary merit and scientific or professional value. We would, however, remind certain critics of their own early contributions. A little encouragement has no little influence in bringing out useful men.

The state Journals are increasing in influence and in quality. Instead of becoming, as at one time thought, merely bulletins for the various state medical societies, they have become real medical Journals, with an established policy.

There appears to be in certain quarters a tendency to do away with a medical editor and place the Journal in the hands of a layman. We are constantly reminded of the fact that through certain activities medical service is being placed in the hands of laymen. For instance, insurance without medical examination, maternity activities, health activities and various public service activities. How long will it be before the paid service will be inaugurated under State control?

We are not yet convinced that there are not men in the medical profession fit to conduct society business. It is to be confessed that there have been times when the lay public had reason to believe that the medical profession was unfit to conduct any important enterprise, and we ourselves have more or less openly supported the alleged fact.

JOURNAL STATEMENT

January 1, 1924, to December 31, 1924

Income

Advertising	$ 8,037.41	
Reprints	1,013.01	
Subscriptions, non-members	108.56	
Sales	47.48	
Honorarium—Advertising Bureau, A. M. A.	249.18	
Subscriptions, 3—1923 members at $2	6.00	
Subscriptions, 2403—1924 members at $2	4,806.00	$14,267.64

Expense

Printing—		
1-72 Page Journal	$ 499.63	
3-76 Page Journals	1,585.11	
3-80 Page Journals	1,711.96	
4-84 Page Journals	2,388.23	
1-92 Page Journal	634.30	
968 pages—average issue 2639 copies		$ 6,819.23
Engravings		152.49
Reprints		735.15
Commission and Discount		1,124.00
News Service		64.90
Second class postage and city delivery		170.00
Office rent and towel service (Journal share)		302.13
Postage and express		45.37
Telephone and telegraph		32.98
Trustees' meeting (Journal share)		43.45
Bond, Secretary and Treasurer (Journal share)		43.75
Editor's salary		1,500.00
Editor's stenographer		120.00
Journal wrappers		81.75
Supplies and stationary		10.08
Miscellaneous		97.53
Furniture and fixtures (Journal share)		260.46
Executive Secretary salary (Journal share)		704.15
Business office assistant—Ida J. Brinton (Journal share)		540.00 $12,847.87
Gain		$ 1,419.77
		$14,267.64

C. G. Throckmorton,
Executive Secretary.

Respectfully submitted,
D. S. Fairchild,
Chairman.

REPORT OF THE MEDICAL LIBRARY COMMITTEE

The report of the Medical Library Committee was read by Dr. D. S. Fairchild, Chairman of the Committee.

Dr. John F. Herrick, after making a supplemental report dealing more specifically with the discrepancy in the appropriation of money for the State Medical Library, moved that the Committee's report be accepted, and that the President appoint a committee to take up this matter with the one who has charge of the appropriation. The following named gentlemen participated in the discussion which followed. Doctors Magee, Fairchild, Spilman, Weigh, Kenefick, and Junger, all spoke favorably of the State Medical Library and favored any means for furthering the interests of this department. Dr. V. L. Treynor then moved the consideration of the previous question, which upon being duly seconded, the motion was put and was carried.

Number of bound volumes in the Library	6,809
Number of unbound volumes in the Library—2 tons unclassified material	
Number of medical journals regularly received, 1924	158
Number of medical journals regularly received, 1923	114
Number of medical journals regularly received, English	148
Number of medical journals regularly received—German	4
Number of medical journals regularly received—French	6
Number of visitors, 1923	1,118
Number of visitors, 1924	1,362
Number of books and periodicals loaned, 1923	3,176
Number of books and periodicals loaned, 1924	6,306
Increase in books, 1924	729

Appropriations originally granted by Legislature—	
Maintenance	$2,000
Medical Librarian	2,000
Additional appropriation granted in 1923—	
Assistant	1,400
Appropriation in detail as granted in 1925—	
Maintenance	2,000
Medical Librarian	2,000
Assistant	1,600
Assistant	1,200

Immediate necessity—salary of second assistant made adequate to insure the services of a person capable of doing research and reference work, and an additional grant for a package librarian.

Recommendations for the future—

Maintenance	$3,000
Medical Librarian	3,000
Reference and Research Librarian	2,500
Assistant Librarian	2,000
Package Librarian	2,000

Frances B. van Zandt,
Medical Librarian.

No report from the Field Activities Committee.

REPORTS OF THE DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION

The following is the report:

Mr. President:

The Delegates from the Iowa State Medical Society to the American Medical Association beg leave to submit the following report:

The House of Delegates of the American Medical Association is one of the largest law making bodies of its kind in existence. Much routine business consisting of reports and committee work, all of which, while very essential to the life and proper functioning of the association, at times becomes laborious and almost irksome. In each Session, however some new business comes up, some radical change is suggested, or some violation of some time honored custom or law is brought to light. At the last Session one of the new ideas suggested, which came from the President-Elect, was to lower the standard of Medical Education. The Reference Committee on Medical Education opposed the President's view in their report and the Iowa Delegation supported the Report of the Committee. Dr. Pusey also favored the training a class of nurses for ordinary work which could be procurred for a nominal sum, to care for those cases of sickness where because of financial conditions a more expensive and highly trained nurse was prohibitive.

Prohibition and the Volstead Act furnish a never ending field for discussion. The difficulty of procurring liquor for medical purposes was set forth and some sharp discussion followed which finally ended in the adoption of the report of the Reference Committee which in substance asks for the repeal of that part of the national prohibition law which interferes with the confidential relations between physician and patient and further asks that the prohibition commissioner revise his instructions on the procuring of alcohol for medical purposes by physicians.

The House adopted the report of the Reference Committee on Public Health and Hygiene recommending the periodic examination of all people from birth to death, and recommended that said examination be made by the family physician, that the sympathetic confidence and relation between physician and patient may not be interfered with.

The report of the Judicial Council relative to the relationship of medical doctor and cultists sums the matter up by saying that the policy followed out must be governed largely by the circumstances, the individual case and the conditions existing in that particular community; realizing that the first duty of a physician is the care of the sick. The Reference Committee add to this "The Committee believes that under no circumstances should a regular physician engage in consultation with a cultist of any description".

Your delegation attended every session of the House of Delegates and worked harmoniously together.

Respectfully submitted,
Donald Macrae, Jr.,
M. N. Voldeng,
B. L. Eiker.

During the presentation of the Report of the Delegates to the American Medical Association, the Chairman called the President-Elect, Dr. Spilman, to the Chair to preside during a brief absence of the executive officer.

MEMORIALS AND COMMUNICATIONS

The Secretary read a communication from Vice-President W. H. Rendleman, stating his inability to be present at this session, on account of illness in his family; also a letter from Past President L. W. Dean, stating his inability to be present on account of personal illness. The Secretary was then instructed to send suitable messages to both Dr. Rendleman and Dr. Dean, expressing the regrets from the House of Delegates as to the inability of these esteemed members to be present and wishing for them a speedy return of health and happiness in their homes. The Secretary then read a communication from Dr. Eppie S. McCrea, of Eddyville, concerning the retirement from practice of her husband, Dr. F. M. McCrea, on account of failing vision and moved that the dues of the latter be remitted for the ensuing year; seconded and carried.

Since the subject of dues had been brought up the Secretary requested an opinion from the House of Delegates concerning the question of dues of Life Members, stating that in some instances members entitled to Life Membership by virtue of the fact that they had paid their dues for thirty consecutive years, were still in some instances sending amounts to cover the cost of Medico-Legal protection, or if not in active practice, amounts covering the cost of the Journal.

Dr. Small moved that this matter be referred to the Committee on Constitution and By-Laws and that it be reported upon at the Friday morning meeting; seconded and carried.

A communication from Surgeon General M. W. Ireland, relative to the organization of a Military Committee was then read.

February 6, 1925.

Dr. T. B. Throckmorton, Sec'y,
Iowa State Medical Society,
901 Bankers Trust Bldg.,
Des Moines, Iowa.
My Dear Doctor:

In order to properly meet the responsibilities of the medical profession of America in the program for national defense, it is necessary to accomplish the enrollment of all eligible men of the profession in the Medical Section of the Officers' Reserve Corps.

I am sure it is obvious to you and the members of the Society of which you are a member, that the organization of an adequate medical reserve contemplates and requires the support and encouragement of all members of the profession.

The advantages of enrollment and classification in time of peace of the body of the profession are conspicuous and include an avoidance of a repetition of the majority of the inequalities and defects which developed as a result of our state of unpreparedness for the World War.

It is the desire of the War Department to organize and develop the Reserve Corps so as to provide recognition by promotion in grade and assignment to function in organizations in time of peace which will entail the minimum imposition of hardships on men called to active duty in emergency and will insure military efficiency.

In order that a better understanding of Reserve Corps affairs may be developed in medical societies, it is proposed that a military committee be appointed in each society.

The purpose of this committee will be:

(a) To establish and maintain contact with the War Department through the Surgeon General.

(b) To promote the organization of the Reserve Corps by procurement of enrollments therein.

(c) To receive information from the War Department in connection with the Reserve Corps and to convey the same to the society.

(d) To convey the recommendations of the society for the improvement of the organization and training of Reserve Officers.

In brief, to establish an agency for the development of a more intimate association between the members of the profession and the War Department.

The organization of the Medical Section of the Reserve Corps is an outstanding obligation of my office, and since proper organization of the medical men of the country for its defense program is a problem which concerns, and, I am sure, interests each member of your Society, I am asking a continuance of your support and suggest, if appropriate, that the proposed liaison be effected.

It is requested that this matter be brought to the attention of your Society, and if it is considered appropriate to organize a military committee that this be done and the names of the committee be furnished me.

Very truly yours,
M. W. Ireland,
Major General,
The Surgeon General.

Dr. Spilman moved that the Chair appoint a committee to consider the advisability of establishing a Committee on Military Affairs, such committee to report their recommendations at the Friday morning meeting.

The Chair then appointed the following named gentlemen on this committee: Dr. S. A. Spilman, Dr. Thomas Bess and Dr. Donald Macrae.

The Secretary then read a communication from the Linn County Medical Society inviting the State Society to hold their 1926 meeting in Cedar Rapids.

Dr. V. L. Treynor moved that the selection of next year's meeting place be considered by the Nominating Committee and that a report be made by it at the Friday morning meeting, seconded and carried.

REPORT OF THE COMMITTEE ON PUBLIC POLICY AND LEGISLATION

Dr. W. W. Pearson, Chairman of the Committee, presented the report. The President stated if there were no objections the report would be received and placed on file. There being no objections the report was received and placed on file.

The report follows:

The results in the way of legislation affecting the medical profession or public health during the Forty-first General Assembly may be grouped as follows:

1. All public health appropriations secured substantially as requested.

2. Salary changes and regrouping of health department functions so as to make possible a full time commissioner.

3. Passage of six out of eight bills prepared by Child Welfare Commission.

4. Enabling act for Des Moines and Polk County making possible consolidation of the city and county hospital systems.

Considerable of the effort of the Legislative Committee was devoted to preserving the substantial gains made during the code session and in preventing changes in the chapters relating to the practice of the professions and public health. These negative efforts were all successful.

The requests of the Board of Control of State Institutions for the state sanatorium and other tuberculosis work, the requests of the department of health, and the maternity and infant hygiene budget of the University of Iowa, were granted without reduction.

A bill introduced by Representative O'Donnell of Dubuque sought to repeal the Sheppard-Towner act, but this was buried in a sub-committee of the public health committee. In the closing days of the Assembly at the executive session of the House an

amendment to the appropriation bill was introduced by Berry of Monroe, striking out this appropriation. Among those who came to the defense of the fund were McIlrath of Poweshiek and McCaulley of Calhoun.

Dr. E. H. Lauer, director of the extension division, appeared before the public health committee when the O'Donnell bill was considered and presented his annual report which showed among others, the following facts: that clinics have been held in all but two counties of the state; that they had met with general approval on the part of farm bureaus and other lay organizations; that for the most part county medical societies were convinced that they were of value not only to public health but in the way of furthering the interests of the private physician; and that the results in the correction of defects and improvement of the general health of mothers and young children were capable of statistical demonstration.

The passage of the Child Welfare Commission bills gives Iowa a children's code, or at least the framework of such a code, comparable with the excellent body of laws existing in Minnesota, Ohio and other states relating to the care and protection of children in regard to health, child labor, juvenile delinquency, dependency, placement, guardianship, etc. The child's code also creates a children's bureau as a special department of the Board of Control of State Institutions.

The enabling act for Polk County is a notable achievement. Not only will it save, according to estimates of the Bureau of Municipal Research, something like $100,000 per year to the taxpayers of the county and city, but it will also make possible a model unified hospital system on the present ample and beautiful county hospital grounds within the city limits of Des Moines, with a single system of administration, purchasing, nursing service, medical staff and other elements making both for efficiency and economy.

The bill was drafted by H. W. Byers at the request of Clarence Young of the Bureau of Municipal Research and T. J. Edmonds of the Iowa Tuberculosis Association after conferences had been held with Mayor Garver and Finance Commissioner Morris of the city council; P. B. Sheriff, Chairman, and other members of the County Hospital Board; Clyde Herring and Dr. W. L. Bierring representing the City Hospital Board; Fred Hunter, Chairman of the Board of Supervisors; Mrs. Carrie Harvison Dickey, president of the Des Moines Federation of Women's Clubs; Drs. A. C. Page, John H. Peck and others representing the Polk County Medical profession; Ralph J. Reed of the Public Welfare Bureau; Mrs. S. E. Lincoln representing the Parent-Teachers Association, and others. The bill was introduced by Senator Goodwin of Polk County and was supported in the House by Representatives Diltz and Elliott.

Your Committee through its representative was active in bringing together all these groups in agreement on the plan, in furnishing facts and arguments to Polk County members of the legislature, in securing publicity and organizing public sentiment in its favor, and in other ways designed to assist its passage.

The cooperation of the Field Activities Committee, of the State Medical Society and of the physician members of the legislature should receive special mention. The Field Activities Committee through its chairman, Dr. W. L. Bierring, was very instrumental in the arrangements leading up to the passage of the Polk County general hospital enabling act, and through its secretary participated in legislative activities at the state house and used its machinery for mailing communications and for publicity relating to legislative matters.

Dr. T. E. Powers of Mills County, a member of the Board of Trustees of the State Medical Society, served during the Forty-first General Assembly as chairman of the public health committee, a very important post. Drs. D. E. Williams of Wayne County and T. S. Wolf, members of the House of Representatives, were active in promoting public health legislation and in preserving the interests of the medical profession. Representative L. V. Carter of Hardin, chairman of the Appropriations Committee, was very friendly and helpful; also Representative E. A. Grimwood of Jones, Chairman of the Board of Control Committee and W. R. Blake of Fayette, Chairman of the Sifting Committee of the House.

T. J. Edmonds.

New Business

Dr. Jepson, of Sioux City, then raised the question concerning the change in law compelling physicians to annually renew their license to practice medicine in this state. After an informal discussion by Doctors Gray, Sawyer, Small, Powers, Treynor and Loose, Dr. Small moved that the Committee consisting of Doctors Fairchild, Treynor, Jepson, Powers and Gray consider this question and bring such recommendations as deemed necessary for consideration by the House at the Friday morning meeting; seconded and carried.

The Secretary then read a communication from Dr. Robert Olesen, United States Public Health Service, relative to the coming meeting of the Committee on Goiter Prevention, to be held at Atlantic City, coincident with the Annual Session of the American Medical Association, and requesting that one or two physicians of the Iowa State Medical Society be selected to attend this Conference and to take an active part in its deliberations.

A motion having been made and seconded that the Chair appoint two physicians to meet with the Committee, was then placed before the House and declared carried. The President stated that he would make the appointments later.

The Secretary then read a report from the office of William C. Woodward, Executive Secretary, Bureau Legal Medicine and Legislation of the American Medical Association, relative to plans for induc-

ing the President to submit to Congress next December, recommendations concerning tax reduction relative to the Harrison Narcotic Law, (2) the tax on traveling expenses necessary for attendance at meetings of Medical Societies, (3) and the tax on the expense of Post-Graduate Study.

It was moved by Dr. Loose that the committee consisting of Doctors Fairchild, Treynor, Jepson, Powers, and Gray be appointed to consider the subject of Federal Taxation, and to bring before the House of Delegates the Friday morning meeting, such resolutions as may be deemed necessary.

The Secretary then stated that he had recently received a communication from Governor Hammill, relative to the nomination of examiners by State Associations, and requesting that the Iowa State Medical Society submit the names of six persons of recognized ability in the medical profession for his consideration in making such appointments to the Board of Examiners as required by law.

The Secretary moved that the Chair appoint a Committee of five to act in selecting the list of names requested by the Governor and to present the same at the Friday morning meeting; seconded and carried. The Chair then appointed the Secretary, Tom B. Throckmorton, M.D.; H. C. Eschbach, M.D.; Donald Macrae, M.D.; Paul E. Gardner, M.D., and Paul A. White, M.D., to serve on this Committee.

The meeting was adjourned at 10:30 a. m. to meet Friday morning at 8:00 a. m.

Third Meeting, Friday Morning, May 15

The House of Delegates met in the Oak dining room of the Hotel Fort Des Moines, and was called to order by President Fuller at 8:00 a. m.

Roll call showed the presence of 13 officers and 60 delegates; making a total of 73.

President Fuller announcing that a quorum was present, the House proceeded to the transaction of business.

The minutes of the first meeting were read and there being no objections or corrections, the Chair stated that the minutes would stand approved as read.

The minutes of the second meeting were then read, and with one slight correction were declared approved as corrected and read.

Report of the Committee on Nominations

The report of the Committee on Nominations being the first order of business, Dr. Michael J. Kenefick, Chairman, presented the report. The report follows:

The Nominating Committee met following the adjournment of the meeting of the House of Delegates, Thursday, May 14. A roll call of districts showed that all congressional districts were represented by members. The ballot for officers resulted as follows:

For President-Elect—Dr. T. U. MacManus, Waterloo; Dr. W. W. Pearson, Des Moines; Dr. T. E. Powers, Clarinda.

For First Vice-President—Dr. F. C. Mehler, New London.

For Second Vice-President—Dr. F. G. Murray, Cedar Rapids.

For member Board of Trustees—Dr. O. J. Fay, Des Moines.

For Delegate to A. M. A.—Dr. M. N. Voldeng, Woodward.

For Alternate Delegate—Dr. J. W. Harrison, Guthrie Center.

For member Medico-Legal Committee—Dr. H. B. Jennings, Council Bluffs.

For Public Policy and Legislation Committee—Dr. W. W. Pearson, Des Moines; Dr. J. F. Edwards, Ames; Dr. T. A. Burcham, Des Moines.

For Constitution and By-Laws Committee—Dr. V. L. Treynor, Council Bluffs; Dr. C. B. Taylor, Ottumwa; Dr. T. B. Throckmorton, Des Moines.

For Publication Committee—Dr. W. L. Bierring, Des Moines; Dr. Fred Smith, Iowa City.

For Finance Committee—Dr. E. C. McClure, Bussey; Dr. D. F. Houston, Burlington; Dr. Chas. Ellyson, Waterloo.

For Medical Library Committee—Dr. D. S. Fairchild, Clinton; Dr. W. L. Bierring, Des Moines; Dr. O. J. Fay, Des Moines; Dr. G. H. Hill, Des Moines; Dr. C. R. Harken, Osceola.

Dr. M. J. Kenefick, moved that the report be accepted. The motion was duly seconded and carried.

Election of Officers

The House then proceeded to an election.

The President appointed Dr. Paul E. Gardner, New Hampton, and Dr. Emil C. Junger, Soldier, as tellers.

The ballot was then taken for the office of President-Elect. There were 68 ballots cast. The President announcing that as none of the nominees had received a majority on the first ballot, a second ballot would be taken.

Dr. T. A. Burcham, Des Moines, stated that Dr. W. W. Pearson had requested that his name be withdrawn. The Chair ruled that it had been the custom of the House to allow no withdrawal of names after a ballot had been taken.

On re-ballot 73 votes were cast, of this number Dr. T. E. Powers, Clarinda, having received 37, the Chair declared Dr. Powers elected to the office of President-Elect for the coming year.

Dr. W. B. Small, Waterloo, moved that the election of Dr. Powers be made unanimous; seconded and unanimously carried.

Dr. J. F. Herrick, Ottumwa, moved that, as there was but one candidate for the other offices and committees, the rules be suspended, and the Secretary cast the ballot for the remaining officers and committee members as reported by the Nominating Committee; seconded and carried.

The Secretary then cast the ballot and the Chair declared the remaining officers and committee members duly elected.

The Secretary then called attention to the fact that Dr. Powers, now serving on the Board of Trustees, by virtue of his election as President-Elect, thereby created a vacancy in the office of Trusteeship.

Dr. W. B. Small, then presented the name of Dr. Kenefick, Algona, for the candidate for the office of Trustee. Dr. S. T. Gray, Albia, presented the name of Dr. H. C. Eschbach, Albia, as a candidate for office of Trustee. There being no further nominations, the House then proceeded to an election of a Trustee.

There were 66 ballots cast, both candidates receiving an equal number. The President announced that as neither candidate had received a majority on the first ballot, that a second ballot would be taken. Sixty-five votes were cast on the second ballot, Dr. M. J. Kenefick, having received a majority of the votes cast, President Fuller declared Dr. Kenefick elected as a Trustee to fill out the unexpired term of Dr. T. E. Powers.

Dr. Paul E. Gardner, then presented to the House of Delegates, President-Elect T. E. Powers, who in a few well chosen words stated his sense of appreciation for the great honor which had been conferred upon him by electing him to the high office of President-Elect.

Unfinished Business

No report from the Committee on Field Activities.

Dr. S. A. Spilman then presented a report of the special committee dealing with the possible establishment of a Committee on Military Affairs, and stated that the Committee had selected Dr. Donald Macrae, Council Bluffs; Dr. Wilbur Conkling, Des Moines, and Dr. H. A. Spilman, Ottumwa, to serve as members on this committee, which is to formulate plans for its establishment during the coming year and to report at the next Annual Session.

Dr. H. J. Prentiss, Iowa City, moved that the report and recommendations of the Committee be accepted; seconded and carried.

REPORT OF SPECIAL COMMITTEE ON STATE AND FEDERAL TAXATION IN RELATION TO PHYSICIANS

Dr. D. S. Fairchild, Chairman of the special committee concerning State and Federal taxation in relation to physicians, then presented a report of the Committee's deliberations. Dr. W. B. Small moved and Dr. P. E. Gardner seconded, the acceptance of the Committee's report, which upon being placed before the House was so received and accepted.

The special committee to whom was referred the status of the recently enacted legislation relating to the registration of physicians, begs leave to report that an examination of the Act shows that the law provides for a Department of Health, consisting of an executive officer known as the Commissioner of Health, and a consulting Board, consisting of the Executive Council and five physicians appointed by the Governor. This is the Department of Health.

Then there are the Examining Boards, ten in number, one for each ten professions enumerated in the Act. These examining boards are entirely independent of the Department of Health, except that the Commissioner of Health may determine if a candidate may have secured his certificate by fraud or misrepresentation, and if so, he may withhold his signature.

The ten examining boards of the ten professions conduct their own independent examinations and issue their own certificates, which must be countersigned by the Commissioner of Health to become valid, but he has no control except as above mentioned.

In view of these facts, the Committee is of the opinion that such registration can serve no useful purpose, and if found unsatisfactory, urge its repeal. The Committee recommend that the Act be submitted to the attorney of the State Society for an opinion.

The Committee feel that legislation of this character is objectionable.

In relation to the war tax under the Harrison Narcotic law, the tax on traveling expenses necessary for attendance at meetings of medical societies, and the tax on the expenses of post-graduate study, the Committee recommend that this Society concur in the recommendations presented by the Bureau of Legal Medicine and Legislation of the American Medical Association.

Wm. Jepson,
V. L. Traynor,
T. E. Powers,
S. T. Gray,
D. S. Fairchild,
Committee.

REPORT OF THE COMMITTEE ON THE CONSTITUTION AND BY-LAWS

In the absence of Dr. V. L. Treynor, Chairman of the Committee, the Secretary, also a member of the Committee, read the proposed Amendment to Chapter 4, Section 2, of the By-Laws by adding the following words, "in case the delegate, after being seated, is unable to further attend the meetings of the House of Delegates, the alternate to the delegate shall be entitled to be seated for the remainder of the meetings", and moved its adoption; seconded and carried.

The proposed Amendment to amend Chapter 12, Section 11, of the By-Laws by adding the words, "and an alternate to the delegate", after the word delegate in line three (3); "and one alternate to the delegate", after the word delegate in line five (5) making the section as amended to read as follows:

Section 11 (as amended)—At some meeting in advance of the Annual Session of this Society, each County Society shall elect a delegate and an alternate to the delegate to represent it in the House of Delegates of this Society in the proportion of one delegate and one alternate to the delegate for each fifty members, and one for each major fraction thereof, but each County Society holding a charter from this Society, which has made its annual report, and paid the assessment as provided in this Constitution and By-Laws, shall be entitled to one delegate.

Moved its adoption; seconded and carried.

REPORT OF THE MEDICAL EXAMINERS COMMITTEE

The report of the special committee concerning nomination of examiners by State Associations, was then made by the Chairman, Dr. T. B. Throckmorton, who stated that the Committee was pleased to present the names of Dr. William Jepson, Sioux City; Dr. Nicholas Schilling, New Hampton; Dr. W. H. Rendleman, Davenport; Dr. Frank Fuller, Keokuk; Dr. W. W. Pearson, Des Moines, and Dr. Donald Macrae, Council Bluffs, for this position; such list, if approved, to be submitted to Governor Hammill, and moved its adoption; seconded by several and carried.

The special committee to confer with those having to do with securing adequate appropriation for the State Medical Library, was then read by the Secretary, as having been appointed by President Fuller: Dr. B. L. Eiker, Leon; Dr. C. E. Ruth, Des Moines; Dr. William E. Sanders, Des Moines; Dr. Julius Weingart, Des Moines.

The Secretary then read the names of the physicians whom the Chair appointed to meet with the Committee on Goiter Prevention, to be held in Atlantic City, coincident with the Annual Session of the American Medical Association: Dr. John F. Herrick, Ottumwa; Dr. W. L. Bierring, Des Moines.

REPORT OF THE FINANCE COMMITTEE

The report of the Finance Committee was made by the Chairman of the Committee, Dr. E. C. McClure, Bussey. Dr. McClure, in his report, while stating that the finances of both Secretary and Treasurer were entirely satisfactory to the Committee, made a few suggestions for consideration by the Board of Trustees, concerning what seemed to be some discrepancies in the mode of handling the finances of these two departments.

Dr. Channing Smith, moved that the report of the Committee be accepted, which upon being duly seconded, was carried.

The Secretary then brought in a report from the Committee on the Constitution and By-Laws concerning the question of dues of Life Members, and recommended that it be the wish of this body that in the future no monies be accepted from those entitled to Life Membership for either Journal subscriptions or Medico-Legal protection unless it was the desire of a member, entitled to the privileges of Life Membership, to continue to pay his annual dues in full; seconded by Dr. Bess, and carried.

The Secretary moved that a sum of money not to exceed $4000, be again appropriated to secure the services of someone to act as Executive Secretary, stating that the Board of Trustees approved the appropriation, which was verified by Dr. W. B. Small. Dr. Samuel Bailey, Mt. Ayr, seconded the motion, which, upon being put, was unhesitatingly carried.

The Chairman of the Nominating Committee then announced that invitations had been received from Cedar Rapids and Des Moines, for the meeting place of the State Medical Society next year. Dr. G. E. Crawford, Cedar Rapids, moved that to his city be extended the honor of caring for the Society next year. The motion was seconded, but was amended by a motion made by Dr. Magee, Burlington, that Des Moines be substituted as the meeting place in the original motion. Upon being duly seconded, the substituted motion was put and carried by a rising vote of 31 for and 13 against.

The House of Delegates having declared Des Moines, as the next meeting place, the dates of May 12, 13 and 14, were then fixed as those on which the Annual Session would be held.

Dr. J. C. Shellito, Independence, moved that inasmuch as considerable expense must be entailed by the local county in entertaining the State Society that a registration fee be required of members to help in defraying such expense; seconded by Dr. F. A. Hennessey, Calmar. Dr. Samuel Bailey then moved that the motion be laid on the table; seconded and carried.

Dr. Paul White, Davenport, suggested that inasmuch as the work of the House of Delegates was becoming quite laborious and hence giving the delegates little or no time for attending the scientific meetings, it might be a good plan to consider having the House meet a day in advance next year. The House was then informed that such a thing was possible "on call of the President or upon petition of twenty delegates".

Dr. Paul Gardner, Chairman of the Board of Councilors, then reported the name of Dr. G. B. Crow, Burlington, for Councilor of the First District, and Dr. G. C. Moorehead, Ida Grove, to succeed himself as Councilor of the Eleventh District.

REPORT OF THE FIELD ACTIVITIES COMMITTEE

The report of the Field Activities Committee, was presented by Dr. W. L. Bierring, Chairman of the Committee, who moved the adoption of the report. The motion being seconded, was put before the House and carried.

The report follows:

Summary of work from time of annual meeting of State Medical Society May, 1924 to same, 1925.

Assisted Convention Bureau of Des Moines Chamber of Commerce in endeavoring to bring National Conference of Social Work to Des Moines.

Cooperated with National Health Council in periodic health examination campaign. Made survey of results showing increase in business of private physicians as a result of this movement.

Made arrangements with Iowa Tuberculosis Association whereby tuberculosis clinics for benefit of county medical societies can be held without cost to societies. The expense is defrayed from Christmas seal funds in the hands of local and state associations.

Recommended cooperation with Christmas seal campaign.

Promoted Speakers Bureau work on public health.

Secured considerable publicity on subject of scientific medicine and its relationship to public health.

Entertained Dr. Chas. O. Giese, tuberculosis specialist of Colorado Springs.

Issued invitations to and participated in the meeting of the Iowa Trudeau Society and Iowa Sanatorium Association in connection with annual meeting of Iowa Tuberculosis Association. One feature of this meeting was a clinic held by Dr. Giese at Broadlawns.

Participated in plans leading to formation of the Iowa Heart Association and affiliation with the Iowa Tuberculosis Association. These plans include heart clinics, publicity and educational work.

Participated in legislative activities during the Forty-first General Assembly. Medical and health appropriations were secured as requested. Among the bills passed was an enabling act for Des Moines and Polk County making possible consolidation of city and county hospital systems.

Committee meetings as follows: Annual meeting Iowa State Medical Society, May, 1924. Meeting at Des Moines Club October 11, 1924. Mid-winter meeting, Grant Club, February 6, 1925. Meeting in connection with the annual meeting Iowa State Medical Society May 12, 1925.

Expenditures

November 1, 1924, mimeographing, stenographic work and postage	$33.95	
March 1, 1925, mimeographing and postage	19.48	
April 22, 1925, mimeographing and postage	25.89	
April 24, 1925, mimeographing and postage	1.44	$80.76
Cash paid out through Dr. Bierring, chairman, on above statement		$33.95
Unpaid bills		46.81

Account of T. J. Edmonds, Secretary

Balance brought forward May 15, 1924	$31.93	
Refund from telephone company	1.85	$33.78
June 2, 1924, mimeographing letters and postage	$ 7.82	
June 2, 1924, mimeographing notice and postage	1.44	
July 1, 1924, clippings	2.70	
Copy of code	5.00	
March 7, 1925, lunches for meeting at Grant Club	6.60	$23.56
Balance Forward		$10.22

Respectfully submitted,
Walter L. Bierring, Chairman.

There being no further business to come before the House of Delegates, President Fuller announced the adjournment at 10:30 a. m. sine die.

Tom B. Throckmorton,
Secretary.

IOWA STATE MEDICAL SOCIETY OFFICERS AND COMMITTEES 1924-1925

President	Smith A. Spilman, Ottumwa
President-Elect	Thomas E. Powers, Clarinda
First Vice-President	Frank C. Mehler, New London
Second Vice-President	Frederick G. Murray, Cedar Rapids
Secretary	Tom B. Throckmorton, Des Moines
Treasurer	A. C. Page, Des Moines

COUNCILORS

	Term Expires
First District—George B. Crow, Burlington	1930
Second District—David N. Loose, Maquoketa	1927
Third District—Amos G. Shellito, Independence	1926
Fourth District—Paul E. Gardner, New Hampton, Chrm.	1929
Fifth District—George E. Crawford, Cedar Rapids	1928
Sixth District—Samuel T. Gray, Albia	1928
Seventh District—Channing G. Smith, Granger, Secretary	1929
Eighth District—Fred A. Bowman, Leon	1929
Ninth District—Harry B. Jennings, Council Bluffs	1927
Tenth District—Watson W. Beam, Rolfe	1926
Eleventh District—Giles C. Moorhead, Ida Grove	1930

TRUSTEES

Oliver J. Fay, Des Moines	1928
William B. Small, Waterloo	1927
Michael J. Kenefick, Algona	1926

DELEGATES TO A. M. A

Donald Macrae, Jr., Council Bluffs	1926
Bert L. Eiker, Leon	1926
Mathew N. Voldeng, Woodward	1927

ALTERNATE DELEGATES

David N. Loose, Maquoketa	1926
John F. Herrick, Ottumwa	1926
Joseph W. Harrison, Guthrie Center	1927

STANDING COMMITTEES

Medico-Legal

David S. Fairchild, Sr., Clinton	1927
Harry B. Jennings, Council Bluffs	1928
William B. Small, Waterloo	1926

Scientific Work

Smith A. Spilman	Ottumwa
Tom B. Throckmorton	Des Moines
Addison C. Page	Des Moines

Public Policy and Legislation

William W. Pearson	Des Moines
James F. Edwards	Ames
Thomas A. Burcham	Des Moines
Smith A. Spilman	Ottumwa
Tom B. Throckmorton	Des Moines

Constitution and By-Laws

Vernon L. Treynor	Council Bluffs
Chas. B. Taylor	Ottumwa
Tom B. Throckmorton	Des Moines

Publication

David S. Fairchild, Sr.	Clinton
Walter L. Bierring	Des Moines
Fred M. Smith	Iowa City

Finance

Ernest C. McClure	Bussey
Daniel F. Houston	Burlington
Chas. Ellyson	Waterloo

Arrangements

Smith A. Spilman	Ottumwa
Tom B. Throckmorton	Des Moines
Addison C. Page	Des Moines

Two members from Polk County Medical Society

Field Activities Committee

Iowa State Medical Society,	Walter L. Bierring, Chairman, Des Moines
Iowa State Medical Society,	President-Elect Thomas E. Powers, Clarinda
Iowa State Medical Society	Bert L. Eiker, Leon
Iowa State Board of Health	Rodney P. Fagan, Des Moines
State University Medical College Faculty,	Nathaniel G. Alcock, Iowa City
State Conference of Social Work	James F. Edwards, Ames
Iowa Tuberculosis Association,	Mr. Thomas J. Edmonds, Secretary, Des Moines
Director	Frank E. Sampson, Creston
Advisory Secretary	Tom B. Throckmorton, Des Moines

SPECIAL COMMITTEES

Medical Library

David S. Fairchild, Sr. ..... Clinton
Walter L. Bierring ..... Des Moines
Oliver J. Fay ..... Des Moines
Gershom H. Hill ..... Des Moines
C. E. Holloway ..... Des Moines

Military Affairs

Donald Macrae, Jr. ..... Council Bluffs
Harold A. Spilman ..... Ottumwa
Wilbur S. Conkling ..... Des Moines

PAST PRESIDENTS

*Enos Lowe, Burlington 1851
*D. L. McGugin, Keokuk 1852
*J. D. Elbert, Keosauqua 1853
*J. M. Witherwax, Davenport 1854
*George Reeder, Muscatine 1855
*Thomas Siveter, Salem 1856
*J. C. Hughes, Keokuk 1857
*Thomas Siveter, Salem 1858
*J. H. Rauch, Burlington 1859
*E. S. Barrows, Davenport 1860
*R. S. Lewis, Dubuque 1861
*J. F. Henry, Burlington 1862
No meeting of the Society 1862
No meeting of the Society 1863
*H. T. Cleaver, Keokuk 1864
*M. B. Cochran, Davenport 1865
*J. C. Hughes, Keokuk 1866
*J. W. H. Baker, Davenport 1867
*William Watson, Dubuque 1868
*Philip Harvey, Burlington 1869
*S. B. Thrall, Ottumwa 1870
*James Gamble, LeClaire 1871
*A. G. Field, Des Moines 1872
*J. Williamson, Ottumwa 1873
*W. S. Robertson, Muscatine 1874
*H. T. Cleaver, Keokuk 1875
*W. F. Peck, Davenport 1876
*H. C. Bulis, Decorah 1877
*H. Ristine, Cedar Rapids 1878
*A. M. Carpenter, Keokuk 1879
*G. P. Hanawalt, Des Moines 1880
*S. B. Chase, Osage 1881
*T. J. Caldwell, Adel 1882
*D. Scofield, Washington 1883
*S. E. Robinson, West Union 1884
*H. C. Huntsman, Oskaloosa 1885
*D. W. Crouse, Waterloo 1886
*A. W. McClure, Mount Pleasant 1887
*J. C. Hinsey, Ottumwa 1888
*Donald Macrae, Council Bluffs 1889
*J. M. Emmert, Atlantic 1890
*Wm. D. Middleton, Davenport 1891
*George F. Jenkins, Keokuk 1892
C. M. Hobby, Iowa City 1893
Lewis Schooler, Des Moines 1894
*A. L. Wright, Carroll 1895
D. S. Fairchild, Clinton 1896
*J. C. Shrader, Iowa City 1897
*Edward Hornibrook, Cherokee 1898
Henry B. Young, Burlington 1899
*Thos. J. Maxwell, Keokuk 1900
*R. E. Conniff, Sioux City 1901
James R. Guthrie, Dubuque 1902
James T. Priestley, Des Moines 1903
*James A. Scroggs, Keokuk 1904
D. C. Brockman, Ottumwa 1905
Wm. P. Jepson, Sioux City 1906
*E. W. Clarke, Grinnell 1907
Walter L. Bierring, Iowa City 1908
*Charles F. Wahrer, Fort Madison 1909
George E. Crawford, Cedar Rapids 1910
M. Nelson Voldeng, Cherokee 1911
*L. W. Littig, Davenport 1912
V. L. Treynor, Council Bluffs 1913
Lee Wallace Dean, Iowa City 1914
Henry C. Eschbach, Albia 1915
William B. Small, Waterloo 1916
John F. Herrick, Ottumwa 1917
John N. Warren, Sioux City 1918
Max E. Witte, Clarinda 1919
William L. Allen, Davenport 1920
Donald Macrae, Jr., Council Bluffs 1921
Alanson M. Pond, Dubuque 1922
Charles J. Saunders, Fort Dodge 1923
Oliver J. Fay, Des Moines 1924

*Deceased

SOCIETY PROCEEDINGS

Calhoun County Medical Society

The Calhoun County Medical Society met at Manson, April 16, at the American Legion Hall.

Papers were read by Dr. Morton of Rockwell City, Dr. O. R. Prettyman of Manson, Dr. Kauffman of Lake City and by Dr. McCalley of Lake City.

The next meeting will be held June 18 in Lake City.

A society dinner was served at 6:30 p. m.

Clayton County Medical Society

Members of the Clayton County Medical Association to the number of seven, met Wednesday evening, May 6, in a regular meeting of that organization.

Doctors in attendance were: Bronson of Monona, Cahill of Volga, Cutler of Guttenberg, Meggers of McGregor, McGrath of Elkader, Stong of Elkader and Thomas of McGregor.

Visiting doctors were: Fritz of Dubuque, Gardner of New Hampton and Thein of Elkport.

Papers were read by Dr. Cahill of Volga and Thein of Elkport, while Dr. Gardner of New Hampton made an address.

Clinton County Medical Society

The Clinton County Medical Society met on the evening of April 29 at the Young Women's Christian Association in Clinton, Iowa. Thirty members of the society were present and in addition about ten guests from adjacent counties. At sixt-thirty p. m. a delicious chicken dinner was served, after which the meeting was addressed by Dr. Hugh Neil MacKechnie of Chicago. The Doctor's subject was Metastatic Tumors in Bone. The paper was supplemented by lantern slides and proved to be a most interesting and valuable contribution to this subject. Doctors Knudsen, White, Murphy, Jordon, and Walliker took part in the discussion. Following Dr. MacKechnie, Dr. John I. Marker of Davenport, Iowa, presented a most excellent paper on The Nervous Patient. The meeting closed with a few remarks by Dr. Fred E. Gerkin of Iowa City, relating to the operation of the Sheppard-Towner law in Iowa.

W. H. Foster, M.D., Secretary.

Clinton County Medical Society

The Clinton County Medical Society met at the Lafayette Hotel in Clinton, Iowa, on the evening of May 25, 1925. A special menu was served in the private dining-room of the hotel at 7:00 p. m. and after a brief business session the meeting was addressed by Dr. Lester Powell on the subject of Blood Transfusion. Dr. Powell's paper was supplemented by Demonstration of Instruments and Methods. Following this was a paper by Dr. P. S. Hench on the subject Some Practical Aids in the Management of Nephritis. Dr. Powell and Dr. Hench are both connected with the Mayo Clinic of Rochester, Minnesota, and their excellent papers were highly appreciated by about forty members and guests of the Clinton County Medical Society.

W. H. Foster, M.D., Secretary.

Dallas-Guthrie Medical Society

The Dallas-Guthrie Medical Society met at the Hotel Morlan, April 16.

Program—Care of the Teeth During Pregnancy, R. E. Savage, D. D. S. Some Problems in Infant Feeding.

In addition to the above was a paper by Dr. N. M. Voldeng, title not given.

Henry County Medical Society

One of the most noted gatherings of its kind was held Wednesday, April 29, when the members of the Henry County Medical Association were hosts to the doctors of southeastern Iowa at the Masonic hall, Pleasantville. About sixty were in attendance including a number of noted medical men.

During the afternoon hours Drs. Giese and Mullin of Colorado Springs, gave most interesting and worthwhile talks. Drs. D. C. Balfour and C. S. McVicar of Rochester, Minnesota, were present at the meeting and contributed to the program of the afternoon. Dr. O. B. Nesbit, medical supervisor of the schools of Gary, Indiana, read a most excellent paper concerning Scarlet Fever.

A toast program followed the serving hour with Dr. F. C. Mehler of New London as toastmaster. Responses were given by Drs. Magee of Burlington; Drs. Balfour and McVicar of Rochester, and Dr. Dorsey of Keokuk.

Dr. F. C. Mehler of New London is president and E. A. Stewart of Burlington, city secretary.

Lee County Medical Society

Lee County Medical Society held its forty-first semi-annual meeting at Keokuk, May 6. Physicians from Lee county, Burlington and Mount Pleasant and from Quincy, Illinois, were present. Dr. John Wilson, president, Dr. Frank Richmond, vice-president, and Dr. William Rankin, secretary-treasurer.

Program—Experimental Work in Scarlet Fever, Dr. Lee Forest Hill, Des Moines; Orthopedic Surgery, Dr. T. G. McCrey, Quincy, Illinois; Goitre, Dr. Edwin Sloan, Bloomington, Illinois.

Louisa County Medical Association

The semi-annual meeting of the Louisa County Medical Association was held Thursday afternoon, June 4, at the Masonic club rooms in Wapello. Members in attendance were: Drs. J. H. Chittum and E. C. Rogers of Wapello; Drs. D. W. Graham and W. B. Smythe of Morning Sun; Dr. T. L. Eland of Letts, and Drs. F. A. Hubbard, J. W. Pence, S. J. Lewis and O. W. Grew of Columbus Junction.

Visitors were: Dr. B. E. Eversmeyer, Dr. Lyle Howe of Muscatine; Drs. Harrison and McConahay of Winfield; Dr. H. H. English of Cone; Dr. J. W. Hubbard of Columbus Junction, and Drs. J. W. Bone and C. E. Ruth of Des Moines.

The following papers were read:

Available Laboratory Work for Local Doctors—J. H. Chittum.

Acute Appendicitis in Children—S. J. Lewis.

Fractures That Are Apt to Make the Most Trouble—C. E. Ruth.

Officers were elected as follows:

J. H. Chittum, president; W. B. Smythe, vice-president; O. W. McGrew, secretary-treasurer; D. W. Graham, E. C. Rogers, D. J. Higley, censors.

Scott County Medical Society

Two technical addresses on subjects of interest to the medical profession featured the joint meeting of the Scott County Medical Society and the Rock Island County Medical Society held May 4 following a dinner at the Davenport Chamber of Commerce. Dr. W. F. Boiler, professor of ophthalmology at the medical school of the University of Iowa on Problem of Lighting and Illumination as it Affects the General Practitioner, Dr. Don M. Griswold of the department of preventive medicine and hygiene of the state university, gave an address on The Clinical Application of Some of the Newer Concepts of Immunity. A reel lent by the Carlyle Ellis Film Co. of New York was shown and revealed how the New York State Board of Health is meeting the menace of tuberculosis.

Preceding the joint meeting each society held a business session. At the meeting of the Davenport society a committee was named consisting of Dr. Paul A. White, chairman, Dr. John I. Marker and Dr. C. E. Block, which was commissioned to investigate local interest in periodic health examinations and to make a report at the next meeting.

Dinner was served at 6:30 o'clock when covers were placed for forty-five.

Dr. R. P. Carney on behalf of the board of trustees of Pine Knoll Sanitarium issued an invitation to the two societies to hold their next meeting in September in the new hospital pavilion.—Davenport Times.

Story County Medical Society

The Story County Medical Society met at the Sheldon-Munn Hotel at Ames, May 1. Dr. H. M. Templeton, president, Ames; Dr. B. G. Dyer, secretary, Ames.

The meeting was held for the purpose of electing officers and forming plans for the coming year. Officers elected were: Dr. F. S. Smith, president, Nevada; Dr. J. Joor, vice-president, Maxwell; Dr. B. G. Dyer, secretary, Ames; delegate to State Society, Dr. B. G. Dyer, Ames; alternate, Dr. F. H. Connor, Nevada.

Following the society dinner, Dr. D. W. Harmon read a paper on Chemico-Therapy, and Dr. E. B. Bush on Leukemia.

Tama County Medical Society

The Tama County Medical Society held their April meeting at the Indian Sanatorium near Toledo on the 27th. The doctors and their wives were the guests of Dr. and Mrs. Jacob Breid at a 12 o'clock dinner. Sixteen doctors being present, after which a paper by Dr. A. J. Farnham of Traer, Urinary Tract Infections, was read, followed by election of officers as follows: Dr. Jacob Breid, president; Dr. A. A. Crabbe, vice-president; Dr. Geo. Myers of Gladbrook, secretary-treasurer; censors, Drs. Pace, Allen and Farnham. Delegate to Iowa State Medical Society meeting, Dr. Jacob Breid, with Dr. J. A. Pinkerton as alternate. Dr. Breid has under his charge ninety tubercular Indian patients placed here by the government from not only the Tama County Indian Reservation, but from the several surrounding states. A. E. Kepford, superintendent of the State Juvenile Home at Toledo, who was made an honorary member of the society at this meeting, extended an invitation to the doctors to have their June meeting at the institution, as his guests, which was accepted.

A. A. Crabbe, M.D.,
Chairman, Pub. Com.

Four-County Medical Society

The Four-County Medical Society will meet in Cherokee Tuesday evening, May 19. This organization comprises Plymouth, Buena Vista, Ida and Cherokee Counties, and meets about three times a year.

Dr. Allen, chairman of the committee on arrangements, informs us that the main scientific meeting will probably be held at the Country Club, following a dinner at the Lewis Hotel. Details of the program are not yet announced.—Cherokee Chief.

Northwest Iowa Medical Society

The spring meeting of the Northwest Iowa Medical Society was held at Spencer, April 10.

The program consisted of a paper by Dr. C. E. Birney of Estherville, on Dyscrasias of the Blood and Their Treatment. By Dr. C. M. Coldren of Milford, on Rectal Examinations in Obstetrics. By Dr. G. W. Adams of Royal, on Sub-Acute Bacterial Endocarditis. By Dr. James Hennessy of Emmetsburg on Angina Pectoris, and by Dr. J. H. Bruce of Dickens, on Toxemia of Pregnancy. Case reports were presented with autopsy findings, by Dr. E. E. Munger of Spencer.

Officers elected were: Dr. Harold L. Brereton, president, Emmetsburg; Dr. J. H. Bruce, vice-president, Dickens; Dr. Morton, secretary, Estherville.

Northwest Iowa Medical Society

The Northwest Iowa Medical Society met at the Arlington Hotel, Sheldon, May 7. Dr. W. C. Hand, president; Dr. J. W. Meyers, secretary-treasurer, Sheldon. Banquet served at 7:00 p. m., after which the program: History Taking in Disease, Dr. C. L. Roland, Chatworth. The Diagnosis of Bone Tumors, with lantern slides, Dr. R. F. Bellaire, Sioux City. Some Observations on Immunity, Dr. C. F. Cashman, Hartley. Internal Secretions, Dr. H. J. Brackney, Sheldon.

Iowa Clinical Medical Society

The Iowa Clinical Medical Society held its spring meeting in Des Moines, on May 12. The Clinic was held in the Iowa Methodist Hospital and cases were presented by the following physicians: W. L. Bierring, M.D.; E. B. Winnette, M.D.; L. F. Hill, M.D.; Fred Moore, M.D.; T. A. Burcham, M.D.; M. M. Myers, M.D.; John H. Peck, M.D.; R. R. Simmons, M.D.

The Des Moines members of the organization were hosts at a complimentary luncheon at the Grant Club, after which the cases presented at the morning clinic were discussed.

The following officers were elected for the ensuing year: President, F. G. Murray, M.D., Cedar Rapids; vice-president, George Koch, M.D., Sioux City; secretary-treasurer, Russell C. Doolittle, M.D., Des Moines.

Russell C. Doolittle.

Iowa State Heart Association

Pursuant to the call of the Organization Committee appointed by the American Heart Association, a meeting was held on Tuesday evening, May 12, 1925, at the Fort Des Moines Hotel, at which time Iowa State Heart Association was organized. About sixty members of the Iowa State Medical Society were present and expressed great interest in this new movement. A constitution was adopted, and the officers were elected as follows: President, Dr. Merrill M. Myers, Des Moines; vice-president, Dr. Fred M. Smith, Iowa City; secretary-treasurer, Mr. T. J. Edmonds, Des Moines. Executive Committee, Walter L. Bierring, Des Moines; T. L. Treynor, Council Bluffs; W. H. Rendleman; Davenport; J. W. Koch, Dubuque.

During the organization period there will be no dues, and all members of the Iowa State Medical Society and laymen interested in public health matters are requested to send in their names to the secretary, Mr. T. J. Edmonds, 518 Frankel bldg., Des Moines, in order to have their names enrolled as charter members.

During the coming year a systematic plan of publicity will be carried out and special heart clinics will be conducted as requested by County Medical

Societies. The closest cooperation will be maintained with the County Medical Societies and affiliated organizations such as the Iowa Tuberculosis Association.

Iowa takes a pioneer place in this movement in being the first state to directly affiliate with the Iowa Tuberculosis Association and through it with the National Tuberculosis Association, and is the second state heart association to be formed, Pennsylvania being the first. The American Heart Association was formed last year at the time of the American Medical Association meeting in Chicago.

Walter L. Bierring, M.D.

INTER-STATE POST-GRADUATE ASSEMBLY OF AMERICA

The Inter-State Post-Graduate Assembly of America, will be held at St. Paul, Minnesota, October 12 to 16 inclusive, 1925.

A list of those who have thus far accepted the invitation to appear on the scientific program follows:

Dr. Harlow Brooks, professor of clinical medicine, University and Bellevue Hospital, Medical College, New York City.

Dr. Geo. J. Heuer, professor of surgery, University of Cincinnati, College of Medicine, Cincinnati, Ohio.

Dr. Chas. B. Lyman, professor of clinical surgery, University of Colorado, School of Medicine, Denver, Colorado.

Dr. Thomas W. Salmon, professor of psychiatry, Columbia University, School of Medicine, New York City.

Dr. Cornelius G. Coakley, professor of laryngology and otology, Columbia University, School of Medicine, New York City.

Dr. Chas. N. Dowd, professor of clinical surgery, Columbia University, School of Medicine, New York City.

Dr. Herbert B. Wilcox, professor of pediatrics, Columbia University, school of medicine, New York City.

Dr. J. Bentley Squiet, professor of urology, Columbia University, School of Medicine, New York City.

Dr. Charles L. Gibson, professor of surgery, Cornell University, School of Medicine, New York City.

Dr. Edward L. Keyes, professor of clinical surgery, department of urology, Cornell University, School of Medicine, New York City.

Dr. Frank Boland, professor of surgery, Emory University, School of Medicine, Atlanta, Georgia.

Dr. Eugene E. Murphy, professor of medicine, University of Georgia, School of Medicine, Augusta, Georgia.

Dr. Nathaniel Allison, professor of orthopedic surgery, Harvard University, School of Medicine, Boston, Massachusetts.

Dr. James H. Means, professor of clinical medicine, Harvard University, School of Medicine, Boston, Massachusetts.

Dr. William P. Graves, professor of gynecology, Harvard University, School of Medicine, Boston, Massachusetts.

Dr. Walter B. Cannon, professor of physiology, Harvard University, School of Medicine, Boston, Massachusetts.

Dr. Milton J. Rosenau, professor of preventive medicine and hygiene, Harvard University, School of Medicine, Boston, Massachusetts.

Dr. Albert J. Ochsner, professor of surgery, University of Illinois, College of Medicine, Chicago, Illinois.

Dr. Charles S. Williamson, professor of medicine, University of Illinois, College of Medicine, Chicago, Illinois.

Dr. Edward W. Montgomery, professor of medicine and clinical medicine, University of Manitoba, Faculty of Medicine, Winnipeg, Canada.

Dr. Maurice C. Pincoffs, professor of medicine, University of Maryland, School of Medicine, Baltimore, Maryland.

Dr. Arthur M. Shipley, professor of surgery, University of Maryland, School of Medicine, Baltimore, Maryland.

Dr. Alfred T. Bazin, professor of surgery, McGill University, Faculty of Medicine, Montreal, Canada.

Dr. H. B. Cushing, clinical professor of pediatrics, McGill University, Faculty of Medicine, Montreal, Canada.

Dr. A. Mackenzie Forbes, clinical professor of orthopedics, McGill University, Faculty of Medicine, Montreal, Canada.

Dr. J. G. Meakins, professor of medicine and director of the department, McGill University, Faculty of Medicine, Montreal, Canada.

Dr. Hugh Cabot, professor of surgery, University of Michigan, School of Medicine, Ann Arbor, Michigan.

Dr. John P. Lord, professor of orthopedic surgery, University of Nebraska, School of Medicine, Omaha, Nebraska.

Dr. George Draper, New York City.

Dr. C. J. Macguire, New York City.

Dr. James T. Gwathmey, New York City.

Dr. Willy Meyer, professor of surgery, New York Post-Graduate School of Medicine, New York, New York.

Dr. Joseph B. De Lee, professor of obstetrics, Northwestern University, School of Medicine, Chicago, Illinois.

Dr. Allen B. Kanavel, professor of surgery, Northwestern University, School of Medicine, Chicago, Illinois.

Dr. Ernest F. Tucker, professor of gynecology, University of Oregon, School of Medicine, Portland, Oregon.

Dr. Joseph Sailer, professor of clinical medicine, University of Pennsylvania, School of Medicine, Philadelphia, Pennsylvania.

Dr. John B. Deaver, professor of surgery, University of Pennsylvania, School of Medicine, Philadelphia, Pennsylvania.

Dr. Charles H. Frazier, professor of neurosurgery, University of Pennsylvania, School of Medicine, Philadelphia, Pennsylvania.

Dr. L. J. Austin, professor of surgery, Queen's University, Faculty of Medicine, Kingston, Canada.

Dr. Stanley P. Reimann, director of Laboratories, Lankenau Hospital, Philadelphia, Pennsylvania.

Dr. Dean Lewis, professor of surgery, Johns Hopkins University, Chicago, Illinois.

Dr. Arthur Dean Bevan, professor of surgery, Rush Medical College, Chicago, Illinois.

Dr. Rollin T. Woodyatt, clinical professor of medicine, Rush Medical College, Chicago, Illinois.

Dr. Hanau W. Loeb, dean and professor of ear. nose and throat diseases, St. Louis University School of Medicine, St. Louis, Missouri.

Dr. James E. Thompson, professor of surgery, University of Texas, School of Medicine, Galveston, Texas.

Dr. Duncan A. L. Graham, professor of medicine, University of Toronto, Faculty of Medicine, Toronto, Canada.

Dr. E. E. Francis, professor of surgery, University of Tennessee, School of Medicine, Memphis, Tennessee.

Dr. William H. Witt, professor of medicine and clinical medicine, Vanderbilt University, School of Medicine, Nashville, Tennessee.

Dr. Elsworth S. Smith, professor of clinical medicine, Washington University, School of Medicine, St. Louis, Missouri.

Dr. F. E. Bunts, Cleveland Clinic, Cleveland, Ohio.

Dr. U. V. Portmann, Cleveland Clinic, Cleveland, Ohio.

Dr. John Phillips, Cleveland Clinic, Cleveland, Ohio.

Dr. George W. Crile, professor of surgery, Western Reserve University, School of Medicine, Cleveland, Ohio.

Dr. Wilder Tileston, clinical professor of medicine, Yale University, School of Medicine, New Haven, Connecticut.

Dr. Samuel Clark Harvey, associate professor of surgery, Yale University, School of Medicine, New Haven, Connecticut.

Dr. Guy L. Hunner, associate professor of gynecology, Johns Hopkins University School of Medicine, Baltimore, Maryland.

Dr. William H. Wilder, professor of ophthalmology, Rush Medical College, Chicago, Illinois.

Dr. Charles Jefferson Miller, professor of obstetrics and clinical gynecology, Tulane University of Louisiana, New Orleans, Louisiana.

MEDICAL NEWS NOTES

The annual reunion of the graduates of the Keokuk Medical Schools was held in Iowa City, June 8. Dr. J. M. Auld of Chicago, is the president of the Society; Dr. J. W. Herrick of Ottumwa, vice-president, and Dr. H. C. Young of Bloomfield secretary-treasurer. On Monday morning the graduates gathered in the liberal arts building and received greetings from Dr. C. S. Chase of Iowa City. Dr. Auld made the response. The roll call by classes, election of officers and new business in this session. In the afternoon the doctors visited the new medical buildings and made a trip to the Iowa tuberculosis hospital at Oakdale.

In the evening there was a banquet with Dr. Hattie B. Melaik as the toastmaster. Dr. L. W. Dean made the address and short talks were made by all faculty members present. Members of the faculty of the old Keokuk schools include the following doctors: Drs. C. R. Armentrout, Keokuk; C. E. Ruth, Des Moines; James M. Ball, St. Louis; Frank M. Fuller, Keokuk; J. R. Hollowbush, Rock Island; R. M. Lapsley, Keokuk; S. W. Moorhead, Keokuk; George E. Marshall, Davenport; F. P. Norbury, Jacksonville, Illinois, and Oliver D. Walker, Salina, Kansas.

The class of 1908 was the last class to graduate from the Keokuk Medical College, which was in that year consolidated with Drake and later moved to Iowa City.

Following is the list of graduates of the Keokuk schools, as sent out by the committee in charge of the reunion:

1870—Wm. Robinson, Denver, Colorado.
1873—O. W. Lowery, Des Moines, Iowa.
1875—E. Hull, Carlisle, Iowa; F. M. McCrea, Eddyville, Iowa; J. C. Boice, Washington, Iowa.
1876—T. A. Bryant, Headrick, South Dakota.
1877—J. W. Cokenower, Des Moines, Iowa; D. W. Humphrey, Bowen, Illinois.
1878—R. S. Dinsmore, Troy, Kansas; T. G. McClure, Douds, Iowa; J. J. Selman, Blakesburg, Iowa.
1879—W. C. Davis, 25 E. Washington Boulevard, Chicago, Illinois.
1880—J. M. Auld, 5 S. Wabash ave., Chicago, Illinois.
1881—William M. Young, Jefferson, Iowa.
1882—F. E. Schinck, Burlingame, Kansas.
1884—E. E. Leggett, Oswego, Kansas.
1887—J. W. Bowling, Swaneetown, Illinois; P. J. Hession, Graettinger, Iowa; Dr. Henneson, Emmetsburg, Iowa; F. E. Livingston, Livermore, Iowa.
1889—C. C. C. Heady, Bloomfield, Iowa.
1890—Geo. A. Gilbert, New Canton, Illinois; R. M. Lapsley, Keokuk, Iowa.
1891—A. C. Armitage, Culbertson, Nebraska; Geo. W. Roller, Lancaster, Ohio; J. T. Reeves, Vandalia, Illinois; A. I. Blickham, Quincy, Illinois; A. D. Chittum, Sorento, Illinois; R. A. Callihan, Luray, Missouri; R. A. Callihan, Luray, Missouri; Otis Cobb, Lovilla, Iowa; J. W. Cline, Santa Rosa, California; S. A. Cassidy, Cantril, Iowa; A. V. Decker, Newkirk, Oklahoma; Andrew J. Farmer, Hartville, Missouri; W. K. Githins, 1228 Vermont street, Quincy, Illinois; Fred J. Graber, Stockport, Iowa; W. L. Gray, Champaign, Illinois; J. S. Gwaltney, Wiedward building, San Pedro, California; A. J. Hays, Fredrick, Oklahoma; T. S. Hes-

sion, Peoria, Illinois; C. E. Houser, Vici, Oklahoma; J. F. Herrick, Ottumwa, Iowa; H. M. Hepperland, Beatrice, Nebraska; William Hendricks, 6143 Bishop street, Chicago, Illinois; J. W. Johnston, Garnet, Kansas; Belle Johnston, Garnet, Kansas; John T. Lloyd, Baldwin, Illinois; I. N. Lovett, Lineville, Iowa; Fred J. Ladd, Third avenue West, Cedar Rapids, Iowa; L. H. Morphew, Stuttgart, Arkansas, R. I. McConnell, Baylis, Illinois; E. R. Neeper, Colorado Springs, Colorado; F. M. Pitts, Afton, Iowa; C. D. Pitts, Martinsdale, Iowa; A. M. Pond, 3200 West Sixth street, Los Angeles, California; H. B. B. Poppe, 192 Wisconsin street, Milwaukee, Wisconsin; B. S. Pennington, Hoisington, Kansas; R. S. Schroeckenstein, Marion, Wisconsin; M. W. Spohn, Chester, Nebraska; L. E. Vermillion, Lyons, Kansas; J. Whitefield Smith, Bloomington, Illinois; H. C. Young, Bloomfield, Iowa.

1892—Clara Kimball Cronk, Bloomfield, Iowa; C. D. Fellows, Algona, Iowa; Albert L. Murdy, Aberdeen, South Dakota; L. Morrison, Stockport, Illinois; Arthur Parsons, Geneseo, Illinois; A. L. Spooner, LuVerne, Iowa.

1893—Ellen Miner, Champaign, Illinois; H. P. Morrey, Santa Barbara, California; G. A. Thieme, Cantril, Iowa; J. W. Woodridge, Cylinder. Iowa.

1894—Z. Morrison, Stockport, Iowa; E. L. Newton, 9 James block, Ft. Madison, Iowa.

1895—H. W. Giles, New Boston, Illinois; W. J. Herrick, Ottumwa, Iowa; F. A. S. Rebo, Alexandria, Missouri; J. M. Thomber, Carthage, Illinois; Frank Winsel, Moravia, Iowa.

1896—C. Sumner Gregory, Findley, Illinois; H. J. Gilfillan, Milton, Iowa; J. Hennessy, Emmetsburg, Iowa; Samuel B. Peacock, Pittsfield, Illinois.

1897—G. I. Armitage, Murray, Iowa; C. W. Bailey, Pleasant Plain, Iowa; E. A. Boone, Keil, Oklahoma; A. T. Botts, 610 Gushand building, Decatur, Illinois; C. W. Reynolds, Horton, Kansas; C. W. Chittub, Wapello, Iowa; C. P. Cook, Des Moines, Iowa; H. C. Clearwater, Washougal, Washington; H. O. Collins, Quincy, Illinois; Frank Corwin, Corwin Springs, Idaho; W. H. Durkee, Fulton, Illinois; Frank M. Fuller, Keokuk, Iowa; T. C. Hainline, Seaton, Illinois; J. W. Hubbard, Columbus Junction, Iowa; Clyde Henry, Farson, Iowa; Chas. McNiel, Quincy, Illinois; A. S. Main, Loup City, Nebraska; F. W. Mason, Great Neck, New York; H. B. Melaik, Kewanee, Illinois; L. O. Owens, LaGrange, Missouri; H. C. Payne, Perry, Iowa; G. E. Pumphrey, Carthage, Illinois; M. Reiffert, Quincy, Illinois; H. T. Smith, Hummiston, Illinois; J. D. Searles, Minooka, Illinois; R. D. Toben, Bloomfield, Iowa; R. L. Von Trebra, Chetopa, Kansas; U. J. Unger, Tulsa, Oklahoma; G. L. Watson, Cherokee, Iowa; Cora Wittich, Carthage, Illinois.

1898—C. R. Dussell, Keosauqua, Iowa; W. E. Davidson, Liberty, Illinois; F. J. Fielding, Mil. ave. and Paulina street, Chicago, Illinois; W. M. Giles, Wataga, Illinois; Grant Giles, Bloomfield, Iowa; H. D. King, Batavia, Iowa; E. E. Morton, Des Moines, Iowa; James Murphy, 603 Third avenue E., Cedar Rapids, Iowa; G. P. Moren, Kewanee, Illinois; E. E. Sherman, Keosauqua, Iowa; Dr. Schoaff, Peoria, Illinois; Dr. Shepherd, Mystic, Missouri.

1899—H. E. Eiel, Buffalo Center, Iowa.

1900—H. A. Gray, Keokuk, Iowa; W. H. Mott, Farmington, Iowa; B. S. Walker, Corydon, Iowa.

1901—W. E. Davidson, Liberty, Illinois; E. G. Myrick, Fairfield, Iowa; A. A. Sandy, Des Moines, Iowa; A. H. Wakeman, Ft. Dodge, Iowa.

1903—H. W. Canfield, Baxter, Iowa; Jessie S. Coontz, Garden Grove, Iowa; L. M. Dickson, Arapohoe, Colorado; C. E. Donahoo, East Moline, Illinois; E. G. Holden, Eaton, Colorado; H. S. Heckins, Pasadena, California; P. V. Janse, LuVerne, Iowa; Lloyd Nobel, Rhodes, Iowa; Eugene Tillison, Orient, Iowa; Eugene Tinsley, Orient, Iowa; William H. Wilson, Randall, Iowa.

1904—C. R. Armentrout, Keokuk, Iowa; W. L. Alcorn, Ainsworth, Iowa; William Blender, Carthage, Illinois; J. A. Cousins, 14 E. Jackson boulevard, Chicago, Illinois; Dr. Moore, Eldon, Iowa; Dr. A. W. Meyers, Quincy, Illinois; E. R. Newland, Drakesville, Iowa; E. A. Nash, Peterson, Iowa; C. A. Thomas, Coffeyville, Kansas; J. R. Walker, Enid, Oklahoma.

1905—J. E. Aleshire, Plainville, Illinois; W. A. Alcorn, Ainsworth, Iowa; C. H. Brigham, Brookville, Illinois; Earl Cooper, Augusta, Illinois; C. H. Cronk, Bloomfield, Iowa; L. E. Frazier, Bradford, Iowa; A. H. Foster, Erie, Illinois; Florence Howard, Warsaw, Illinois; Oliver McGrew, Columbus Junction, Iowa; Earl Noble, Clemonds, Iowa; Roscoe Pollock, Douds, Iowa; L. E. Peters, Clayton, Illinois.

1906—Hugh S. Reed, Guide Rock, Nebraska; F. H. Dieker, Fort Madison, Iowa; H. D. Earl, State Hospital, San Pedro, California; James Hennessy, Emmetsburg, Iowa; William E. Mercer, Liberty, Illinois; D. R. Peters, Mt. Sterling, Illinois; F. L. Wicks, Valley City, North Dakota; R. E. Wasson, Fairview, Illinois.

1907—A. J. Dalton, St. Joseph, Illinois; J. B. Dierker, Lawrence, Nebraska; Noel Dean, Sumner, Illinois; James W. Pence, Columbus Junction, Iowa; E. F. Stannus, Quincy, Illinois; C. N. Stephenson, Milton, Iowa; Jeannette F. Throckmorton, State House, Des Moines, Ia.

1908—Ralph J. Selman, Blakesburg, Iowa; G. A. Tankersley, Owaneco, Illinois; Horace E. Yates, Mount Vernon, Illinois.
J. C. Russell, Carlyle, Illinois.

Oscar S. Dailey, Port Byron, Illinois.
G. J. Goodwin, Belleview, Illinois.
O. E. Hutchins, Warsaw, Illinois.
L. C. Hows, Muscatine, Iowa.
E. O. Onion, Canton, Illinois.
D. R. Peters, Timewell, Illinois.
William Rankin, Basco, Illinois.
F. C. Scott, Dallas City, Illinois.
F. C. Smith, Palo Alto, California.

Twenty Iowa physicians, five of whom are from Des Moines, will leave on the inter-state post-graduate clinic tour of seven weeks to the British Isles and France.

Dr. Addison C. Page, president of the Tri-State District Medical Association, will head the Iowa delegation and with Dr. Charles H. Mayo of Rochester, president of clinics, will supervise the entire journey. Several hundred American physicians are expected to make the trip.

The Des Moines doctors who are taking the tour are Dr. Frederick Alden, Dr. L. M. Nourse, Dr. J. C. Rockafellow, Dr. Jeannette Throckmorton and Dr. Page.

Other Iowa doctors who will go are Dr. George B. Crow and Dr. C. H. Magee of Burlington, Dr. W. T. Daly of Cresco, Dr. L. H. Kornder, Dr. J. S. Waber and Dr. R. P. Carney of Davenport; Dr. Henry G. Langworthy of Dubuque, Dr. D. H. King of Batavia, Dr. Frank Dorsey, Jr. of Keokuk, Dr. R. R. Hansen of Marshalltown, Dr. E. B. Howell, Dr. E. G. Barton and Dr. F. L. Nelson of Ottumwa; Dr. John O'Keefe of Waterloo and Dr. W. A. Rohlf of Waverly.

The party will assemble in Chicago on May 17 and will go by special train direct to Toronto. The group will sail on the S. S. Doric May 22 from Montreal and will return on the S. S. Orbita, sailing June 27.

The American physicians will visit the leading hospitals and clinics in England and on the continent and several hundred special clinic demonstrations covering every branch of the medical science have been arranged.

Receptions and luncheons will be given by the lord mayor of London, the presidents of the Royal Societies of Medicine and Surgery, the English Speaking Union, the Pilgrims Society, American Chamber of Commerce and members of the British Government.

Mr. Hal S. Chase and Wr. Will Harbach are accompanying the Des Moines group on the trip.—Tribune-News, Des Moines, Iowa.

Death Rate in Cities of Iowa for Year 1924

Fort Dodge led the eighteen largest municipalities of Iowa in health during 1924 with a death rate of only 211.5 per 100,000 population based on communicable diseases, pneumonia, cancer and other malignant tumors.

Such is the showing in the annual report now in preparation by Dr. Rodney P. Fagan, state health commissioner.

Waterloo and Cedar Rapids are next in health surveys, considering these specified forms of diseases during the last year, the former showing a death rate of 213.6 and the latter 214.7 per 100,000 population.

The other fifteen principal cities of Iowa ranked as follows: Sioux City, 225.6; Davenport, 231; Burlington, 250.1; Boone, 252.8; Mason City, 264; Des Moines, 272.6; Council Bluffs, 307.5; Marshalltown, 310.5; Ottumwa, 333; Fort Madison, 335.6; Muscatine, 347.2; Clinton, 368.1; Keokuk, 428.6; Dubuque, 669.8 and Iowa City, 788.

Communicable diseases considered in this report include typhoid, small-pox, measles, scarlet fever, whooping cough, diphtheria, mumps and tuberculosis.

Not a single death from typhoid fever was reported from Mason City, Clinton, Iowa City, Cedar Rapids, Muscatine or Ottumwa during 1924. Keokuk had the highest typhoid death rate of any of the eighteen cities, 27.2 per 100,000 population. Dubuque with 15.5 and Fort Madison's 14.6 were next highest in order.

Small-pox set a rate of twenty-four deaths per 100,000 population in Mason City, 2.5 in Council Bluffs and 2.4 in Waterloo. All other cities had a zero mark in this column. Mason City also had the highest death rate in measles, 48 on the same population basis. Keokuk had 47.8 while the rate varied down the scale to absolute blanks for Burlington and Dubuque.—Clinton Advertiser.

Election of Dr. Horace D. Arnold

The National Board of Medical Examiners, at its annual meeting in Washington on May 4, unanimously elected Dr. Horace D. Arnold president, for the ensuing year, to succeed M. W. Ireland, who retired from this office.

Dr. Arnold was one of the original members of the National Board when it was organized in 1915, and is the first president from civilian life. Admiral William C. Braisted, surgeon general of the navy, was the first president, and was succeeded by Surgeon General Ireland three years ago.—Boston Medical and Surgical Journal.

HOSPITAL NOTES

Evacuation Hospital No. 55 has been organized with Dr. R. Fred Throckmorton as commander, by the medical staff of Mercy Hospital, Des Moines. This is the second army reserve hospital organized in Des Moines. General Hospital No. 60 was formed at Methodist Hospital several months ago with the late Dr. Charles F. Smith as commander. Both organizations are officered by medical reserve officers and are subject to call in time of war or emergency.

At a dinner at which Superintendent C. C. Hurin of Methodist Hospital was host to the medical reserve officers of the city Dr. Oliver J. Fay pre-

sented the Methodist Hospital unit with a handsome American flag and Dr. Thomas Burcham presented a guerdon.

Lieut. Col. David H. Biddle, temporary commander of Fort Des Moines, made a short talk.—Des Moines Capital.

Dr. Christopher Gregg Parnall, a noted medical authority of America, will give an address at the commencement exercises of the St. Luke's Hospital School of Nursing, to be held at Trinity cathedral Friday evening, May 22.—Davenport Democrat.

Spring graduation exercises of nurses from Des Moines were announced.

Iowa Lutheran Hospital is holding its exercises Tuesday evening, Mercy Hospital, Monday evening, Congregational Hospital, May 27, while the Methodist institution will announce their date in a few days.

Exercises for the Lutheran nurses will be held at the First Lutheran Church with twenty receiving diplomas. Dr. G. A. Brandelle, president of the Augustana Synod of Lutheran churches, and Dr. Julius S. Weingart, president of the hospital medical staff, will give the principal addresses. On Monday evening a reunion of all former classes will be held at the nurses' home.

Twelve nurses will compose the Mercy Hospital graduating class, with exercises held at Hoyt Sherman Place. Dr. William Moorehouse of Miama Medical College at Chicago will deliver the address. There will be musical numbers and a response by one of the doctors on the hospital staff.

Congregational Hospital will graduate eight nurses. The program will be announced later.—Des Moines Capital.

PERSONAL MENTION

Dear Doctor Fairchild: Please excuse delay—I have been quite ill for some time and am only very slowly getting better. In fact, I fear I may only hope for improvement. I think often with much pleasure of my visit to Iowa and the many pleasant people whom I met. With cordial greetings to Mrs. Fairchild and yourself. (Signed) Emil Mayer.

Dr. and Mrs. F. L. Nelson, 948 North Court street, Ottumwa, will leave Monday for Vancouver, B. C., where they will sail on the steamship Empress of France. They will travel down the west coast to South America, returning through the Panama canal, the West Indies and to New York City. From New York City, Dr. Nelson will go to England, where he will join the Inter-State Medical group, studying in the hospitals of England, Scotland and France. Mrs. Nelson will visit in New Jersey during the summer. Following this tour Dr. Nelson will go into the hospitals of Germany, Vienna, Budapest, Hungary, and Zurich, Switzerland, and after a visit to Italy and a Mediterranean trip he will sail for New York.—Ottumwa Courier.

Dr. Julia F. Hill, daughter of Dr. and Mrs. Gershom H. Hill of Des Moines, a Grinnell College graduate and well known here through her connection for some time with the Community Hospital has an interesting article on Conserving Our Mental Health in a recent issue of The Journal of the Iowa State Medical Society. Her picture appears in the same issue. Dr. Hill is now assistant physician for The Retreat, in Des Moines, the hospital for mental cases so long operated by her father. She was president of the State Society for Iowa Medical Women during 1923-24. The article referred to has been published in pamphlet form and has had a wide circulation.—Oskaloosa Herald.

Dr. George Mogridge, superintendent of the Institution for Feeble Minded Children, has departed for Raleigh, North Carolina, to attend the national association for the Study of Feeble Minded. He bears the distinction of being the oldest member of this organization, having been affiliated with it for about thirty-six years. He is also famed for having been engaged the longest of any others of the association in his chosen work. The doctor goes from Raleigh to Richmond to attend a medical convention and from there on to Washington, D. C. He is expecting to return in about two weeks.—The Opinion, Glenwood.

While in Des Moines, to attend a meeting of the Iowa State Medical Society, Dr. C. B. Powell suffered a stroke of apoplexy, at his room in the Chamberlain Hotel. Mr. and Mrs. C. E. Prizer accompanied the Doctor to Des Moines Tuesday evening and they called Dr. S. T. Gray, who was also attending the medical meeting, who administered to the stricken man. Dr. Burke Powell was called over the phone and he and Mrs. Powell together with Dr. Gutch left at 2:00 a. m. for Des Moines. Dr. Gutch and Mrs. Powell returned early this morning and dispatched the Miners Hospital ambulance to the capital city, leaving here about eight a. m. and it is expected the ambulance will return this afternoon bringing the Doctor to his home here. While Dr. Powell suffered a severe cerebral hemorrhage, Dr. Gutch stated, that he thought he would recover from the attack, as he was holding his own at the time he left this morning, about five o'clock.—Union Republican, May 14.

Dr. and Mrs. James Taggart Priestley are motoring in the east. They have visited with Mrs. Urban Woodbury at Apple Tree Point farms, Burlington, Vermont, and are now spending some time in Atlantic City. They will attend the graduation of their grandson, Mr. Joseph Priestley from medical college at the University of Pennsylvania in June. Returning to Des Moines later in the month, they will be accompanied by Mr. James Priestley. Mr. Joseph Priestley will remain in Philadelphia to take up his internship.—Plain Talk.

His many friends are glad to know that Dr. C. B. Powell is slowly recovering from his stricken condition sustained while in Des Moines last week. He stood the trip home in the hospital ambulance very well and shows a steady improvement. Not only

were Mr. and Mrs. Prizer with him at the time of the attack but Dr. J. M. Griffin, who is the house doctor at Hotel Chamberlain, gave prompt and valuable attention, and Dr. Burke Powell and Dr. Gutch were soon there after being notified. Dr. S. T. Gray was also in attendance.—Monroe County News, May 21.

The court directs a verdict for defendants, Drs. Hagenoeck, Stoecks, Maxwell and Kronder of Davenport, in a malpractice suit for $30,000. The case has been in the courts for more than two years. It is said that a motion for a new trial will be filed.

Dr. R. A. Evans of Ponca, Nebraska, will locate in Algona, taking over the practice of Dr. C. D. Fellows.

MARRIAGES

Dr. A. D. Woods of State Center and Miss Eldora Benteman, formerly of Montezuma, were married recently.

OBITUARY

Dr. S. T. Patterson died at Congregational Hospital, Des Moines, May 1, 1925.

Samuel T. Patterson was born May 4, 1885, at Marengo, Iowa, and was a son of Mr. and Mrs. James Patterson, pioneer settlers in Jones county. He received his early education there and later attended Creighton University at Omaha, where he completed his medical course. He first began to practice his profession at Mackey, Idaho, where he met and married Miss Mabel Burnett on June 11, 1909. They later moved to Arthur, Iowa, where he practiced medicine two years and he then enlisted in the medical corps of the United States Army, assuming the rank of lieutenant. Following his discharge from the army he returned to Idaho where his family was and practiced there for a short time. The family again returned to Iowa and shortly after came to Breda in February, 1922, where they since lived.—Breda News.

Dr. John Franklin Spear of Churdan, died at the Methodist Hospital, Des Moines, April 18, 1925.

Dr. Spear graduated from the Medical School University of Illinois and practiced in Churdan and neighboring towns for sixteen years.

Dr. Charles Willis Henry was born September 17, 1854, in Newark, Lickine county, Ohio, and departed this life Sunday morning, May 10, aged seventy years, seven months and twenty-three days. In the year 1864, as a boy ten years of age, he moved with his parents to Blairstown, Iowa. He graduated from Rush Medical College, Chicago, in 1884. He first began the practice of medicine in Persia, Iowa, where he remained for one year. From there he moved to Templeton where he remained for three and one-half years. Thirty-six years ago he came to Coon Rapids where for thirty years he practiced his profession. Six years ago he retired from active service.

June 9, 1886, he was united in marriage to Lucy Seyller. To this union four children were born, two dying in infancy.

Dr. Josephine Tenny, eighty-four years of age, a pioneer resident of Washington county, died yesterday at the county home where she had been for the past few years. She was born March 9, 1841 in Indiana. In 1842 she came with her parents to Iowa, locating near Rome. They moved to the vicinity of Ainsworth in 1851.

She practiced medicine in Oskaloosa for a number of years. She was a graduate of the Keokuk Medical school and attended Iowa University.

Dr. John W. Hiatt, son of William T. and Thankful Biggs Hiatt, was born in Knox county, Ohio, March 20, 1861. He was married with Emma Cadwallader, November 30, 1892. He was a graduate of the medical department of the Ohio State University, class 1890. He practiced in Detroit, Michigan, until 1905. His health failing he went west and became interested in mining in Nevada and California. His home was near Placerville, California, in the Eldorado foothills. He was always a student for his own pleasure and satisfaction as well as for the service he could be to his fellowmen. He studied law and graduated from the Detroit College of Law in 1897.

Death occurred at the home at Placerville, California, caused by acute peritonitis, the result of chronic appendicitis. The body was brought to Oskaloosa where funeral was held Saturday, May 9, 1925, by Rev. Allen O. Birchenough, rector of St. James' Episcopal Church, assisted by Rev. George E. Purdy, pastor of the Christian Church.

Dr. Leonard Sells, a pioneer of Buchanan county, died at the home of his daughter, Mrs. Ada Zabriski, May 3, 1925.

Dr. A. J. Meyers of Creston died at his home May 1, 1925, at the age of seventy-one years. About a year ago he suffered a stroke of apoplexy and has been in poor health since.

Dr. Meyers was born January 12, 1854 in Pennsylvania and came to Creston in 1879.

Dr. E. E. Mathews of Des Moines died suddenly May 18, it is believed of heart disease.

He was a graduate of the Ohio State University.

Bertram Welton Sippy, well known for his work on diseases of the stomach and gastrointestinal tract and as a clinical teacher of marked ability, died suddenly of heart disease, complicating diabetes, at his summer home near Ludington, Michigan, August 15, 1924.

Dr. Sippy was born in Neptune, Wisconsin, October 30, 1866. He attended the University of Wisconsin 1884-1887, and then went to Rush Medical

College, where he received his medical degree in 1890. He served for two years as an intern in the Cook County Hospital, and then was for three years assistant chief surgeon of the Northern Pacific Railroad. In 1895 he went to Vienna for one year of post-graduate study, and on his return became instructor, and later assistant professor of medicine at Rush Medical College. Since 1906, he has been professor of medicine in Rush Medical College and the University of Chicago. He was a member of the Association of American Physicians and the American Gastroenterological Association and attending physician of the Presbyterian Hospital and other Chicago institutions.

Dr. Sippy was especially well known for his system of treatment of gastric and duodenal ulcers, a method elaborated upon the basis of physiologic and chemical studies. He contributed special articles on this condition to periodical literature and to such works as the Oxford and Nelson Systems of Medicine.

BOOK REVIEWS

RANDOM RHYMES AND POEMS FOR HOME FOLKS

By Edwin A. Nash, M.D., Peterson, Iowa. Published by Stern Brothers & Company, Chicago, 1924.

It is with peculiar pleasure that we call attention to this interesting book of poems by one of our number. Dr. Nash has for several years practiced medicine in a country village in Iowa, with much credit to himself and to the very material advantage of his community. But Dr. Nash saw many things we did not see, and he had feelings not common to the most of us. In the long and tedious rides common to a country practice, which were a burden to most of us, we can easily imagine that thoughts and feelings ran through his mind that found expression in a poem and when his journey ended at some farm house he saw in his environment something more than a complaining patient, a real poem. We can also imagine that he saw instead of a sordid condition, a real human situation, that was reduced to words that would bring comfort and even happiness to one isolated farm home. This is seen in a number of his poems written in the farm house vernacular. We cannot believe that a man who can write with so much feeling, could be cross with his patients. Then he returns to his books and his fireside with a finer feeling than most of us can appreciate, and here is a poem. Life is a poem to Dr. Nash, as is seen in many of his verses and one cannot read them without feeling that life is more than a sordid struggle for money and advancement.

We have read the little book with a real pleasure and the pleasure comes from the human side of life as Dr. Nash presents it; it comes with singular force as a picture of life as a physician sees it in his daily work.

We would advise every doctor who has trial—and who has not—to purchase this book as a companion, especially if he is detained at a bedside for a considerable period of time. We can recall times when a companion of this kind would have been a great comfort.

We sincerely hope Dr. Nash will not abandon a field of such influence and hope.

THE PRACTICE OF PEDIATRICS

By Charles G. Kerley, M.D., Formerly Professor of Diseases of Children, New York Polyclinic Medical School and Hospital, and Gaylord W. Graves, M.D., Associate in Diseases of Children in the College of Physicians and Surgeons, New York City. Third Edition, Revised and Reset. Octavo of 922 Pages, 150 Illustrations. W. B. Saunders Company, 1924. Cloth, $9.00, Net.

The work before us is so well known that any extended notice is quite unnecessary. The activity in pediatrics is quite remarkable and is evidenced by the number of new books on diseases of children which are appearing from the medical press. The monumental work edited by Dr. Abt is of great importance because of the wide field it covers. But much may be said in favor of books like the work of Dr. Kerley and Dr. Graves which meet more nearly the needs of the general practitioner of medicine who has little time to consult an encyclopedic work like Abt's.

We are assured by the author in the preface to the Third Edition, that the book has been largely rewritten and brought to date, particularly on certain subjects which have recently been intensively studied.

ABT'S PEDIATRICS

By 150 Specialists, Edited by Isaac A. Abt, M.D., Professor of Diseases of Children, Northwestern University Medical School, Chicago. Set Complete in Eight Octavo Volumes, Totaling 8000 Pages, with 1500 Illustrations, and Separate Index Volume Free. Volume Five Containing 865 Pages, with 373 Illustrations. W. B. Saunders Co., 1924. Cloth, $10.00 Per Volume. Sold by Subscription.

We now have reached Volume Five of this great work on diseases of children. The first chapter is one on diseases of the Face and Jaws, by Frederick G. Dyas. Passing from this important chapter we come to Orthopedic Surgery, edited by our own Arthur Steindler, whose work has contributed so much to the credit of the Iowa profession and to the university in which he is professor. The contributors to this section are men who have reached high places in this branch of surgery and will render this volume of peculiar value.

The first contribution is by Dr. D. B. Phemister on the General Pathology of Bone in Children, followed by a chapter on The Surgery of Tendons, by Dr.

Leo Mayer. Tuberculous Diseases of Bones and Joints, Bone and Joint Syphilis, by Dr. Archer O'Riley. Traumatic Dislocations, by Dr. Torr Wagner Harmer, and Congenital Dislocations of the Hip, by Dr. John Ridlon. Wry-Neck and Pastural Deformities of the Spine, by Dr. Albert H. Freiberg, and The Shoulder Joint, by Dr. Arthur Steindler, including also the Elbow Joint, Malformations and Deformities of the Hand and Forearm and Diseases and Disorders of the Knee. These four chapters written by Dr. Steindler will be of special interest to Iowa readers.

There are twenty-nine chapters on different subjects under the head of Orthopedic Surgery. We have noticed twelve subjects of the twenty-nine, not because they are of greater interest, but because they come in order, and are fairly representative of the contents of this volume.

MANUAL OF OBSTETRICS

By John Cooke Horst, M.D., Associate in Gynecology and Obstetrics, Graduate School of Medicine, University of Pennsylvania; Associate in Obstetrics, School of Medicine, University of Pennsylvania; Second Edition, Entirely Re-set; 12 Mo. of 551 Pages, with 229 Illustrations. W. B. Saunders Company, 1924. Cloth, $4.50, Net.

It is stated in the preface that this book is written as a companion of the author's Manual of Gynecology, which was so favorably received by the profession. This book has much in its make-up to commend it. It presents the subject of obstetrics in a concise manner and is arranged in logical sequence. The practice of obstetrics is not a popular branch of medicine, but is of first importance to the general practitioner, not only as a productive feature in practice, but because of its vital importance to the generation of women and children. We cannot do better than to advise the young practitioner to read this book with great care, commencing with the beginning of the subject of obstetrics as it does, it carries the reader from one subject to another in an interesting manner, from the anatomy of the pelvic and generative organs to the management of a normal pregnancy; to all the complications that may arise and with a growing consciousness of a fitness to meet the emergencies and complications that may arise. The reader will feel that he has not only in his mind isolated facts, but a logical fullness of the latest and most approved methods of obstetrical treatment. The illustrations are well arranged to supplement the text.

THE MEDICAL CLINICS OF NORTH AMERICA

November, 1924; Octavo of 324 Pages and 49 Illustrations. W. B. Saunders Company. Cloth, $16.00 Net. Paper, $12.00 Per Clinical Year of Six Numbers.

The number before us is a Philadelphia Clinic and is chiefly an University and Jefferson Clinic. Twenty-six numbers are presented by well known clinical teachers, therefore it would be quite impossible to mention more than a few.

The introduction is a lecture on Pneumonia, Diagnosis and Treatment, by Dr. David Reisman. The treatment offered is a Specific Treatment and a Treatment of Complications. This is a particularly interesting lecture because it presents in some detail the latest ideas in the management of a disease attended by a high mortality rate.

Dr. Henry D. Jump takes up the subject of Essential Hypertension, which is always interesting because much talked about, with too little understanding. Diabetes and Tuberculosis is presented by Dr. John H. Musser, Jr., including Severe Acidosis of Diabetes. Dr. B. B. Vincent Lyon, whose book on the Value of Non-Surgical Drainage of the Biliary Tract has attracted considerable attention, presents a series of cases which illustrates his work.

Congenital Infantile Hypertropic Stenosis of the Pylorus has received much attention and is reviewed by Dr. Emory G. Alexander. Intestinal Toxemia treated with Colonic Irrigations is also a subject of much interest and is presented by Dr. Russell S. Boles. Puerperal Hemiplegia, presented by Dr. James E. Falley, is full of clinical interest. Another subject of unusual interest is a Consideration of Certain Forms of Nephritis, by Dr. Edward Weiss.

The subjects thus briefly stated are a fair outline of this excellent number.

A TEXT-BOOK OF PATHOLOGY

By William G. MacCallum, M.D., Professor of Pathology and Bacteriology, Johns Hopkins University; Third Edition; Thoroughly Revised; Octavo Volume of 1162 Pages, with 575 Original Illustrations. W. B. Saunders Company, 1924. Cloth, $10.00, Net.

This work is presented not as a book of reference, but as a text-book. It represents the course in pathology as given to the second year students of the College of Physicians and Surgeons. It is planned to discuss diseases upon the basis of etiology. There are fifty-seven chapters, beginning with the Disturbances of the Fluids of the Body. Local Disturbances in the Circulation of the Blood, Disturbances of Intercellular Fluids and Lymphs. The Structure and Metabolism of Cells, Disturbances in the Nutrition and Metabolism of Cells, Disturbances of Fat Metabolism, Disturbances of Protein and Carbohydrate Metabolism, Disturbances of Mineral and Pigment Metabolism.

Defenses of the Body Against Injury (including five chapters), Inflammatory Reactions in Injuries, including a considerable part of the book.

There are some ten chapters relating to Tumors of various types.

MacCallum's work as a pathologist and teacher is well known to the scientific branch of the profession and the present edition is to be highly commended. The paper is of first quality, which brings out the illustrations in excellent manner.

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HIDDEN CAUSES OF SUDDEN DEATH*

Arthur D. Woods, M.D., State Center

Sudden death, unrelated to accident or other obvious cause, is a supreme tragedy in human experience. Such a death carries with it a crushing finality. An individual is, then suddenly is not. When death is preceded by illness or surgical procedure invariably there hovers in the background the possibility of dissolution. The relatives and friends under such circumstances can link cause to effect and the tragedy mitigated in proportion to the severity of the cause. But when death occurs as it were, like a thunderbolt from a clear sky, a reason must be found to explain the tragedy to the friends and also to fulfill the legal requirements as regards death certificates. Mortality records are vague and misleading. This is particularly true when we come to consider sudden death as heretofor defined.

The causes of sudden death may be divided into four groups viz.:

1. Coronary thrombosis.
2. Pulmonary embolism.
3. Internal concealed hemorrhage.
4. Status lymphaticus.

With the idea in mind that I might find some helpful data in the mortality statistics of the state of Iowa I recently reviewed these statistics covering a period over the past ten years. I was disappointed in the study of these statistics because no mention is made as to whether death came suddenly and the causes given are rather vaguely enumerated. For instance, the report shows that for the years 1914 to 1923 inclusive there have occurred in the state of Iowa 44,640 deaths from various causes which undoubtedly include cases belonging to the four groups before mentioned. As enumerated the report of the State Board of Health such cases are arranged as follows:

Angina pectoris	1,991
Embolism and thrombosis	1,072
Hemorrhage and other diseases of the circulatory system	1,062
Organic diseases of the heart	18,930
Cerebral hemorrhage	16,320
Diseases of arteries, atheroma and aneurysm	5,295

Obviously such statistics are of little help in the discussion of causes of sudden death. Death from coronary thrombosis undoubtedly are frequently reported as angina pectoris or organic heart disease in many instances. This is not strange inasmuch as angina pectoris is one of the cardinal symptoms of coronary thrombosis and may precede the fatal issue by many years. On the other hand organic heart disease covers so much pathology that coronary thrombosis could be easily included in such a group.

Under the caption "Embolism and Thombosis" may be included cases of both coronary thrombosis and pulmonary embolism. That internal concealed hemorrhage has a place also may be surmised when one notes that the statistics include a group under the head of "hemorrhage and other diseases of the circulatory system". And who can deny that of the 16,320 deaths reported as cerebral hemorrhage there were many deaths from coronary thrombosis and internal concealed hemorrhage other than cerebral. To further elucidate this point we have only to recall instances in our own practice where we have been called to view the remains of one who has died in bed or fallen on the street, or perhaps dropped while at work. We have listened to the meager statements of relatives or friends. Nobody really knows anything about the case. There stands out before us but one glaring fact, the individual is dead. That day or the next perhaps, the funeral director presents the death certificate for our most careful consideration. We look it over, adjust our report to the most plausible theory, just as we used to do when we were tardy or delinquent in our school days of the long ago. Cerebral hemorrhage or organic heart disease offer us the best shields for our ignorance, so we swell these statistics to 35,250 out 44,670 in ten years. I am not finding fault with statistics. I cite these facts merely to illustrate how little real knowl-

*Presented before the Seventy-Third Annual Session, Iowa State Medical Society, Des Moines, Iowa, May 7, 8, 9, 1924.

edge we have of the causes of sudden death when based on statistical reports.

The entire subject is shrouded in mystery and nursed by confusion. Among the laity and some few in our profession a sharp distress in the lower chest or upper abdomen if in the midline, spells indigestion. Prolong this acute indigestion to the lethal stage and heart failure, another utterly absurd, meaningless term, becomes the ascribed cause of death. Really quaint and fantastic are these terms "acute indigestion and heart failure" when subjected to the searching light of modern pathology. In this connection may I relate an instance that occurred only last winter. A man fell on the village street one cold afternoon. He was carried to the office where I saw him just as he expired. That evening I was called to the phone to answer an inquiry relative to the cause of the tragedy. The inquirer is a real character of the town, an elderly gentleman who has been a patient sufferer from congenital cataracts. He and the deceased were good friends. The blind man wanted to know what had really happened and in the usual way I stalled about to explain the sudden death. (I had not yet signed the death certificate). Not being wholly satisfied with my explanation my blind friend finally took the words from my mouth and said, "Now Doctor, I really believe his heart went back on him", and I replied by saying, "I believe so too, Billy".

I know of no better way to illustrate the absurdity of the terms "acute indigestion and heart failure" in relation to sudden death than to assume an hypothetical case.

The essential features of such case would run something as follows: X. Y. Z., male, sixty-two years of age. Prominent in the business and the social activities of the city. Has always been well except for slight shortness of breath and occasional precordial pain during the past three or four years. Two years ago he went to his physician because of nocturnal frequency of urination. The patient was asked to measure separately the day and night urine and it was found that he was passing more urine at night than during the day. The specific gravity of the urine was rather low, there was an occasional cast but no albumin. The blood-pressure was 190-100. He was advised by his physician to slow up which he did for a short time only. As the nocturnal frequency was to him the only obvious departure from his former health he could not understand why he should permanently restrict his activities. Thursday evening he attended a dinner given in honor of the newly arrived British Consul. His friends remarked that X was unusually jovial and ate heartily. During the after dinner festivities while responding to a toast he was seized with an excruciating pain in the epigastrium followed quickly by unconsciousness and collapse. Medical aid was summoned but to no avail as the patient died within fifteen minutes without regaining consciousness. No autopsy.

The news reports in the press the following day can well be imagined. The deceased must have suffered an attack of acute indigestion after partaking so heartily of the sumptuous banquet, so the report ran. The acute indigestion induced heart failure with its train of unconsciousness, collapse and death. Plain enough, certainly. There remains only one query, to which group would this case be assigned in the mortality records? Would it be angina pectoris, or organic heart disease, or cerebral hemorrhage? I believe the personal equation of the physician making out the death certificate would have much to do with this point. What would have been the probable autopsy report had our case reached the post-mortem room? Presumably something as follows:

General arteriosclerosis. Lungs negative. Heart slightly enlarged, both coronary arteries showed sclerosis and the left coronary revealed a thrombus at the point of narrowing just beyond the orifice. Some myomalacia cordis in the wall of the left ventricle. A few plaques in the aorta. Abdominal contents practically negative. Small contracted kidneys, enlarged prostate. Immediate cause of death, coronary thrombosis.

The social and medical factors of this fictitious case are presented for two reasons, first, to reproduce in a way the sort of a report so often seen in the lay press and second, to emphasize the rapidly growing appreciation on the part of medical writers of the importance of coronary thrombosis as a cause of sudden death. Acute indigestion has been a favorite explanation of this type of case on the part of the lay press for many years. Only recently we read the report of one high in the official circles of the Federal Government suffering an attack of acute indigestion from which he slowly recovered. Possibly the condition was acute indigestion but from the description given one might easily doubt when viewed in the light of our present conception of the pathology of the coronary arteries.

In a recent issue of the Journal of the A. M. A. Hardt of Chicago reported a case of coronary thrombosis which markedly simulated perforated peptic ulcer. The history and autopsy findings were very exhaustive, making the report a valuable contribution to the growing literature of coronary thrombosis.

During the past century and more, there has been a lurking suspicion that interference with the coronary circulation was in some way connected with sudden death. It is an historic fact that John Hunter suffered the pangs of angina pectoris and he used to say "his life was in the hands of any rascal who chose to worry him". Ottley tells the story of Hunter's controversy with his colleagues over the question of the entrance of two Scotch medical students to the hospital for certain work. One of Hunter's colleagues thought it "necessary instantly and flatly to contradict". Hunter immediately ceased speaking, retired from the table, and struggling to suppress the tumult of his passion hurried into the adjoining room, where, with a deep groan he fell lifeless". Thorvaldsen met tragic death in the theater at Copenhagen March 24, 1844. Autopsy revealed a plugged coronary. So much for the historic background.

Herrick has recently called our attention to the importance of coronary thrombosis as a cause of sudden death. Herrick makes what he calls a tentative grouping based on clinical symptoms as follows:

1. Cases of instantaneous death in which there is no struggle of any kind.
2. Cases of death within a few minutes or a few hours after the obstruction.
3. Cases in which death is delayed hours, days or months, or recovery occurs.
4. Cases with very mild symptoms, perhaps not recognized due to the obstruction in the smaller branches of the arteries.

No discussion of coronary artery disease is complete without a word from Osler. In his eighth edition Osler says:

"Complete obliteration of one coronary artery, if produced suddenly, is usually fatal. When induced slowly, either by arteriosclerosis at the orifice of the artery at the root of the aorta or by an obliterating endoarteritis in the course of the vessel, the circulation may be carried on through the other vessel. Sudden death is not uncommon owing to thrombosis of a vessel which has become narrowed by sclerosis. In medico-legal cases it is a point of primary importance to remember that this is one of the common causes of sudden death. This condition should be carefully sought for, inasmuch as it may be the sole lesion except a general, sometimes slight, arteriosclerosis."

I have stressed the discussion of coronary thrombosis because I believe more cases from this cause go unrecognized than from any of the other groups. At best the diagnosis without autopsy is a conjecture but to make it gives expression to at least a ray of intelligence while the diagnosis of heart failure does not.

Pulmonary embolism as a cause of sudden death is so well known that it needs but little discussion. In women tragic sudden death may occur in the course of chlorosis or the puerperal state from plugging of one of the branches of the pulmonary artery. In both sexes infectious conditions, the cachexias, local diseases of the veins, cardiac disease and convalescence from abdominal operations may terminate suddenly as the result of pulmonary embolism.

Internal concealed hemorrhage is conspicuous as a cause of sudden death in one type of case, viz., the robust, apparently healthy man of forty or under. These cases are almost invariably syphilitic with one or more small aneurisms close to or involving the sinuses of valsalva. These individuals may suffer terribly from angina pectoris. Aortic valvular disease may complicate and mask the aneurismal condition. Rupture into the pericardium is the fatal issue. Rarely rupture may take place into the pulmonary artery. "Medico-legal records of large cities show the very great frequency of this accident."

Should one meet with a tragic, sudden death in a child or young adult following a trifling cause, one should suspect the condition known as status lymphaticus. It is now believed that the remarkable cases of sudden death during bathing, or plunging into cold water though immediately rescued, or where very small amounts of ether or chloroform have been administered, are caused by this condition. The subject is not very well understood. The condition is associated with hyperplasia of the lymphatic tissues and of the thymus. The blood-vessels and the heart show a state of hypoplasia. So often is the thymus enlarged that this form of sudden death is called "thymic death".

I believe the time is coming when all cases of sudden death will be subject to autopsy by due process of law. There is no section of Iowa which has not access to a pathologist capable of ferreting out these cases of sudden death. All the larger centers now have one or more such men. Medical men would welcome such an innovation and the laity will accept it when the subject is better understood. Until these cases are more carefully scrutinized the lay press will continue to report the acute indigestions and we medical men will blanket our ignorance under the term "heart failure".

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Discussion

Dr. Frank Billings, Chicago—The paper is an excellent one and expresses the present day opinion of sudden deaths. However, I want to say one thing about the statistics presented: Probably in most cases the diagnosis was made without post-mortem, and probably many of them were erroneous. The modern development of cardiology gives us perhaps better knowledge than we have ever had in the past as to just what disease of the heart means. We no longer think so much of the valvular defects. They are important, they may lead to degeneration or morbid conditions of the myocardium, but beyond that they are of very little importance. Mitral stenosis is very important because it leads to early changes, some of the other conditions do not. Doubtless the older men here have seen some valvular defects existing for thirty, forty or even fifty years without fatal issue. Angina pectoris is a symptom. We are still in discussion as to just what causes it. Coronary disease, yes, many times, but not always. Muscular disease practically always. Disturbances of the extrinsic nervous apparatus, yes, but we cannot say in any given case. But dilatation and rigidity of the wall of the aortic arch is the most frequent cause. The other conditions named may be present also. Rich men, men of large business affairs, not always men of vicious habits, may have angina pectoris. I happen to have been the medical attendant of some of the prominent business men of Chicago. One died suddenly seven years after the first symptom of angina pectoris. Another had angina pectoris for nine years before he died. A well known piano manufacturer had angina pectoris for seventeen years, had thrombosis of the left coronary artery, lived for six months after its onset, and died with edema of the legs and failure of the heart. There are other men I could name, many of whom had angina pectoris for long or short periods. Sudden thrombosis may occur from an accident. A prominent man who had angina, hearing a noise down-stairs, slipped on the stairs and sat down suddenly. He died within twenty-four hours with thrombosis of the left coronary artery. A banker, corpulent, had never had a symptom of angina. While walking, for a moment experienced pain in the heart, which stopped, but there was shortness of breath afterwards. He died within a week: Complete thrombosis of left coronary artery with complete necrosis of part of the wall of the left ventricle. A banker after attending the theater eats supper, goes home, slight pain, wakes up short of breath. He is dead in a week. Thrombosis of the left coronary artery, anemic, necrosis of the wall of the left ventricle, with death. With our modern knowledge of cardiology we know that while thrombosis of the coronary artery may cause sudden death, sudden death occurs without thrombosis in a larger number of cases than with it. Sudden death is probably due to some toxic or other cause associated usually with mild myocardial changes from ventricular fibrillation, and then in all probability thrombosis occurs and death takes place suddenly. But there is primary ventricular fibrillation. Now, the important point about all this is, what are we going to do to prevent these cases? You cannot control a busy man altogether, you cannot make him exercise enough, you cannot make him do anything much, even when he has arteriosclerotic changes in his body. You cannot control syphilis very well as long as another patient with the disease exists to communicate it to others. Another cause which frequently we do not recognize is infection going on in the body all the time and finally involving the heart. I am not always complimented on the fact that I have made focal infection prominent as a cause of disease, because, while it is a good principle, it is abused. But it is important in the consideration of any infection about the body, particularly of the heart muscle. Particularly in elderly people it is important in connection with the gall-bladder and in the relationship of the gall-bladder to the heart. I would not be alive today if I had not had my gall-bladder attended to twenty years ago. For the preceding five or six years I was ill and my heart muscle was so bad I could not stoop over to lace my shoes. The removal of that infection relieved me of the heart condition and called my attention to this subject most emphatically. Twenty years later I can walk anywhere, go to mountain heights, do whatever I please. I have, over and over again, observed the relationship of angina pectoris and infection. I have seen the symptoms of angina all disappear with the removal of an infected organ. I am speaking of this especially because there is a distinct relationship of the infection of the gall-bladder and the heart muscle. We must be alert in looking for the causes of these things and remove them. As you know, the House of Delegates, at the meeting in San Francisco, adopted the resolution that in future one of the purposes of the American Medical Association, through its component societies, should be the promotion of periodic health examinations. It is only by this means that we will be able to know that your patients have not only heart trouble, but other conditions. We can see the need of such examinations when we remember that over 7,000,000 of our young men twenty-one to thirty years of age were called by the draft boards and examined, that many were rejected, and that of those accepted many more were turned out of the camps by the camp boards, and that approximately 37 per cent of these men were found to be mentally or physically unfit for military service. And many of the conditions were due to heart diseases. It is fine to have a paper such as this today to tell us of the causes of sudden death, but when a man is dead he is dead, you cannot do anything for him. You can get some interesting information from post-mortem, but that does not help him or his friends.

Dr. Charles H. Magee, Burlington—We have here a very unique paper on a subject quite out of the ordinary. The more I have read the paper the more I have found in it, I have been pleased with the

thought expressed, and must compliment the reader on the paper and its delivery. In regard to sending in death certificates, some time ago it was brought to my attention how misty we are about it. One day the undertaker at my place brought back a certificate, saying, "This will not do, the State Board of Health would not accept a term like this, if you please". Upon looking at the term referred to I found that it was nebulous. Now, he is a bald-headed undertaker, which I could stand, but he is bow-legged and that is going a little too far. So at first I was a little bit out of sorts, then began to see the light and reconstructed some of my terms. The essayist spoke of the statistics he consulted, stating that they are nebulous, they are foggy. I know they are nebulous because I have helped to make them, I can account for my part of it. Old Thomas Huxley of England said that life has but two legs to stand on—the lungs and the heart. So before I got through I could come back to one of these legs and they couldn't shake me off of that. Referring to "heart failure", that is a very indefinite affair. Take, for instance, the condition known as angina pectoris. Many years ago I had a touch of angina following blood poisoning, since which time I have been considerably interested in the subject. For years I thought it was something like neuralgia, with no pathology particularly, but Dr. Murphy diagnosed his own case and said he had arteritis, and that, with angina pectoris, killed him. My attention has been called to the thing designated as coronary thrombosis, and that has been at least a decent peg on which to hang my terms. I do not know that I would know how to start out to demonstrate thrombosis of the coronary arteries. I suppose I know where the coronary artery is located, perhaps as well as the average man in the state of Iowa. Show me the case and I will show you how hard it is to find those thromboses. I was called about twenty-eight miles out of town to operate on a man for obstruction of the bowels. I knew the patient well. He was eighty-two years of age, a large man who had been a big eater all his life. I said, I will not operate because the surgeon who puts a knife in him will lose him. But the patient said, "You get ready and operate on me". "Why?" I inquired. "Because I am suffering all the agonies of the damned." "But", I said, "I am afraid you will die". "I don't care, you get ready and operate." I put him on the table and as soon as I got into the peritoneal cavity I saw that his blood was dark, and the anesthetist said, "He is dying". We put him to bed and he soon died. At autopsy I found that the whole of the small intestine, which was about thirty-two or perhaps thirty-six feet long, with the exception of about eight inches of the jejunum and about eighteen inches of the terminal ileum, was perfectly black. The inference was a thrombosis of the inferior mesenteric artery. Down to the aorta I went and began to split the artery, but could not find the thrombus. I have got to have a pathologist demonstrate a thrombus to me before I know how to find it. I thank the essayist very kindly for giving me four things to remember in making out death certificates: (1) coronary thrombosis; (2) pulmonary embolism; (3) internal concealed hemorrhage, and (4) status lymphaticus. Now, I do not know just exactly the meaning of status lymphaticus, but it is euphonious and I shall use the term.

Dr. Merrill M. Myers, Des Moines—The surgeon while operating must have in mind continually the state of the heart of his patient. The heart may lose its normal functional ability during or after an operation as the result of the development of certain abnormal conditions within the heart itself. One of the most serious disorders of the heart occurring under these circumstances is the onset of ventricular fibrillation. It is more liable to occur as the result of the use of chloroform than of ether. Fibrillation of the ventricles is that condition in which the ventricles lose their normal regular rhythm and rate, taking on a very rapid irregular action, at times beating 200 per minute or more. Such a state of heart action is not consistent with life, and death practically always follows once ventricular fibrillation occurs unless immediate and radical treatment is employed. There is a means of life saving therapy for those who have had cardiac collapse during or after an operation which has recently been devised, namely: The use of epinephrin intracardially. This procedure may be useful in serious collapse from other causes also. Some of us recently made an investigation of this new procedure for one of our local hospitals, with the result that we concluded it was a useful therapeutic method. We therefore recommended to the hospital that every operating room should be so equipped that the intracardiac injection of epinephrin could be made on very short notice. It was further suggested that every physician should be prepared to use this treatment in his private work. The Journal of the A. M. A. has recently contained several articles upon this subject, and this same Journal treated the matter editorially on two occasions in 1923. There are a few possible dangers one should bear in mind when making the injection, chief of which is the penetration of the internal mammary artery. There are two points of election for the injection: (1) the fourth or fifth left interspace one finger's breadth within the left border of the heart, the needle pointing upward and inward, thus reaching the left ventricle; (2) the fourth left space at the upper edge of the fifth rib immediately at the sternal border. The needle should be passed sagittally and inward. The ordinary lumbar puncture needle may be used and not more than 1 c.c. of epinephrin should be used at a time. There are a number of reported instances in which by the use of this drug, life has been restored after apparent death. This new method is a means of therapy that every physician and surgeon should be prepared to employ, and every operating-room should be equipped with sterile apparatus and ampules of the drug so that it may be ready for use instantly.

Dr. Granville N. Ryan, Des Moines—We have had two cases lately that undoubtedly died from thrombus of the coronary artery. One a prominent business man of this city, who died suddenly while dancing. This patient was forty-six years of age. It was apparent that this was an untimely death, and his life might have been prolonged by proper treatment and exercise. I am indebted to Doctor Clarence I. Thomas of Guthrie Center, who called me in consultation to see the second patient, a man seventy years of age. I found him to be very much below par, with a cardiorenal syndrome with broken compensation. Blood-pressure index at 80 systolic. Even with the greatest care he died within twenty-four hours, death being due to thrombus of the coronary artery.

Dr. Woods—I know of nothing more disconcerting than to have a patient die in the doctor's office, and particularly following some administration. Last summer a man thirty-nine years old came to me complaining of pain in his chest, in fact it was the most severe case of pain that I have ever witnessed, angina pectoris. On taking his history I found that he had syphilis at nineteen years of age, was treated for two years with mercury and potassium iodid and pronounced cured. He afterwards married. His wife had no miscarriages, on the contrary gave birth to five children who were living and well at that time. His Wassermann was 4-plus. I gave him arsphenamin. He reacted as usual, with not very severe symptoms. A few days afterwards I administered a second small dose, there was very little reaction, and he thought he was getting better. He came up for the third dose and stated that a day or two before he had had so severe an attack of angina that his relatives thought he would succumb. However, in view of the fact that he had done fairly well under the administration of the previous doses of the drug I felt it would be safe to give him the third. I gave him the third dose of arsphenamin while he was in the recumbent position and put him to bed immediately. About ten minutes later he complained of shortness of breath and begged to sit up. He was raised to the sitting posture, and in ten minutes he was dead. Now, that is a shock to the attending physician. We had no opportunity to hold post-mortem, it would not have been permitted, but I felt that this was a case of internal concealed hemorrhage. I am sure that if we could have looked at that heart we would have found an aneurism of the sinus of valsalva with rupture into the pericardium or into the pulmonary artery.

PHYSICIAN PUBLISHES POEMS

Doctor E. A. Nash, Peterson, Iowa, has published a book of poems that is causing much favorable comment.

Dr. Nash is the only Iowa doctor to ever publish poems.

THE DIAGNOSIS AND TREATMENT OF NEUROSYPHILIS*

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The purpose of this paper is to call your attention to certain thoughts concerning neurosyphilis and its treatment.

Because of the intricate structural and functional characteristics of the invaded tissue, syphilitic disease of the central nervous system presents a varied, and often complex syndrome. It is so variable in its clinical forms that it is frequently overlooked until the condition becomes disastrous.

There is no other field of medicine where a single etiological factor may give rise to so many dissimilar clinical pictures. The nature of the disease, with its insidious development, during which time the patient feels absolutely well, its onset during the prime of life and the results that follow make an early diagnosis and efficient treatment of the utmost importance.

Studies have demonstrated that the nervous system is probably implicated at a very early period, and in many instances during the general dissemination of the infection. It is important to make a laboratory study of the blood, and especially of the spinal fluid in all obscure functional or organic diseases of the nervous system, whether syphilis be suspected as an etiological factor. In pathological spinal fluid, increase in the globulin is the most constant of the abnormal findings, pleocytosis next and the Wassermann less frequently. Within certain limitations any single one of the above mentioned deviations from the normal must be regarded as evidence of early central nervous system involvement. There is a growing opinion that no case of generalized syphilis should be dismissed from observation without first a complete neurological and spinal fluid examination.

The brain, spinal cord, or entire cerebrospinal system may be involved. The spirochete not only exhibits a special affinity for nervous tissue but may invade especially the meninges, the interstitial tissue, or the parenchyma. The clinical trends in neurosyphilis depends on the pathological processes, and the clinical manifestations are extremely variable, depending upon the localization of the anatomical part interfered with.

In the clinical diagnosis of syphilis of the nervous system, one of the important points to remember, is, that syphilis produces lesions in the nervous system that are just a little different

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from those caused by other etiological factors. Some of the more common nervous manifestations are headaches, dizziness, subjective or objective sensory disorders and the various neurasthenic states. Ill-defined mental peculiarities, the more marked psychosis, tremors, speech disturbances, somnolent attacks, convulsions, or a transitory extra-ocular palsy are often initial features of a previously unsuspected syphilitic infection.

The syphilitic eye is, barring epidemic encephalitis, practically pathognomonic of the disease, and has far more importance in establishing the diagnosis of tabes or syphilis in general, than any other single symptom. Here irregularity in the size of the pupil, irregularity in the pupillary margin, the impairment of the consensual light reflex, the slowing in reaction to light, alteration in accommodation, the full developed Argyll-Robertson pupil are all to be considered. These one or all, constitute valuable criteria for the clinical appraisement of syphilis of the central nervous system.

Headache is a frequent and early sign, often preceding other symptoms by weeks, months or years. It has the frequent nocturnal exacerbations and is described variously as boring, or stabbing in character. Percussion at the base of the skull may show tenderness.

Any convulsive seizure occurring for the first time in a middle aged person, should arouse our suspicions. In some cases an attack of this kind, is absolutely the first sign to appear. These convulsive attacks may be either epileptiform or apoplectiform in nature, and must be differentiated from these conditions. Real apoplectic seizures leaves a permanent or temporary paralysis, while the residuals of a syphilitic seizure clear up quickly.

A favorite location in the syphilitic form of menengitis is the interpeduncular spaces with its third nerve issuing from it: hence the frequency of third nerve lesions in neurosyphilis. Another favorite spot is the region of the optic chiasm, giving rise to the various visual disorders including optic neuritis and hemianopsia. The fourth, sixth and seventh cranial nerves may be likewise involved.

Sudden loss of hearing generally with tinnitus, no pain, no evidence of a middle ear disease, in a young adult otherwise healthy, should be regarded as almost certainly indicative of a syphilitic disease of the eighth nerve. This tinnitus is usually marked and most distressing, even keeping the patient awake at night.

A persistent sciatica may be readily overlooked as being due to syphilis.

Memory defects, poor judgment, a gradual change in disposition and conduct in a previously well balanced individual, paresis is probably the cause.

The diagnosis of general paresis does not rest solely upon the mental picture. Paresis is a gross syphilitic disease of the brain and its diagnosis must rest largely upon an appreciation of the physical signs which these changes bring about, particularly in the fields of motor disturbances and serology. The physical signs may be recognized before any appreciable mental change. There are many sociological problems involved in the early recognition and treatment of this disorder.

It is the consensus of opinion of physicians who have had long experience that paresis is not diagnosed until the time is past when treatment might have been of some avail. Too often the paretic in the first stages of the disease has been diagnosed as a neurasthenic and treated accordingly, and the golden opportunity to cure or at least allay the progress of this disorder has been lost.

In the industrial world, paretics in the early stages of their disorder are responsible for many accidents and catastrophies. Incipient paretics are running railroad trains, driving street cars, operating elevators, driving automobiles and engaged in other pursuits of a similar nature, which places the lives of the public in constant jeopardy.

Grandiose delusions of great wealth and strength are in no wise a necessary part of the symptom picture, and while the classical type of paresis does present such delusions, this type is becoming relatively less frequent as the other forms are being recognized. The most common physical signs are the pupillary changes, speech disturbances, incoordination and disturbance of the knee jerks. Hypalgesia during inattention. If the paretic attention be distracted, a pin may be thrust through a fold of the skin without his being aware of it. This is a forerunner of the analgesia of paretics who develop such painful affections as pleurisy or peritonitis and state happily that they feel no pain. As the vast majority of cases of general paresis occur between the ages of thirty and fifty, any mental disorder occurring during this period may be paresis.

. Tabes like general paralysis is such an insidious disease that it is important from a diagnostic point of view.

In the beginning the most constant sign is severe lancinating pains which occur in the large majority of cases and usually as an initial sign. They are an indication of the leptomeningitis or radiculitis which is one of the fundamental re-

sults of the syphilitic virus or products induced by it. These pains come on in attacks, last a few minutes, several hours, or a few days and then disappear to again recur. The pains are predominantly sciatic or crural in distribution and are extremely important, for when a patient complains of rheumatism and states that it is intermittent in character the condition is probably tabes. The pains may be widely distributed, and may start in any sensory root, cranial or spinal. Thus trigeminal neuralgia may be an initial sign.

Sudden violent gastric pains, radiating in all directions, and in the severe attacks accompanied by nausea, vomiting and great prostration may simulate a crisis which is frequently not recognized and has often led to an unnecessary laparotomy. The error being made because the surgeon did not examine the patient carefully before the operation. Lack of sphincter control and vesical disturbances may later prove to be tabes.

Too frequently one sees patients under treatment for various diseases that are primarily nervous manifestations of syphilis; when a careful survey of the nervous system would disclose the true nature of their illness.

It is a good rule to suspect syphilis in all nervous and mental diseases until it has been proven absent.

TREATMENT

In considering the treatment of syphilis of the central nervous system certain factors must be taken into consideration. The inaccessibility of the nervous structures involved, whereby it is more or less separated from the viscera. The localization of the spirochetes, which in itself is difficult to attack therapeutically. The type of the pathological process, whether it is an interstitial or parenchymatous.

Neurosyphilis is an incident which is liable to occur in any case of treponemal infection. The danger of this incident lies in its liability to become inaccessible to treatment, or to produce irreparable loss of function before treatment is instituted. The time to treat nerve syphilis is when the symptoms are not clear-cut and well defined.

The systemic treatment with our present day antisyphilitic remedies, especially arsphenamine, mercury and the iodides, the problem of therapy in general is far from being ideally satisfactory. This need for more effective therapy has stimulated syphilographers and neurologists to produce new chemicals and elaborate methods expressly adapted to combat the disease.

There are a number of special technique for the application of medicaments directly into the cerebrospinal fluid with the intention of getting the drug in contact with the nervous tissue.

The first method to be introduced, and the one that is most largely used is the Swift-Ellis method of lumbar subarachnoid injection of arsphenamized serum. More recently Ayre has introduced the cistern route whereby the serum can be placed directly in contact with the base of the brain. Another method commonly used is the spinal drainage; that is the withdrawal of a large percentage of spinal fluid in order to increase the penetration of intravenous arsphenamine into the nerve structures advocated by Dercum and others. All these methods have the advantage of bringing the drug into close relation with the central nervous system.

There is a group of cases which show no results from mild or intensive systemic treatment that react quite well to one of the special methods.

In the majority of cases of interstitial neurosyphilis the intensive combined mercury-arsphenamine treatment suffices. Meningo-vascular syphilis has always been recognized as rather favorable to treatment. However, in those diffuse nervous lesions that have resisted the usual methods of treatment some form of intraspinal medication becomes necessary.

There appears to be a wide diversity of opinion relative to the merits of intraspinal therapy. However, the majority of the contributors to the literature from various sources give encouraging results from its use.

In parenchymatous neurosyphilis it is useless to speak of the cure of tabes or paresis in the sense of restoration of the degenerated cells and fibres. The most that can be expected is complete or partial arrest of the degenerative process.

A too pessimistic therapeutic attitude in regard to the treatment of parenchymatous syphilis may work greatly to the disadvantage of a patient, as in many instances very gratifying results have been obtained by intraspinal methods after the usual systemic treatment has failed to give results. Many times meningo-vascular syphilis presents a picture very similar to paresis and makes it rather difficult to differentiate and as stated the former reacts well to treatment.

In my experience I have found the combined methods of treatment sufficiently encouraging to continue their use. In several instances after the systemic treatment has failed to give results, intraspinal therapy has given satisfactory and apparently permanent results.

The number, frequency, and duration of treatments should be determined largely by the clinical, and to a less extent, the laboratory conditions in each individual patient; and although it

may be desirable to secure a perfectly normal blood and spinal fluid reaction, treatment should not be indefinitely continued with this object in view, as favorable clinical results have been obtained, when it has been impossible to get improvement in the blood and spinal fluid.

No standardization in treatment is possible as many cases require long and intensive treatment, whereas others react well to a relatively small amount. There are a group of cases that cannot be modified by any form of treatment. The hope for the future rests in developing the drugs with greater power of permeation into the nervous tissue. Some favorable reports have been made from inducing febrile reactions by inoculations with malaria.

I think all the present methods advocated in the treatment of neurosyphilis should be considered useful in selected cases, and if results are not obtained with vigorous systemic treatment some form of intraspinal therapy should be instituted.

Discussion

Dr. Clarence E. Van Epps, Iowa City—We have had some 400 cases of neurosyhpilis at the University Clinic, and they still give us a good deal of trouble in diagnosis. Yesterday we had an autopsy on a man of fifty who had come in with a typical picture of paresis, except for three things: First, two years before he had a tumor removed from his neck, and on admission he had two small tumors in his neck. Those were removed and one was found to be malignant. Second, for the last three months the patient has had an occasional headache and occasional vomiting. Third, there was a yellow tinge to the spinal fluid. His speech, his pupils, his writing, his facies, his mental state apparently, indicated paresis, and his spinal fluid and serum were 4-plus for paresis. At the autopsy yesterday we found a large tumor of the left frontal lobe. Whether that man had syphilis and carcinoma (apparently carcinoma) of the brain, or only a case of brain tumor, we are as yet unable to say. As to our observations in general, I might say the following: One-third of the cases in our neurological clinic are probably syphilitic, by far the most common disease of the nervous system. The disease is polymorphous, it can do almost anything. We have three classes: Tabes, paresis, and cerebrospinal syphilis. In some instances we have had to study the case for a week or even a month before we could make the diagnosis. Some of these cases come in within a few weeks after infection, but the time may be a month or forty years. The time of infection means very little. In most cases we will have a history of exposure or a genital sore or gonorrhea, but a considerable proportion of the patients deny ever having had the secondaries. We have a type of case we call syphilophobia. In such a case, when the patient who has had syphilis comes in to consult the doctor he has various fears and doubts, with no laboratory tests to justify them. I think the most important physical signs are the changes in the eye. Of course the classical sign is the Argyll-Robertson pupil, which can, however, occur in other conditions. But the pupillary changes are the most common findings we have in neurosyphilis. We have well marked cases that have not been treated, but which have a negative cerebrospinal fluid and negative blood. But this does not rule out syphilis. There is no necessary parallelism between the laboratory findings and physical signs, and the patient's complaints. The patient may have been picked up by accident with only a 4-plus Wassermann. There is no parallelism between the different kinds of laboratory tests. He may have 4-plus Wassermann in the serum and none in the spinal fluid. So there is no preponderance in the different forms of laboratory findings. There is no single sign which may be considered pathognomonic for syphilis. The Mayo Clinic has reported some brain tumors with 4-plus Wassermann. We have had a few cases (none coming to autopsy except the last one) which have had 4-plus Wassermann with possible tumors. A positive Wassermann is not proof of syphilis, and in the same way negative tests in no sense exclude syphilis. In a general way the diagnosis of syphilis is possible. But a few cases give us much trouble. In regard to treatment, I sometimes wonder if prophylactic treatment is not more important than treatment of the developed case. I have nothing to do with treatment of secondary syphilis, but feel that if I were treating syphilis in this stage I would not discharge the case without a lumbar puncture. A short time ago we had a boy who had had primary and secondary syphilis, and in a few weeks he developed severe meningeal symptoms. He came to us three or four months after the infection had taken place. He was completely deaf and had marked meningeal symptoms. If the patient had been punctured earlier it would have been better. We have many chronic tabetics coming in. We have not done a great deal for those patients. I think we can promise arrest of symptoms and possibly some improvement in old tabetics. In the case of paretics we have had very little improvement. In this connection a great deal has been said about the use of a drug not familiar to me, the Tryparsamide treatment. In the meningeal type one gets pretty good results from treatment. We are less hopeful of its efficacy in cases of parenchymatous syphilis, and in paretic cases our results have been very unsatisfactory. I have never been an advocate of the intraspinal method. We tried it when it first came out, but it did not appear logical to me. It does not seem to me that cases treated by the intraspinous method have done any better than the cases treated without it. However, I know many men who report very good results after intravenous treatment has failed. But it is not necessary, and I think it is not used as much as it was two years ago.

Dr. J. F. Auner, Des Moines—I want to stress the point of the very early treatment of syphilis in order to avoid just these unfortunate results. I believe that the time to treat neurosyphilis is before it develops. Fordyce of the Vanderbilt Clinic used to tell us that the future results of syphilitic treatment was absolutely in the hands of the first doctor the patient consulted. If this physician is prepared properly to diagnose and treat the condition, there is some hope for the syphilitic patient. Therefore I want to stress the point that the time to treat syphilis is in the primary or chancre stage. It is then that syphilis is curable. Intensive and adequate treatment at that time will really effect a cure. I believe that any treatment, to be adequate, must consist of at least two series of eight doses each of arsphenamin or some similar arsenical preparation, combined with at least two series of fifteen doses each of intramuscular mercury. Personally, I prefer the administration of mercury by the intramuscular route. I have no fault to find with those who are able to administer mercury subcutaneously or cutaneously by the rubbing method; but, so far as I am concerned, I never know how much mercury my patient is receiving under this regime. But whatever the method of administration, the treatment of syphilis, to be effective, must be instituted intensively in the chancre stage. You men in general practice will see syphilis in the stage when it can be successfully handled. But a great many men are either too busy or too careless properly to administer mercury, and I believe that our sheet anchor is mercury with the iodids. A very good and practical method of administering the intramuscular mercury is that of drawing a line from the upper middle margin of the intragluteal sulcus to the anterior superior spine of the ilium, and a point bisecting this line is the point where the needle should enter. The needle directed about two inches downward and a little inward will, I think, place the mercury at the point where its solubility will be greatest and thereby lessen danger of the unpleasant effects from the use of mercurial preparations.

Dr. Granville N. Ryan, Des Moines—One point in the diagnosing of those border-line cases where lues is suspected, especially where the infection has occurred too early to secure a positive Wassermann, is to give a small dose of arsphenamin—then, within a week or ten days, the blood will usually show a positive reaction. The early diagnosis is best accomplished by dark field examination of scrapings taken from the initial lesion, which will show the spirochete, and if positive, gives one the earliest possible diagnosis, the patient benefiting by early treatment, which we realize is so important in lues. In cases of longer standing which show a negative blood Wassermann, the arsphenamin provogative test is useful.

Dr. F. L. Nelson, Ottumwa—I would like to say a few words from the clinical standpoint. One feature especially which I desire to emphasize is this: A great many people, especially, we will say, men forty to fifty years of age, present a high blood-pressure and indefinite symptoms, prostration, weakness, severe headaches and vertigo forming this symptom complex. Almost invariably in these cases there will be some point in the head where the patient will have continuous boring pain, and four-fifths of those people will be absolutely negative as far as the Wassermann goes, and also negative as to the history of syphilis. Cases of this type have been neglected. Just recently two cases which have been in the General Hospital have been discharged much improved. Before entering the hospital both of these patients had been under treatment for high blood-pressure, with no results. I first saw them about two months ago. One patient had a terrific pain just above the ear and the right pupil was contracted. The ophthalmologist reported very little change in the eye. Otherwise the man was absolutely negative by every test. In a general way he was feeling very bad. He became irrational and required some one to look after him in the hospital. Not having a trained nurse we had a friend watch him every night. I put him on large doses of arsphenamin preparation and potassium iodid. Inside of two weeks he cleared up, you would not have known him. The other patient, who had been under treatment for a year, was also negative to all tests. His general complaint was headache and vertigo, with high blood-pressure. His blood-pressure has gone down about twenty points. He had mental prostration. Now, instead of being able to do nothing at all, he is going about the farm doing some work and feeling much improved. It is this class of patients that is being allowed to drift on under different forms of treatment with absolutely no results. The third type of patient was fifty years of age, a hotel clerk, seen a year ago with an epileptiform attack simulating epilepsy. Tests were all negative, yet we suspected syphilis and put him on the tremendous doses outlined. A great many authorities state that one should not use arsphenamin until after mercury and iodids have been exhibited. I take exception to this, because if we waited until after that we would lose some patients during this critical period. This man also made prompt recovery on the same line of treatment. It is wonderful the amounts of this preparation these patients will take. Unless the specific taint is there they cannot take that treatment. Those cases are cited merely as examples. I could name perhaps eight or ten more on the same line. The main point is that the spirochete is there, the taint of syphilis is in the blood, acting as the underlying cause. Unless we give this intensive treatment of salvarsan, potassium iodid in large doses and mercury, we do not get the response.

Dr. Tom B. Throckmorton, Des Moines—I feel that Dr. Ash has brought before this Society a paper which is concise, clear and scientific. He has presented the high-water marks of diagnosis of neurosyphilis, emphasizing the great importance of some of the changes in the central nervous system whereby we are able to make a diagnosis of neurosyphilis. It does not make any difference where we

live, in the city or country, lues, like the proverbial poor, is with us always, and it is extremely important that any individual attempting to practice clinical medicine should always be on the lookout for changes in the nervous system indicating syphilis of the central axis. The Argyll-Robertson pupil is probably the most significant clinical symptom in this disease. Argyll-Robertson first called attention to this phenomenon, which is the sluggishness or absence of pupillary reaction to light with preservation of accommodation and convergence. Again, the optic nerve may be the site of the first changes indicating involvement of the central nervous system. An individual who would attempt to become a diagnostician of syphilis involving the nervous system, if not competent to use an ophthalmoscope, should have an ophthalmologist at his elbow to point out the presence or absence of changes in the disk and retina of the eye. You will recall that the eighth nerve is not infrequently the site of changes due to the spirochete. The second and eighth nerve are nerves of special sense, and why lues should not infrequently pick out these two nerves is not well known; however, it is a fact. The essayist points out that even the seventh nerve is picked out at times. That statement should be guarded in this way: If the sixth nerve is involved you will find that the cranial nerves in the same territory are very likely to be involved also. Again, when an individual comes in complaining of transient diplopia, you should always be on your guard in at least thinking of the possibilities of that individual having syphilis involving the central nervous system. The development of epileptiform seizures in an individual of maturity may be but the forerunner of lues involving the central nervous system; i. e., paresis. The essayist has pointed out the dangers that we as individuals belonging to the general public are liable to encounter in coming in contact with patients afflicted with incipient paresis, and I hope the public will have this subject thrust upon their attention to the end that they will insist that individuals occupying responsible positions undergo clinical examination once or twice a year in order to make sure that they are not incipient paretics who may at some time endanger the lives of many people. I am glad to hear Dr. Ash call attention to the fact that for some ten years complete drainage of the lumbar sac has been advocated as a helpful means in alleviating the symptoms of syphilitic disease of the central nervous system. This method was first advocated by Dercum of Philadelphia. Anyone raised about the farm will know how water in a pool will become stagnant unless there is present a contributing stream which will serve to keep the water stirring and fresh. So by repeated drainage of the lumbar sac, the choroid plexus pours out a fresh supply of cerebral fluid and in this way often helps to alleviate symptoms due to root irritation as a result of syphilis.

Dr. Frank M. Fuller, Keokuk—A word has been spoken this morning which I believe ought to be emphasized, and that is the word Dr. Van Epps used in the discussion of this paper. The essayist had pointed out the fact that syphilis of the central nervous system is multiform in character. We have uncertain symptoms of the central nervous system, very few of which we can absolutely identify. Dr. Van Epps referred to the fact that in many cases of syphilis this disease may not be the cause of the symptoms even though we have the evidence of syphilis by laboratory and clinical tests. I was very much interested in reading an article on pulmonary syphilis by Dr. Howard of Iowa City, published in a recent issue of the American Journal of Syphilis, citing the fact that many individuals who had definite evidence of clinical disturbance in the lungs also had positive clinical and laboratory evidence of syphilis, and yet at post-mortem syphilis of the lung was not demonstrated. We should always remember, as the essayist has emphasized and as we all know from clinical experience, that although syphilis is a common disease, yet we must get away from the assumption that because we suspect syphilis and that suspicion is apparently confirmed by laboratory methods, the condition from which the patient suffers is due to syphilis. We should first quickly decide whether or not that disease is not due to some other condition, as was strongly emphasized by Dr. Van Epps in citing a case in which they had all evidence of syphilis, and still found brain tumor.

Dr. Ash—I wish to thank the members for their generous discussion of this paper. I have not stated anything new with reference to the diagnosis and treatment of neurosyphilis. The point I wish to emphasize is the important role it plays in the causation of disease of the nervous system. As Dr. Auner mentioned, the incidence of central nervous system involvement during the general dissemination of the infection speaks for the early treatment of all cases of syphilis, and early treatment is the only means we have of doing these patients a great deal of good. While it is true that the treatment of parenchymatous syphilis is not entirely satisfactory, yet if the progress of the disease can be checked or favorable remission brought about, we are justified in our treatment.

AMERICAN BOARD OF OTOLARYNGOLOGY

An examination was held by the American Board of Otolaryngology on May 26, 1925, at the Medico-Chirurgical Hospital, Philadelphia, with the following result:

Passed	137
Failed	20
Total examined	157

The next examination will be held at the University of Illinois School of Medicine on October 19, 1925. Applications may be secured from the Secretary, Dr. H. W. Loeb, 1402 South Grand Boulevard, St. Louis, Missouri.

MODERN AIDS TO LABOR*

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In discussing the subject of gestation teachers throughout the world are accustomed to consider the pregnant state as a normal physiological condition, and practitioners generally have at all times been in the habit of telling the expectant mother that hers is a perfectly normal case and that everything will be all right. Reproduction is of course a physiological function, but some obstetricians in their pessimistic moments are tempted to look upon pregnancy as a disease, pandemic in its distribution, running a self-limited course of varying degrees of severity, and terminating at the end of nine months by crisis.

During the past year a series of observations made in the metabolic ward of the Burnside Lying-in Hospital might with some stretch of the imagination tend to lend a slight degree of support to the latter view. Harding and Van Wyck made a chemical analysis of the blood of a number of healthy pregnant women, carrying their observations through from the earliest months of pregnancy up to term, during labor and through the puerperium, and found that without exception there was a slight but gradual increase in the accumulation of the waste products in the blood from conception to the termination of labor, with a sudden return to normal during the puerperium. These observations go to show that pregnancy and labor while being normal physiological processes cause an interference with the metabolic process which at term and during labor may at times approach the point of impairment of the kidney function.

While the vast majority of expectant mothers have not until recently paid much attention to the pitfalls and dangers which may be met with during the course of pregnancy, they have long been alive to the real and imminent danger of labor, and while they may not have seen fit to consult a doctor earlier in the pregnancy, they have not failed to recognize the necessity of his presence at the crisis.

Of late years, however, the value of pre-natal care has been proven time and again. Not only has it made clear that the toxemias of pregnancy are to a great extent preventable, but it has also given to the observant attendant a knowledge of the size of the pelvis and of the nature of the labor to be expected, besides forwarning him of such difficulties and dangers as may arise. For these reasons we must consider pre-natal care our most valuable aid to labor.

Labor itself is rarely painless. In twenty years of practice I have had only two such cases, and the experience of other practitioners is similar to mine. From the beginning of time the parturient has undergone varying degrees of suffering from slight discomfort to extreme torture and humane consideration has demanded for her a degree of relief which is consistent with safety to herself and without danger to the child. Many devices have been employed to secure this relief, some by lessening pain, others by shortening labor, and in this paper I propose to make a few observations on the results of my own experience with some of the methods advocated by different enthusiasts.

The introduction of chloroform and ether into obstetric practice was of inestimable value and these anesthetics have stood the test of time. They have their disadvantages however, owing to the fact that while they relieve pain they also diminish contractions, prolong labor, prepare the way for post-partum hemorrhage, and are not without danger to the child when used for any length of time. Consequently of late years obstetricians have been looking around for some safer means of relieving pain, and with the introduction of nitrous-oxide as an efficient anesthetic they thought that they had reached the ideal. This combination, administered during contractions, relieves their pain without diminishing their strength and can be carried on almost indefinitely, but the expense of the gas itself together with the cumbersome apparatus, and the necessity of a trained anesthetist to administer it, put it beyond the reach of all but hospital patients.

The discovery of the amnesic effect of morphine-hyoscine narcosis appeared to solve the difficulty and for a time the so-called "Twilight Sleep" was universally tried. In 1905 we experimented with this method at the Burnside Lying-in Hospital for a period of two months, but a series of blue babies in rapid succession led us to discard it as a routine treatment and we did not take it up again until 1920 when it was used with success in forty-five cases. In this series all the babies cried lustily at birth. The labor was in no case prolonged and the amnesia was complete in every case but one. It is however quite true that in each of these cases a small amount of C. and E. mixture was administered during the perineal stage.

The lesson learned from the poor results in 1905 was that the depressant action of the morphine on the respiratory centre of the fœtus made

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the administration of the drug inadvisable in the second stage, as its effect had not worn off by the time this stage was complete, and resulted in the birth of an asphyxiated child. Accordingly it is our custom now, when this method of treatment is advisable, to give only an initial dose of morphine grs. ⅙, which is administered in the first stage accompanied by 1/200 gr. of hyoscine, the hyoscine to be repeated as necessary in order to maintain the required degree of amnesia. Here again this method has its disadvantages. It requires the attention of a specially trained nurse, or the presence of the doctor for its administration, as well as suitable surroundings and the cooperation of the family. The room must be darkened, isolated, and quiet, while the family must be informed as to the possible effects of the hyoscine on the patient, as in many instances while the effect of amnesia may be produced there may be a lack of control of the emotions on the part of the patient who may appear to be suffering more than ever during pains. It is hardly, therefore, a suitable method for use in the home, although it is of value at times particularly with a moderate degree of pelvic contraction, during prolonged first stage, due to a slowly dilating cervix or with a very nervous patient.

Another method of anesthesia lately introduced by Gwathmey and his associates is that of the administration of ether by rectum. His method is to give a hypodermic injection of ⅙ grs. morphine dissolved in 2 c.c.s. of 50 per cent solution of chemically pure magnesium sulphate at a time when the pains are coming every three or four minutes, the cervix is being taken up and the os dilated two or three fingers. This is followed in fifteen minutes by the injection, by means of a syringe on the end of a medium sized rubber catheter of a mixture of quinine hydrobromide, 2 drams of alcohol, and 2½ ounces of ether in enough olive oil to make four ounces. Care must be taken to have the lower bowel thoroughly cleansed by enemas before the instillation is made and the whole amount should take from five to ten minutes to inject, pressure being made on the perineum during pains. The effect of this treatment is to cause the patient to become drowsy within three or four minutes and to continue so for three or four hours. If after that time she becomes restless a hypodermic of 2 c.c.s. of 50 per cent solution of chemically pure magnesium sulphate is given and may be repeated a second time if necessary. The optimism of Gwathmey led me to try his method as outlined in his first report, in forty-two cases at the Burnside. In forty of these the recollection of the labor was indistinct and its length apparently shortened while in two the results were entirely unsatisfactory. There were nausea and vomiting in thirty cases, and in twenty-two cases inhalations of C. & E. were required toward the end of the second stage. In this series, two of the babies were still-born and the method must take the responsibility of this unfortunate result. Here again, while the method of administration was simple, the patient required extra attention on the part of the obstetrician and the nurse. In more than half the cases there were nausea and vomiting and the method was not without danger to the child. It is a method, however, which is of value in prolonged labor, in the latter part of the first stage, and it produces analgesia and an amnesia which generally lasts through the stage of nausea and vomiting.

Another aid to labor, which appears to have more advantages and fewer disadvantages than the other narcotics used in obstetrics is heroin. It is now being used in the Burnside with uniformly satisfactory results, although the administration of C. & E. is necessary during the perineal stage. It may be given at any time during the first stage in 1/12 gr. doses and may be repeated as often as is necessary to control the pain. It does not seem to have any effect on the strength of the contractions. Labor is not prolonged and the mother is not exhausted at its termination, while it appears to have no ill effects on the child although in two cases reported to me the foetal heart rate was slowed to sixty beats per second after its administration and in each of these cases artificial means were necessary to restore the baby. In one ether case when the drug was administered during the latter part of the second stage an asphyxiated baby was born, which required half an hour to resuscitate.

Spinal anesthesia is another method which has been used advantageously, particularly in the West. My own experience however with the use of Stovaine in abdominal surgery was so disappointing, in that it had to be supplemented by a general anesthetic that I have not yet felt justified in using it in obstetrics. Nor have I lost sight of the fact that the late Sir Victor Horsley, when collecting statistics on the continent concerning the use of spinal anesthesia, met with several instances of neuromata in the spinal cord following its administration.

So far I have considered only certain aids to labor which deal with the relief of pain. Besides these there are medicinal, mechanical, and surgical methods which are used for the purpose of shortening labor.

Of medicinal aids, pituitrin is one of the most impressive drugs which have come into use dur-

ing the last fifteen years. It has been both praised and condemned in high places. In my experience however, it has proved most valuable. But there are certain facts about it which it is well to remember. First of all, we know that it causes intermittent contractions of smooth muscle fibres. We know too that patients react differently to its administration, and we also know that different preparations have varying degrees of potency. It is advisable, therefore, to take the precaution of ascertaining the susceptibility of the patient to its action by administering the minimum dose before using the larger dose required to produce the desired result. It is also absolutely necessary to make sure that there is no obstruction in the canal which will counteract the effect of the increased pressure from above, produced by the action of the pituitrin, otherwise the results will be dangerous in the extreme.

I have used the drug in more than 300 cases, chiefly in multiparæ, but only in the normal cases where the cervix has been dilated or is dilatable, when the head is in mid-pelvis and where there has been no rigidity of the perineum. In ten cases, I perceived no effects, in the remainder, the average length of time from the administration of the drug to the completion of the second stage was twenty minutes. There were two cases of tonic uterine contraction readily controlled by the administration of an anesthetic, which should be kept always ready at hand, and two cases where there was a moderate post-partum hemorrhage easily controlled. Two of the babies showed asphyxia, but cried lustily within twenty minutes. There was no fœtal or maternal death in the series. I have come to the conclusion that pituitrin is one of our most valuable means of shortening the second stage without mechanical interference, but it requires the exercise of as much care and obstetrical judgment in its administration as any other method now in use. For instance, one must determine that there is no disproportion between the maternal pelvis and the fœtal head. One must know the lie and attitude of the child, and one must be sure that the passages are clear of obstruction, and that there is no rigidity of the cervix or perineum. One must also determine beforehand the strength of the preparation to be used and the susceptibility of the patient to its action.

So far as I have been able to determine from the reports of the tragedies following the use of pituitrin, some one of the precautions outlined has been neglected, or there have been other factors which should share the responsibility with this much maligned drug.

Of the mechanical aids probably the one most widely discussed is that of version. Two or three years ago Potter startled the medical world by claiming that the ideal method of eliminating the suffering during the second stage was by converting a vertex presentation into a breech, and delivering as such according to a technique which he has developed to the highest degree of perfection. Oddly enough, however, he did not use this technique in the ordinary breech presentation but resorted to Cesarean section in such cases. The results obtained, however, as far as the fœtal mortality was concerned were not as good as those obtained from the conservative treatment of a similar number of cases reported by Polak.

When such a method conceived and carried out by a master of his art, fails to produce favorable results as far as the fœtus is concerned, it should be condemned as of no value to the general practitioner. The technique of version, however, described and employed by Potter is well worth consideration by every practitioner, and might be followed with advantage wherever this procedure is indicated.

DeLee actuated by a desire to eliminate the suffering of the second stage has advocated a prophylactic episiotomy and mid-forceps operation which while it does what it is intended to do, converts what should be a physiological process without mechanical interference into a surgical procedure with all its accompanying dangers and should not be attempted outside of a hospital. It is of considerable value however in certain emotional types which cannot be controlled by narcosis. Episiotomy alone I have found of value particularly when the head is delayed too long on the perineum, in elderly primiparæ with a rigid perineum and when a tear is inevitable.

In this brief outline of aids to normal labor I have considered only a few of the methods advocated by men of experience, who have been actuated by a desire either to relieve or cut short the suffering of the parturient. No one of the methods is perfect, but each of them has something in it which is of value to the general practitioner. After all, there are three requisites for success in the obstetric practice. In the first place, the obstetrician must have a conscience. Remembering the narrow pathway along which his patient is traveling, on the borderland between health and disease, he must take every precaution to secure her safety, so that in the event of a tragedy he will not be compelled to bear the burden of self-reproach. Secondly, he must possess infinite patience and tact enough to avoid being driven into hasty action through the im-

portunities of the patient or her family. And lastly he must possess sound obstetric judgment. The old dictum "Beware of meddlesome midwifery" is sound and sane advice, but with watchful waiting the careful observer finds at times that intelligent interference is not only advisable but life saving.

SYSTEMIC ASPECTS OF ACHYLIA GASTRICA*

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For some reason, difficult to determine, gastric lavage for diagnostic purposes is no longer utilized to an extent comparable to the information obtained. There are several causes for the neglect of this procedure. The most important, perhaps, are the fancied discomfort to the patient, and the supposed technical difficulties of the procedure. Of almost equal importance is the introduction of pseudo scientific refinement suggested with a view of attaching undue importance to variation in the acid percentage in comparative diagnosis of different conditions or in consideration of an ideal curve in the individual case.

The popularity of x-ray examination, both with the profession and the laity, has also had the result of almost completely superseding the older methods of Kussmal. In a consultant's practice, at least twenty patients give a history of x-ray survey to one who has had diagnostic study of gastric contents. But diagnostic gastric lavage is difficult neither for the patient nor the physician when good technic is used. With the patient recumbent, the tube is most easily introduced, extraction is without trouble, and in addition, inflation demonstrates the size and position of the stomach as well as with the x-ray, and also offers opportunity to estimate the thickness of the stomach wall.

Attempts to formulate an ideal curve of acid secretion are doomed to failure. So many different causes, some physical, but more in that peculiar psychic realm dominated by the emotions, influence gastric secretion, that there is just one point of importance in gastric analysis—is free hydrochloric acid present? If acid is present in examination after the Boas meal, the percentage is of very minor importance. If acid is absent, the microscopic appearance of the pasty content tells at once complete achylia. Only with liquid gastric content is it necessary to use repeated examination, or the Rehfus, and then this test need be continued only till the acid is found.

X-ray examination has its place in the diagnosis of gastric disease, but it should supplement and not replace gastric chemistry. From the hands of the x-ray expert, reports must be accorded due weight, but they do not make the diagnosis—so a negative report from the roentogological examination is not the finality of diagnosis, and the so frequent report of dilated or fallen stomach, much as it satisfies the patient, is not a diagnosis.

Even when the history points to ulcer, lavage should precede x-ray examination. No matter how well trained the clinician, he cannot differentiate from the patient's description in all cases between the distress caused by too much or too little acid. Proof should be sought by lavage in those cases which have the classic symptoms of achylia, red tongue, gas, belching, regurgitation, vomiting and diarrhea. But only a small proportion of cases without acid present these symptoms, and, consequently, unless lavage is utilized as a routine procedure, many cases of true or symptomatic achlorhydria are overlooked.

The literature of the last few years has demonstrated the acceptance of the postulate that absence of acid must be demonstrated in pernicious anemia and by equally cogent reasoning, spinal cord changes with negative Wassermann and absence of acid justify the diagnosis and prognosis of pernicious anemia regardless of typical blood findings.

If the old idea of temperaments were retained in medicine, a pernicious anemia temperament or type might be described. We are all familiar with the picture—moderately fat individual, prematurely gray, with a little tendency to baldness, frequently with leukoderma, inclined to early digestive troubles, with red tongue and gingivitis. Such is the patient whose appearance at once suggests a blood examination. In the history, there is usually a complaint of parathesia. Taken as a whole, these manifestations indicate study of the gastric function. Taken each separately, as an indication for lavage, no matter in what condition observed, the results of gastric analysis are surprising.

With leukoderma is, of course, included leukoplakia, premature grey hair and cantitis. It is but a short step, and quite worth while, to include other disturbances of pigmentation. Chloasma and undue tanning; the bronzing of Addison's disease should be studied from this angle. In occasional reports on pellagra, achylia is mentioned, and the pigmentation in this condition may have

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the same significance. Certain changes in mucous membrane, aside from the atrophied tongue, must all raise the question of achylia. Of interest to the gynecologist is carunculosis; achlorhydria is a very common concomitant of this distressing condition.

In leukoplakia, there is a specific element in about half the cases, but in the half not specific, a large proportion will be found to be associated with achlorhydria. In true leukoderma, the absolute symmetry indicates nerve influence, and the frequent association with determined spinal cord lesions of pernicious amemia, in the form of paresthesia, seems to indicate, at least, a possible common factor. About 85 per cent of leukodermas show absence of acid, and, so leukoderma, as an indicative sign, demands gastric analysis, and such cases as have no acid should be considered potential pernicious anemia.

Premature grey hair and canities are similar signs, but have their additional characteristics. Such conditions are more markedly hereditary, and in just those occasional reported instances of familial pernicious anemias, it will be found that premature grey hair is part of the clinical picture. Other causes are, undoubtedly, present in premature greyness, but a sufficient proportion present achylia to make gastric lavage a part of the examination no matter what symptoms are found in paresthesia.

The bright red tongue of symptom producing achylia is well known and a similar condition of atrophy of the fecial mucous membrane is found in pernicious anemia. Closely related to this typical red tongue are other conditions of similar import. The so-called geographical tongue denuded in places of all mucous membrane is apt to be associated with achlorhydria. The broad flabby tongue showing indentation of the teeth has this same significance. Canker sores in many cases are dependent on deficient acid secretion, either constant or intermittent heterachlorhydria.

Inspection of the tongue is almost a lost art, but tradition remains persistent in the patient's fear of a coated tongue. Examination of gastric contents, when any of the above deviations from normal appearance in the tongue brings to light many interesting associations.

The beef red tongue is characteristic in diabetic coma. Test of the vomitus in such cases always shows absence of acid. And in those cases which recover from coma, a gastric analysis shows persistent, though perhaps, not constant achlorhydria. Routine stomach examination in diabetes reveals in almost every case lack of acid. This applies particularly to the severe juvenile type of diabetes, but even the fat diabetics of the fourth decade carry a digestive burden which failure of acid formation may increase.

Goitres of various types present the same anomalies of the tongue. In hyperthyroidism, the tremor and the color are often found. Particularly in the terminal stages, with fibrillation, the tongue is identical with the tongue of diabetic coma. In the early stages of hyperthyroidism, the stomach condition is one of heterachlorhydria, the periods of exacerbation coinciding with those of absence of acid. With toxic adenoma, the advent of fibrillation may be expected. Gastric analysis at such a time shows absence of acid and in some cases of adenoma, there is persistent achylia. Myxoedema too, even in the milder types, shows achylia, and in that perplexing type of mild myxoedema, with fatigue as the only symptom and a peach blow complexion, as figured by Bramwell, the most significant sign, the accompanying achylia, at once suggests pernicious anemia, but when acid and thyroid substance are administered the astonishing results immediately determine the proper diagnosis.

Not only in the fibrillation of toxic adenoma is achylia often found, but when this type of cardiac irregularity is due to any of the other causes, lack of acid may be demonstrated in about 50 per cent of cases. The general appearance of such patients suggests the type previously described as characteristic of those with achlorhydria—and even if a stomach examination seems contraindicated on account of the heart condition, a therapeutic test with acid can do no harm. Surprising results are sometimes brought about by combining acid with either the indicated digitalis or quinidine. Fibrillation associated with other conditions, notably mitral stenosis, may have a concomitant achylia, and in fact, heart failure itself may be a cause of achylia, or in a measure dependent on pre-existing lack of acid.

Colon bacillus infection of the genitourinary tract is yet another condition in which achlorhydria is a factor—so much so that each case in which there is colon bacillus infection outside the gastrointestinal tract, the routine examination should include the chemistry of the stomach. In gingivitis, especially when there is ulceration at the base of the lower central incisors so characteristic of pernicious anemia or the bleeding gums of generalized pyorrhea, an achylia will frequently be found.

Paresthesia of any description, and minor symptoms of spinal cord changes indicate lavage, even before lumbar puncture, since the combination of achylia and cord degeneration may precede the characteristic blood changes of pernicious anemia many years.

Many cases of chronic acute pulmonary tuberculosis have periods of achylia and it is during this period that the disease is most progressive.

It is difficult to formulate all other definite indications for gastric lavage, but within the last year, seven patients with abdominal scars, but with no relief of symptoms from the operation, have been found to have achylia. Were gastric lavage utilized in all cases of abdominal distress of uncertain origin, and especially in the legendary dyspepsia from chronic appendicitis, this latter myth would take its proper place with the Roc's egg and the Unicorn's horn.

The association of achylia and pernicious anemia has been attracting much attention and it is now rather generally accepted that the achylia stands in a definite etiological relationship to pernicous anemia. There is, however, no generally accepted theory of the pathogensis, although two main theories are offered. The one, that failure of the antiseptic action of hydrochloric acid allows the products of oral sepsis to directly invade the intestines and these produce hemolytic poisons. The other theory is based upon failure of proper process of proticysis in the absence of gastric acidity, and the production of toxic substances from the protein molecule which are hemolytic. Much clinical and experimental evidence must be forthcoming before either theory can be definitely accepted.

In the continued discussing of Pavlow's theories of the physiology of the stomach, many of his ideas of gastric secretion are subject to attack, but his postulate of the antiseptic action of hydrochloric acid in the concentration found in the normal gastric secretion has been practically accepted by the physiologists, although full application of this fact has generally escaped clinical judgment.

To go back a step further and make inquiry concerning the cause of achylia, leads us at once to a wide field of speculation. In cases of symptom producing achylia, careful inquiry fails to determine a definite date of onset, nor can an antecedent cause in the nature of acute infections be ascertained. Certain types of disease seem to have achylia which is without systemic influence of the condition here discussed. Achylia is an almost constant concomitant of carcinoma ventriculi—and only slightly less constant in cancer involving other portions of the gastrointestinal tract. Gastritis, formerly so common in diagnosis as an euphonious confession of ignorance, has a true but small place in nosology, and a small percentage of cases of gastritis show an acidity.

Emotional suppression of hydrocloric acid is a common defense reaction of mankind. Each of us, in direct proportion to his poise, has been disturbed by this particular symptom from which recovery is more or less rapid and permanent. In the true neurotic, this, as other emotional reaction can be exaggerated almost beyond belief. Variations from complete achlorhydria to HCL 120, may be found at subsequent examinations. Whether emotional reaction eventually determine conclusive suppression of hydrochloric acid can scarcely be determined without long clinical investigation.

Congenital absence of hydrochloric acid may be assumed. In a recent investigation of gastric secretions in children from six to fifteen, Wright[1] has shown that 5 to 250 showed absence of acid.

Felsen[2] in studying the gastric function in epil-

Medicine, August, 1924.

epsy has demonstrated achylia in 15 per cent and hypoachlorhydria in 11 per cent of his patients (mostly young men). Nineteen per cent of his controls showed achylia.

Eggleston[3] has recently reported the results of fractional analysis in 2730 cases; with 10 per cent showing persistent achlorhydria and 8.5 per cent with no free hydrochloric in the first hour.

Hurst[4] reports practically the same figures; 10.5 per cent in a series of 235 cases.

These and other reports, all tend to show the absence of hydrochloric acid in about 10 per cent of normal adults. My interpretation of these reports is somewhat different from that of the authors. Might it be suggested that lack of acid predisposes this 10 per cent group to many different clinical conditions. There is an accepted association between pernicious anemia and achylia and may I suggest that absence of acid is an important element in the development of many different conditions not previously associated with achylia.

In gastric intestinal infections, lack of acid may play an important part. Even in typhoid and cholera, there has long been a belief that fear of the disease predisposes the individual to the disease, and this belief may have some foundation, in fact, since fear is one of the main causes of temporary diminution in acid secretion.

Certain of the general conditions in which the pathogenesis is still a matter of argument should be studied from the standpoint of gastric secretion. The susceptibility of individuals living in the same invironment to pellagra, sprue and berri-berri, by a rather remarkable coincidence is about 10 per cent, which is the same percentage as achylia. There is an occasional report

1. Wright, Archives of Internal Medicine, April, 1924.
2. Felsen, Laboratory Studies in Epilepsy, Archives of Internal
3. Eggleston, American Med. Assn. Journal, July, 1924.
4. Hurst, Lancet, F. 17, 1-111, January, 1924.

indicating achylia in this condition, and in the few cases observed personally, achylia is always found. Certain clinical aspects of hook worm disease are suggestive of achylia, and it would add greatly to the value of the hook worm survey if the percentage of achylia cases were established.

In the practice of the older clinicians, accidium hydrochloric dilutum, and accidium nitrohydrochloric undilutum, occupied a place with the iodides and were given extensively, particularly in cases where an exact diagnosis could not be made, and also as a "tonic", especially during convalescence, and the older clinicians obtained good results. Today, therapeusis is hindered by an array of scientific facts. Unless definite proof of efficacy is offered, drugs must be exhibited. But in spite of accumulating negative scientific evidence of the efficacy of iodides, "potash" continues to be used with good results, in many conditions not dependent on syphilis or thyroid disturbance. The same thing holds true as to hydrochloric acid and it may also have a very wide field of application.

Carlson reports that in normal digestion, there is secreted with each average meal 700 c.c. of gastric juice with a hydrochloric acid concentration of 5/10 per cent, or 3.5 c.c. of hydrochloric acid. Dilute hydrochloric acid of the pharmacapoea is in 10 per cent concentration so it would require 35 c.c. of this preparation at each meal to approximate normal secretion and the administration of this amount is of course a physical impossibility. But in spite of the theoretical objection, from the patient's standpoint, therapeutic doses of hydrochloric acid are quite sufficient.

No more brilliant results of therapy can be demonstrated than the effects of proper doses of dilute hydrochloric acid in symptom producing achylia. In the average case, pyrosis, gas, distress after eating and diarrhoea—in other words, the indigestion, is almost immediately relieved by acid. Theoretically, this is difficult to explain, since therapeutic doses cannot possibly reach the concentration necessary for bacterial action. The more recent opinion of the physiologists deny the Pavlow theories of the influence of hydrochloric acid in controlling pyloric function. In spite of this, and other theoretical objections to the use of hydrochloric acid, good results are obtained. And there is no stronger therapeutic indication in medicine than the continued use of hydrochloric acid in all cases in which achylia is demonstrated by gastric analysis.

In the type of cases we have described, the administration of acid does not bring immediate relief which is so striking in the ordinary case of symptom producing achylia, nevertheless, it should be exhibited in every case in which achlorhydria has been demonstrated. It is too much to expect here, as elsewhere restoration of degeneration as shown by leukoderma and an denuded tongue, but by the use of acid, we may hope to prevent further degeneration of this same type.

In diabetes, the problem is different. Much energy and long discussion has been spent on dietetic problems without the realization that the ideal digestive process does not exist in the individual with pancreatic insufficiency. The absence of hydrochloric acid adds a different problem to the case, but this is a factor which can easily be corrected, and with correction, the dietetic control is much easier, and the theoretical glucose content of the diet may frequently be increased greatly to the benefit of the patient. In the adenoma type of goitre the disaster is delayed so long that it is difficult to draw conclusions but on the possibility that this ultimate heart toxine is in some way dependent on achlorhydria, acid should be administered as a part of the daily routine. In hyperthyroidism, with its greatly increased metabolic rate, the secretory activity of the stomach should be carefully watched and in those periods with diminished secretion of acid, which generally coincide with periods of regression, acid should be administered to the tolerance of the patient.

Hydrochloric acid is likewise a valuable adjunct in the treatment of heart conditions. We should not be satisfied that digitalis ineffectual without determining the condition of gastric secretion and should order hydrochloric acid with digitalis when acid is absent. The results here are not as brilliant as in fibrillation. In this condition, with its 50 per cent remarkable victories, the proof of achlorhydria and the subsequent administration of the same amount of quinidine with hydrochloric acid will turn quite a large proportion of failures into victories.

There are many interesting scientific problems in connection with this question of acid secretion and adaptation, but these problems must be worked out by the physiologists who are not yet in agreement concerning many of the main points. For the clinician remains the question of the effect of loss of acid which deserves much more intensive study, but let it be said that when achylia is found in any condition, acid should be given, and the results while not comparable with the results of the administration of the active principle in our best known deficiency disease—myxodema, nevertheless, brings satisfaction to the patient and the attending physician.

MOVABLE KIDNEY*

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The term movable kidney is applied to kidneys that have a range of motion in excess of that of the normal. The term has come, as a result of usage and convenience, to have an almost exclusive pathological significance. The term floating kidney is limited to the congenital anomaly, a rare condition, in which the kidney has a peritoneal covering and mesonephron and is an intra-abdominal organ with a wide range of mobility.

Nephroptosis, or movable kidney, is of common occurrence, the knowledge of which dates back to the writings of Pedemontanus in 1581. In 1864 Dietl described the cases of renal crisis which now go by his name. Two and three decades ago much was written about such a condition and operations for the relief of the ptosis were of every day occurrence. More recently the literature has contained but few articles on the subject and like appendicitis, the last word seems to have been said. However, every physician is constantly seeing such cases and many of them are being neglected until irreparable damage has been done. Patients are frequently seen who state that "the doctor told me twenty years ago that I had a movable kidney". But almost none of them have given advise as to the relief of such a condition. This paper is written with the idea of stimulating interest in this old yet important subject.

Supports of the Normal Kidney—For an understanding of movable kidney, knowledge of the anatomy of the supporting structures of the normal kidney is necessary. Each kidney is located in a paravertebral or renal fossa bounded posteriorly by the muscles of the loin and back, in front by the peritoneum, above by the diaphragm, and below by the ileum. The kidney extends from the upper margin of the twelfth rib to the lower margin of the second lumbar vertebra. The right kidney lies a finger's breadth below the left.

The fossæ in the female are cylindrical in shape and often widen out below, in the male they are pear-shaped with the narrow end below. In the female the fossæ are equal in size and depth although the transverse diameter of the right may be wider. In the male the right fossa is deeper and larger than the left. These important differences are due to the wide pelvis and narrow lumbar region so characteristic of the female sex. Thus body form is the chief factor in predisposing to movable kidney.

Perirenal Fascia—Surrounding the kidneys and perirenal fat is a well defined fascia called the perirenal fascia. It is composed of an anterior layer of thin fibrous tissue and a heavier posterior layer. Medially the layers extend behind and in front of the renal vessels and are attached to the vertebral column. The layers remain separate also for some distance below the inferior pole of the kidney and it is into this downward extension of the fascial compartment that the kidney descends in the condition of movable kidney.

The two layers join above the suprarenal and pass as a single strong band to unite with the tendinous area of the diaphragm. There is thus formed a strong suspensory band for the kidney when the body is in the erect posture. The adrenal does not prolapse with the kidney but remains suspended by its vessels, nerves and fine fibrous strands. At the outer surface of the kidney the layers fuse to form a fibrous cord which passes out behind the peritoneum to join with the transversalis fascia.

Perirenal Fat—Each kidney is surrounded by and enveloped in a well marked fatty capsule, the perirenal fat. Behind the kidney the fatty capsule is thicker, thus forming a soft bed which protects the kidney from injury. The more fat present the more firmly will the kidney be packed in position, a sudden loss of this fat causes the kidney to have an increased mobility. Numerous fine fibrous bands run from the kidney through the fat to attach to the perirenal fascia.

Pararenal Fat—Behind the perirenal fascia and in front of the transversalis fascia another pad of retroperitoneal fat forms a protective bed for the kidney.

Renal Supports—As shown above the kidneys are not held in place by any very definite ligaments, but they depend on a number of factors for their support. The first is the perirenal fascia which is of primary importance as a supportive structure. The perirenal fat is a factor of very minor importance, as is the support afforded by the vascular pedicle of the kidney. Intraabdominal pressure is the factor of perhaps the greatest importance in holding the kidney in its proper position. This pressure, which is greater than that of atmospheric air, is produced by the tension of the abdominal muscles. This force produces an upward thrust of the more mobile viscera on the kidney against a counter pressure exerted by the lumbar muscles. A lack of tone of the abdominal muscles from any cause

*Read before the December Meeting of the Plymouth County Medical Society.

lowers the intraabdominal pressure and makes abnormal kidney mobility possible.

Etiology—Incidence—Kuster estimates that 4.41 per cent of women examined in a surgical practice have movable kidney. Edebohls finds it in 20 per cent and Harris in 56 per cent of gynecologic cases. An analysis of the combined figures of Edebohls, Glenard, Goelet and Hahn finds abnormal mobility in 22.2 per cent of all living women.

Sex—The most important factor in the etiology of movable kidney is sex. Schultz finds the ratio of women to men as 100 to 18, Glenard 100 to 12 and Dietl 100 to 1. The latter ratio is probably most nearly correct. Only 2 per cent of men have movable kidney.

Body Form—The asthenic habitus woman is predisposed to renal mobility. This type of individual is usually small and thin with a long flat chest and the lumbar curve is poor and flat. The renal fossa are as a result, wide, shallow and more vertical, with consequent loss of support for the kidneys. General visceroptosis is a common accompaniment of movable kidney but the nephroptosis is probably a coincidence rather than a result of visceroptosis.

Tight Lacing—This is of little importance as an etiological factor. The corset pressure is chiefly below the waist line and should tend to support the kidneys. Approximately 20 per cent of Egyptian and Samoan women have movable kidneys, yet neither wear corsets.

Pregnancy—Movable kidney is more common in women who have borne children. The increase in the abdominal capacity and the relaxed abdominal wall and pelvic floor reduces the important supportive factor, the intraabdominal pressure, and predisposes to mobility. Kelly and Burnam report 245 cases, 95 of whom had borne children. Reduction of intraabdominal pressure from other causes, as the removal of a tumor or tapping an ascites also predisposes.

Trauma—More or less severe trauma frequently precedes the discovery of a movable kidney, but it is doubtful if such mobility ever occurs in normal individuals, unless there is sufficient injury to cause local rupture of the tissues. Blows and crushing injuries as well as severe exertion or straining may be etiological factors. However, movable kidney is rare in men who are subject to trauma. Thus all the evidence indicates that trauma is a factor of minor importance.

Rapid Absorption of Fat—Sudden loss of the perirenal fat which helps to support the kidney may be a factor in producing abnormal mobility. Long continued fever, malignancy and other diseases leading to cachexia may produce this state of affairs. For this reason a gain in weight may give the patient with movable kidney much relief.

The right kidney is more frequently displaced than the left, but the condition may be bilateral. The preponderance of ptosis on the right side is due first to the drag of an overweighted caecum and colon. (Lane regards chronic constipation as an important etiological factor.) Second, to the shape of the right fossa. Third, to the pressure of the liver. Fourth, to the increased length of the right renal artery.

Symptoms—The symptoms caused by movable kidney vary from slight pain or discomfort to chronic invalidism. Many patients have abnormal mobility of one or both kidneys for years with no knowledge that such a condition exists. The severity of the symptoms depends entirely upon the degree of mobility and the resultant obstruction of the ureter or vascular pedicle. Three degrees of mobility are described by Harris. First, one-half of the kidney can be palpated and the organ made to recede. Second, both hands can be brought together above the kidney. Third, the kidney extends to or below the pelvic brim. Pain is one of the chief symptoms. It may vary from a slight feeling of discomfort in the kidney region to a very severe pain. The severe pain is usually aching and heavy with occasional colicky exacerbation. Walking or jolting increases the pain and lying down usually affords some relief. Many patients have a feeling of something moving in the renal area. Hemorrhage may result from renal ptosis but is of rare occurrence.

The renal crises described by Dietl are acute attacks due to a twisting of the renal pedicle or a ureteral block. The pain is violent and is accompanied by constitutional symptoms such as nausea, vomiting, chills, fever and shock. Muscle spasm often is present during and after the attacks. Palpation of the kidney shows it to be large and tender. When the kidney is replaced the patient often has a sensation of urine passing down the ureter.

The gastrointestinal symptoms of movable kidney are due to the renal pain acting through the sympathetic and central nervous systems or they may be due to a mechanical action, such as a drag on the mesentery, or pressure on the duodenum. The chief symptoms noted are anorexia, belching, nausea, pain, and constipation; jaundice may occasionally be present. The patient frequently is unable to lie on the sound side. Bladder symptoms are of rare occurrence until infection supervenes. Then the patient has all the symptoms of a pyelonephrosis.

The patient with a movable kidney may be a marked neurasthenic and the question often arises whether the kidney is the cause of the condition. Many individuals with other symptoms of a severe nature are free from nervous symptoms, so it is probable that a preexisting neurosis is present. Nervous symptoms vary from irritability and restlessness to insanity. Vasomotor instability is likewise frequently present and is evidenced by cold feet and hands, flushing of face and palpitation.

Diagnosis—In the cases of marked mobility the diagnosis is usually readily arrived at. The finding of a movable, kidney-shaped mass in the renal region which can often be replaced in the renal fossa with relief of symptoms makes the diagnosis certain. Palpation should always be tried with the patient in the erect as well as the recumbent posture. The kidney usually shows a definite respiratory mobility.

As to whether the mass is the cause of symptoms, this can usually only be determined by means of x-ray and cystoscopic methods. A radiogram will often show the kidney enlarged and in a low position. A ureteropyelogram taken with the patient in both the upright and reclining postures will show the degree of mobility and will also determine how much ureteral obstruction has occurred, with its subsequent pelvic dilatation and deformity. A differential function test also indicates the amount of damage done to the parenchyma.

Pathology—Changes in Kidney Due to Mobility—The mere fact that the kidney has an abnormal range of motion is alone of little significance to either the patient or physician. However, sooner or later, due to the ureteral kinking and obstruction and to the interference with the renal circulation the kidney begins to undergo permanent changes.

The pelvis due to back pressure becomes dilated and deformed and its walls become thickened, whether the hydronephrosis is intermittent or constant. Later due to stasis infection supervenes and a pyelonephrosis exists which may progress to a marked degree.

The obstruction to the renal vein also produces a chronic passive congestion with destruction of the glomeruli and tubules. If the condition is not relieved, eventually the parenchyma may be entirely destroyed with a complete loss of the secretory function.

For these reasons an early recognition of a movable kidney is important and proper measures should be instituted to relieve the ureteral and vascular obstruction before irreparable damage takes place.

Treatment—Very little that is new in the treatment of movable kidney has been brought forth in the past decade or two.

Judgment should be used in communicating the information to the patient that a movable kidney is present, lest the knowledge precipitate a train of nervous system. Advice should, however, be given as to measures to improve the general health. They should also be told how to increase their weight and strengthen the abdominal muscles and should be instructed to avoid strenuous exercises. The treatment may be divided into two types:

1. *Palliative*—Proper rest is important. Assuming a position with the hips elevated several times a day aids in retaining the kidney in its proper location and thus permits a free drainage of urine. A liberal diet of fat producing foods also increases the perirenal and retroperitoneal fats and helps to increase the intraabdominal pressure. Exercises to develop the abdominal muscles and increase their tone aids in obtaining the proper intraabdominal pressure and is of much value.

2. *Mechanical Supports*—By means of mechanical support the intraabdominal pressure may also be increased. Many different devices have been used to obtain this effect. The Gallant corset which extends from thorax to pelvis causing upward pressure has been widely used for years with good results. Numerous types of kidney trusses are obtainable, but are expensive and are apt to do more harm than good. A snug binder of muslin or elastic tissue with whale bone stays applied before arising in the morning furnishes a comfortable and efficient means of support.

In acute attacks the patient should lie with the hips elevated and by gentle manipulation the kidney should be returned to its proper location.

Operative Measures—Surgery is indicated in the following cases; if the range of mobility is increasing, if the symptoms are severe and if evidence of secondary diseases of the organ appear. Many operative procedures are suggested. The important thing is to fix the kidney firmly in place without injuring its parenchyma. One group of operative measure aims to produce a mass of granulations and scar tissue about the kidney to cause fixation chiefly by this means, by scarification of the renal capsule and surrounding tissues by gauze packs, holding the kidney meanwhile by suture.

The second type of operation is more of a true fixation. The renal fascia is freed and is sutured directly to the lumbar fascia and muscles and by decapsulation granulations are permitted to form

which also furnish support without injuring the kidney.

Both types of operation are done by the usual lumbar technique, the perirenal and extra renal fat are removed as the fat prevents adhesions from forming properly.

After operation the patient is kept in bed with the hips elevated for about ten days. Three weeks is the usual period for the patient to remain in bed. When the patient is allowed up a snug binder is worn for several months.

Failure is usually due to not fastening to kidney in a high enough position. The mortality from the operation is very low and a permanent cure results in from 70 to 75 per cent of cases.

CASE REPORTS

The following case reports illustrate some of the different degrees of movable kidney.

Case 1. White female, age thirty, single, tall and very slender, general health good. Past history negative. For three years the patient had had pain in her right side and back, it was usually dull and aching in character but at times was severe and colicky. The pain was increased by being on her feet or by riding. By lying prone for fifteen or twenty minutes the patient was able to obtain relief from her pain. The cessation was frequently accompanied by a sensation as if urine were passing down the ureter. There had been no tenderness between attacks. She had some burning urination but no other urinary symptoms. She had no chills or fever. The urine contained some pus and bacteria. For two years she was on antiseptics and vaccines with but very little relief. Her weight three years ago was 160 pounds, she now weighs 120 pounds. She had been on a diet for Bright's disease.

Examination shows the right kidney slightly enlarged and its inferior pole palpable. The mass has slight respiratory mobility. The blood count is normal. The patient is tall and slender and has an asthenic habitus.

Cystoscopic and x-ray examination were as follows: Kidney shadow low on right, urethra and bladder normal, orifices normal. Left kidney normal as to function and urinalysis. Right kidney, no obstruction to number six catheter. Free urine flow, urine slightly cloudy, contains small amount pus and few colon bacilli. Pthalein excretion 5 per cent in 15 min. Uretero pyelogram—8 c.c. of bromide injected without pain, kidney low, pelvis dilated and deformed, ureter shows several kinks throughout its entire length. Films with patient in dorsal and erect postures show moderate mobility of kidney.

The patient was advised to eat fat producing foods, the knee chest position was used three times daily and a snug abdominal binder was worn. Every ten days the right pelvis was irrigated with 1 per cent silver nitrate solution or 1 per cent mercurochrome. She has been greatly benefited but is still under treatment.

The degree of ptosis and pyelonephrosis and the low phthalein output would make it probable that a nephrectomy would eventually be necessary. Proper measures instituted two or three years ago might have saved this kidney.

Case 2. White female, aged sixty-two, small stature, weight 93 pounds. Past history negative except for urinary tract. For twenty-five years the patient has had considerable backache and pain in her right lumbar region. She had no severe attacks and no hematuria. She has had nocturia for twenty years. Twenty years ago she was told that her right kidney was movable.

Four days ago she developed an acute attack of severe pain in the right lumbar region, the pain radiated to the bladder. Her right side became tender and ached continually, she had chills and high fever and was very ill.

Examination showed a large mass in the right lumbar and iliac quadrants, it was tender, irregular and moved slightly with respiration. Cystoscopic and x-ray examinations were as follows: Urethra negative, bladder normal, right ureteral orifice red and closed, no swirl of urine seen. Catheter obstructed at distance of 5 c.m. on right, 10 c.c. of very purulent urine drained rapidly. The urine on the right contained albumen and pus in large quantities and mixed bacteria. Differential functional test was normal on left, no dye was returned in fifteen minutes from the right. A pyelogram was made using 15 c.c. of bromide. The kidney was markedly ptosed the ureter showed much kinking and the pelvis was greatly dilated and deformed.

Following the drainage by ureteral catheter the patient was relieved of her acute symptoms. Nephrectomy was advised. She was not seen again. Proper mechanical or operative procedure twenty years ago would no doubt have conserved the kidney and saved the patient from much discomfort.

Case 3. White female, age thirty, married, three children. Health always good. Past history negative. Patient has always been slender and undernourished.

In the past four years the patient has had six acute attacks characterized by severe, colicky pain in her right lumbar region, the pain radiating to her bladder. The attacks were accompanied by frequency and dysuria. During one attack she had a slight hematuria. She has had some fever but no chills. The attacks last from three to ten days and confine her to bed.

Between the acute attacks she has more or less constant dull pain in her right side which is worse after riding or working. She has nocturia one to three times and some burning. She was told a year ago that she had a movable kidney. In the past six months she has gained 12 pounds in weight and has felt much better.

Examination shows a tall, slender female of asthenic habitus. Physical examination negative

except for a palpable right kidney, the lower pole being felt on deep inspiration. A catheterized specimen of urine was normal.

Cystoscopic and x-ray examinations were as follows: Kidney shadow low on right, urethra and bladder normal, left kidney normal. Right kidney—urine normal, function normal, ureteropyelogram using 8 c.c. of bromide, kidney low, pelvis slightly dilated and deformed, ureter kinked just below uretero pelvic junction. Kinking increased with patient in erect position.

With proper diet, rest, knee chest posture and an abdominal binder the patient has been entirely free of symptoms for two years.

Case 4. The following case, that of a male fifty-seven years of age, was the only case of movable kidney encountered in the male sex. Patient was married, a butcher and farmer by occupation. His past history was negative except for the urinary tract.

For twenty-five years the patient has had a nocturia from three to five times and a slight day frequency. He had no other symptoms except for an occasional backache. About two months ago he developed a dull aching pain in his left lumbar region, the pain did not radiate and he had no colic. The pain was worse when riding. The pain continued for ten days but was not severe.

Three weeks ago the patient developed a very severe pain in the left kidney region, it was colicky and lasted several hours. His abdomen became distended. The pain radiated to his bladder but he had no urinary symptoms. He gradually improved but remained in bed for one week. About one week ago the pain began and he developed a fever of two to three degrees. He also had frequent chills and sweats and developed tenderness and swelling over the left kidney area. The urine was scant for several days and contained some pus and many casts but no blood. On admission to the hospital the patient was having fever and chills each day and was delirious at times. The urine measured one liter in twenty-four hours. His pain was not severe.

Examination shows a tall, undernourished, acutely ill male, he is conscious and rational. His tongue is dry and coated, his lungs are clear and heart normal. His abdomen shows moderate tenderness and rigidity in the left upper, middle and lower quadrants. A mass is felt, there is tenderness along the course of the ureter.

During his hospital stay his temperature varied from 100 to 103 degrees and his white blood count from 12,000 to 34,000. Urinalysis on repeated examinations showed a sp. gr. of 1010 to 1015, albumen one plus, pus one plus and many granular casts and mixed bacteria. His blood chemistry was as follows: non-protein nitrogen 82 mg., urea 166.0 mg., creatinine 4.9 mg. per 100 c.c. of blood.

Cystoscopic and x-ray examinations were as follows: Left kidney shadow low and enlarged, urethra and bladder normal, left ureteral orifice gaping. Urine from the right kidney was clear and contained many casts but no pus. There was no methylene blue in the urine from the right (the patient had been given methylene blue by his physician). The urine from the left was cloudy, and contained albumen and pus, it was very dark blue. A pyelogram was made using 24 c.c. of bromide. The kidney was very low and the pelvis markedly dilated and deformed. Films taken with patient in the erect and dorsal posture show kidney fixed and ureter tortuous and dilated. Six ounces of urine drained in 15 min. while one-half ounce was being obtained from the right.

The left ureteral catheter was left in place for five days and the pelvis was irrigated daily with one-fourth per cent mercurochrome solution. The drainage of urine was free. The catheter became blocked with salts on the fifth day and was removed. Following the cystoscopic and drainage the patient's fever, chills and pain left and he felt much relieved.

On the eighth day the patient had a severe chill, his temperature reachd 104 dgrees, and he became irrational and very ill. The tenderness over the left kidney increased and the urine decreased in quantity. The left ureter was catheterized again and the catheter left in, drainage was free. After two days the patient was rational and afebrile again and his general condition had improved. After three days the catheter was removed.

The patient's condition slowly improved and in three weeks he left the hospital feeling very well. His combined phenophthalein varied between 5 and 10 per cent in two hours and was 10 per cent on discharge.

The patient was apparently suffering from a left movable kidney which was markedly ptosed and a subsequent hydro and pyelo nephrosis had developed. Adhesions about the pelvis no doubt made it a fixed organ but the kinking of the ureter shows it to have been a movable kidney. The right kidney showed a severe chronic nephritis. From the findings, the left kidney was carrying on most of the secretion, and so long as it drained freely he felt well. When the ureter became blocked the uremia, chills and fever resulted.

The patient's general condition made operative fixation out of the question. He was advised to wear an abdominal binder, to assume the knee chest position several hours daily and to remain on his diet. He has been able to be up and about and has felt fairly well the past five months.

The recent election of Dr. Wendell P. Phillips to the presidency of the American Medical Association was by unanimous vote. This is the first time in the history of the Association that a president has been thus elected.

This is a recognition of the valuable services Dr. Phillips has rendered to the Association and to the profession of medicine.

A PRELIMINARY REPORT ON THE EMPLOYMENT OF THE BUFFER SOLUTIONS IN ACID INTOXICATIONS AND ACIDOSIS*

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This report is the result of a suggestion made to the writer by Dr. E. B. Howell of Ottumwa, Iowa, who in June, 1923, had a case of hemorrhagic nephritis in one of the hospitals of Ottumwa, which he suggested be treated with an intravenous alkaline solution. The recovery of this case encouraged Dr. Howell and his support of the intravenous administration of the alkalies led to the use of them by some of the physicians of the community. The writer wishes to thank the physicians of the community for their support. Likewise the writer is indebted to Dr. A. Itano, formerly of the Massachusetts Agriculture College, and wishes to thank him for the teaching in the construction and the operation of the hydrogen ion apparatus. And also the preparation of the buffer solutions which are the basis for such success as has been attained with the intravenous administration of them in the treatment of acidosis.

Cammage in his studies of the chemical content of the blood of persons affected by acidosis showed a depletion of the calcium, the magnesium, the phosphates, the sodium and ammonia. This disturbance of the chemical balance of the blood is first observed in the plasma and later the corpuscles. The disturbance of the alkaline content of the blood is, we are taught, at this time due to impaired metabolism. Consequently it is necessary to conserve the foregoing chemical substances in acidosis by employing salts containing them therapeutically.

The reader if he so desires, will find an abundance of literature at this time relative to the cause and the treatment of acidosis by clinicians, biochemists and the physiological chemists. Consequently the writer will not discuss the subject clinically, or chemically. However, with the method which is employed in this work the hydrogen ion apparatus is employed for the determination of the pH of the urine and the buffer solutions.

In the beginning the Van Slyke apparatus was employed for the determination of the CO2 combining power of the plasma. The results obtained with this method were excellent. In order to observe the effect of the buffer solutions on the CO2 combining power of the plasma, several specimens of the blood were desired for this determination. The relatives of some of the patients objected to the repeated collection of blood for this purpose and this method was discontinued, as the writer wished to employ one method for all cases. Hence the urine was selected for the determination of the acidosis. Henderson in his studies of the urine found it ranged in its pH from 4.80 to 7.50. The average of these readings is 6.15 and it is this reading which the writer considered as normal. The biochemist and the physiological chemist no doubt will disagree with the writer that the pH of urine is not an accurate index for the determination of acidosis. No doubt in part they are correct. However the writer found that for practical work this method has served its purpose.

The technique employed for the pH determination of the urine is as follows: The bladder of the patient is emptied either volitionally or with the catheter. And the specimen is collected in a chemically clean sterile bottle or flask, and is stoppered with a cork. As soon as possible after the collection of the specimen it is sent to the laboratory for titration. The bladder is again emptied just before the buffer solution is given intravenously, this specimen is not preserved for titration. Thirty minutes after the buffer solution is given a sample of the urine is collected as previously described and sent to the laboratory for titration. Three consecutive specimens of urine are collected at one hour intervals and are sent to the laboratory for titration. All of the urine collected for the remaining twenty-four hours is collected in separate bottles and is sent to the laboratory for titration to determine its pH value. With the foregoing method one has a fairly good index of the alkalinity of the urine which serves as an aid in the alkalinity of the whole blood.

In these studies the pH of the solutions varied from 7.00 to 7.80. The solutions having a pH of 7.80 showed no more of a reaction than the solutions having a pH of 7.00. Learning this, the pH of all solutions were standardized to a pH of 7.00, no matter what the gram content of the solution was made. The mean average of the buffer solutions given was a total of twenty grams which represented sodium bicarbonate, disodium phosphate buffered with monopotassium phosphate to a pH of 7.00. These salts were dissolved in five hundred cubic centimeters of fresh sterile distilled water which contains enough sodium chloride to make the total volume a normal salt solution.

*Presented before the Seventy-Third Annual Session, Iowa State Medical Society, Des Moines, Iowa, May 7, 8, 9, 1924.

On the completion of the preparation of the buffer solution the next step is that of placing the two-way glass stop cock, which is supported by a pure gum rubber cork, in the mouth of the flask, after which the rubber tubing is attached to the free ends of the glass tubing, one of which connects the syringe with the contents of the flask and the other connects the syringe with the glass connection to which the hypodermic needle is attached. This step is followed by the venus puncture which is made in the usual manner. The contents of the flask are now dispatched from the flask into the vein. The usual time required for an intravenous administration is from twenty to thirty minutes.

The reaction following the intravenous administration of the buffer solution varies in the time of its onset, its duration and severity. A favorable reaction is characterized by a chill which is accompanied by a fever, which in several instances has reached 107° F. The fever does not remain at this point for any length of time, for as soon as the chill begins to subside the fever begins to fall. The cessation of respiration has occurred several times and is momentary. Nausea and vomiting also occur. The pulse may or may not be accelerated. The blood-pressure seldom shows a change. When the chill has subsided the body of the recipient feels warm and the skin moist to the hand.

Three consecutive doses of the buffer solution are given twenty-four hours apart. If at the end of twenty-four to forty-eight hours after the last intravenous administration the improvement of the patient is not as clinically anticipated, the treatment is repeated for three more doses as previously described. Thus far no evidence of injury has been presented by the recipient of the buffer solutions. But on the contrary they have been benefited with them.

The following tabulation is compiled from cases treated up to the time of reading this paper.

Affections Treated in Part or Alone with Buffer Solutions

Diabetes—Recoveries, 4; deaths, 2.

Erysipelas—Recoveries, 6; deaths, 1.

Eclampsia—Recoveries, 1; deaths, 2.

Puerperal Sepsis—Recoveries, 4; deaths, 1.

Vomiting of Pregnancy—One case, no improvement.

Pneumonia—Recoveries, 2; deaths, 3.

Nephritis, All Types—Recoveries, 6; deaths, 2.

Pyonephrosis of Pregnancy—No reaction, patient recovered.

Streptococcus Sore Throat—Recoveries, 3; deaths, 0.

Pyelitis—Recoveries, 1; improvement, 1.

Streptococci Pyemia—Recoveries, 1; deaths, 1.

Peritonitis, Mixed Infection—Recoveries, 1; deaths, 3.

Following Appendectomy—Recoveries, 7; deaths, 4.

Hysterectomy—Recoveries, 2; deaths, 1.

Cholecystotomy—Recoveries, 1; deaths, 1.

Cholecystectomy—Recovery, 0; deaths, 1.

Miscellaneous Cases

Streptococcus Pyemia with Pyonephrosis—One case recovered.

Streptococcus Empyemia with Pyonephrosis—One case improved, then died.

Streptococcus Peritonitis with Pyemia—One case died.

Pelvic Abscess Following Delivery—One case recovered.

Preoperative for Ruptured Gall-Bladder—Recovered.

Preoperative for Exophthalmic Goiter—One case recovered.

Scrotal Abscess—One case died.

Ruptured Pancreas—Operated, recovered.

Volvulus—Operated, recovered.

Prostatorrhea—Operated, died.

Suprapubic Drainage—Died.

Strangulated Tube—Operated, recovered.

The patients reported in preceding tabulation were desperately ill with the affection tabulated and in addition presented the symptoms of acidosis clinically which was substantiated by the titration of the urine. Hence the writer feels justified in presenting this report at the time of reading it before this State Medical Society.

Conclusion

1. The writer does not wish to infer that a specific has been found for the treatment of acidosis.

2. Acidosis in the past has been treated with bicarbonate of soda alone.

3. Instead of using bicarbonate of soda alone the writer believes that one should employ such salts which have been shown by chemical analysis of the whole blood to be deficient in acidosis. Hence the reason for the buffer solutions in the treatment of acidosis.

4. By employing the buffer solutions one can increase the gram content of the solution without increasing the alkalinity of the solution beyond the alkalinity of normal blood.

The sum of $765,108 has been bequeathed to Harvard University, Boston, under the will of Mrs. Anna Milton to be used for increasing salaries of professors and instructors.

SPLENIC ANEMIA*

W. D. RUNYON, M.D., Sioux City

The infrequency of splenic anemia of infancy in children over three and one-half years of age[1] prompts the reporting of the following case and a review of the recent literature in regard to the same.

Charles R., age three and one-half years, was admitted to the hospital February 7, 1924, his parents having noted a progressive weakness accompanied by anorexia, nausea and a complaint of pain through the left flank dating from an acute illness of short duration and indefinite character two weeks previous. For the past week, he has been drowsy, taken very little food. vomits at times and is very irritable. He has never been acutely ill with the exception of a lobar pneumonia in January, 1923, from which he recovered slowly.

The father, mother and one sister are living and well.

Examination shows chronically diseased tonsils and a palpable spleen.

Laboratory findings—Hemoglobin 35 per cent, red blood count 1,650,000, white blood count 18,400. Differential count, polymorphonuclears 66 per cent, lymphocytes 29 per cent, mononuclears 2 per cent, eosinophils 2 per cent, basophils 1 per cent. Urine, negative.

He was placed on iron with forced liquid diet. On the second day there was a decided drop in the red blood count. Iron was replaced by arsenic and he apparently improved, a gain of one million being noted on the seventh day. A positive blood Wassermann being reported in the meanwhile, he was placed on inunctions of mercury. The nausea became more noticeable, nourishment refused and the condition on the thirteenth became grave, the red blood count being one million, the white blood count 22,900 and the hemoglobin 25 per cent. Patient became comatose. One hundred and seventy-five c.c. of blood was given (Lindman's method) resulting in a prompt recovery in the red blood count and the patient was dismissed March 2, 1924, with a normal blood count which remained so until March 29, 1924, when he was re-admitted to the hospital. The hemoglobin at this time was 45 per cent, the red blood cells 2,280,000 and the white blood cells 12,900. Two hundred and thirty c.c. of blood raised his count to normal within three days. Splenectomy was considered at this time, but in view of his rapid recovery, further observation was decided upon. The red blood count remained normal for ten days when a drop was noted. He was again transfused, a splenectomy being done the following day, April 16, 1924, (R. Q. Rowse).

Pathology (Doctor Starry) of spleen shows some fibrosis and hyperplasia of the endothelium.

Subsequent condition — The red blood count dropped one quarter million the second day following operation. Seven days later, the hemoglobin was 70 per cent, the red blood count 4,800,000. Patient improved steadily, wound healed promptly and he was dismissed April 30, 1924, with a hemoglobin of 65 per cent, red blood count 4,650,000, white blood count 8,200. Differential count, polymorphonuclears 20 per cent, lymphocytes 77 per cent, large mononuclears 2 per cent, eosinophils 1 per cent, reds normal. Blood Wassermann, negative. Urine, negative.

Discussion: The blood picture presented leads us to classify the case as one of splenic anemia of infancy. The predominence of lymphocytes accounted for by the reaction of the blood of early life to toxins. "Giffin has called our attention to this fact and further states that infancy is a transition period in which there may be a reversion to the fetal type of haemopoiesis, accounting for the variation in type."[2]

The etiology is unknown.[3] Cases are recorded of specific etiology responding to specific treatment.[4] "Carpenter in a review of three hundred forty-eight patients with splenomegaly under twelve years of age, placed rickets first and syphilis second in the etiological role."[5] "Carr draws attention, however, to the following facts: First, that in the majority of rickety children there is no splenic enlargement; second there is no connection between the severity of rickets and the size of the spleen or the degree of anemia; third that in certain cases of splenic anemia of infancy there is no evidence whatever of rickets."[6]

"Giffin in commenting on Carr's observations, states the general experience seems to indicate that, granted the frequent association of rickets, there are yet certain cases which, on account of their marked splenomegaly and their severe anemia, their evidences of extensive blood destruction, and a reversion to the fetal type of hæmopiesis should, for the present at least, be grouped together as a separate disease entity."

"Chaney reporting sixty-nine cases of splenic anemia states in connection with the laboratory findings that the Wassermanns were negative in fifty-nine cases out of sixty instances, the one positive being discredited by four subsequent negatives."[7]

"Wentworth concludes that splenic anemia of infancy is a secondary anemia and in no way related to leukemia."[8] Byfield classes splenic anemia of infancy as one of the spleen-liver syndromes stating the etiology of the v. Jaksch type of infantile anemia is quite unknown.[9] The blood picture suggests a stormy reaction of the bone-marrow, both leukopoietic and erythropo-

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ietic[10]. Inasmuch as the disease is generally associated with or follows an infectious or toxic process, it is fair to assume that infection or toxemia, or both, play an important role in producing the condition. By some observers[11] v. Jaksch's anemia is regarded as the infantile form of splenic anemia, the unusual blood picture being attributed to the unstable bone-marrow equilibrium characteristics of early life. In this type of anemia, splenectomy seems rational in certain instances. Many cases, as we have been told go on to a good recovery under medical measures alone. In those cases, however, who do not improve after fair medical regime in which the anemia progresses and the splenic enlargement increases, removal of the spleen is definitely to be considered. These are the cases which touch shoulders with the group in which splenectomy is clearly advisable—the toxic—infectious hepatosplenic enlargements. In the Banti group of diseases, splenectomy is particularly indicated if the etiology is obscure, but even in cases in which the cause can be determined syphilis, tuberculosis, malaria, focal diseases elsewhere—if proper specific therapy proves unavailing, the operation is still indicated if the spleen stands out as the central point of the toxic-infectious picture.[12]

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Discussion

Dr. Aldis A. Johnson, Council Bluffs—The classification of anemias in childhood is a most difficult one. It is quite different from the picture we see in the adult. Twelve years ago a reputable surgeon of Omaha did a gastroenterostomy on a woman for severe hemorrhage. Seven or eight years ago I saw this patient and there was present a marked splenomegalia with anemia of a secondary type. W. J. Mayo later did splenectomy with good recovery. Three years later she died and autopsy showed a very marked lymphangiophlebitis of the spleen with the mesenteric vessels and the portal circulation being almost obliterated. I think that is the general picture of splenic anemia. Dr. Runyon has tried to find the cause of the anemia in his patient, if he had found the cause it would not have been splenic anemia. A case showing leukopenia with splenic enlargement and secondary anemia running over a long period without a known cause, would suggest splenic anemia. Dr. Runyon found that at one time his patient had a positive Wassermann. In some of these anemias, I do not know the cause, we find a positive Wassermann, not syphilis, but there is something in the blood that gives this reaction. This child had a leucocyte count of 20,000 to 22,000, a little unusual, but the picture in children is different from that in adults. It is common to find in adults a leucocyte count of 7,000 to 8,000 in cases of splenic anemia, and it may go as low as 500. I think that in this case the infection is a factor which must be considered. As we work a little more carefully in bacteriology we may find the cause of these conditions. With infection in the veins along the splenic vessels we find in the spleen this atrophic condition of the Malpighian bodies, we find marked fibrosis, thickening of the capsule, and observers at the Mayo Clinic have demonstrated on some of these cases that there is a low grade infection. We may in these cases have an atrophy of the liver or we may not have atrophy of the liver, it is not the common picture. These cases usually run a chronic course. First we may see a child or an adult with anemia and by accident discover an enlarged spleen, and find that the patient has had some pain in the side. This we consider the first stage of the disease. In the secondary stage the spleen is more enlarged and the hematemesis may be more marked, the anemia may be more profound, the leukopenia is quite constant. In the tertiary stage the symptoms become very much more marked and the patient usually dies from an extensive hemorrhage or inanition.

Dr. Julius S. Weingart, Des Moines—This presentation illustrates very well the difficulty we have in classifying the anemias. As you all know, we see very few cases of anemia in which we can lay our finger on the cause, and as long as the etiology of many forms of anemia is so obscure we will find cases that cannot go into any category. So for clinical purposes we do the best we can to classify them in syndromes. If a patient shows symptoms of an enlarged spleen, with gastric hemorrhage later and an enlarged liver, we call it Banti's disease. If we get a positive Wassermann we say that the anemia is syphilitic, at least it is called that until proved negative. Remembering that all our therapy is going to be influenced by what we find as the cause of the anemia, and also remembering well that there are some anemias that we cannot classify, that are not in the books, the thing I would emhpasize from the study of a few recent cases is this: When you find an unexplained anemia you must not rest until you have found a cause, if possible. Two recent cases: (1) A woman came in with an anemia, the only thing she complained of. She was sent to the hospital, was examined thoroughly, and nothing was found. Only one

thing was omitted, which I regretted afterwards—a barium enema had not been given. Otherwise the fluoroscopic examination was negative. Six weeks later in the course of a routine physical examination a carcinoma of the colon was found. (2) A young woman with unexplained anemia and whose physical examination was negative, did not improve under treatment, and in the course of a physical examination there was found a large rapidly growing fibroid of the uterus which had been missed or was so small it was not found at first examination. In all these cases the only sure thing to do is to examine the patient at regular intervals, and I have determined that I will do a routine examination every three weeks, or every month at least, while such cases are under observation. Let us remember that there are just a few conditions in which removal of the spleen is curable. In splenomegalia due to syphilis, treatment does not do any good unless the spleen is removed. In hemolytic icterus, splenectomy is curative, and also, from recent reports, in hemorrhagic purpura, because these are both diseases of what we call the reticulo-endothelial system.

Dr. Runyon—I wish to thank Dr. Weingart for his kindly discussion of my paper and I agree with him to a certain extent in the practical application of therapeutic measures in cases of this kind. It seems to me we are rather forced, as the doctor has just pointed out, to be doing something different at the very least and it would seem we are not advising removal of enough spleens in this type of syndrome. There is one point which I wish to emphasize which I failed to do previously and that is the fact that the positive Wassermann disappeared after splenectomy or rather after treatment. Repeated Wassermanns on several members of the immediate family gave negative results.

WHAT AND WHEN TO EAT*

J. A. PINKERTON, M.D., Traer

Almost the very first part of the human embryo to be formed is probably the alimentary canal and this system of food circulation is set up before aught else is developed. The most vital, important, and irrepressible question in the world is: What and how to eat.

Hunger has been the motive force of civilization. The civilization and moral rank of a people are best measured by the variety, cleanliness, and abundance of its food supply, and the cook books are a greater force for right than all the criminal laws. Our sacred three square meals a day are simply coaling stations arranged at such intervals that we can run at good speed from one to the next on the load which can be comfortably engulfed at one sitting, this distance being about five hours. Other than that there is nothing in the slightest degree sacred or healthful about them, nor any merit whatever in adherence to them with strict regularity.

On the contrary, our stomachs, instead of requiring nourishment only at regular widely spread intervals, are geared for a continuous performance, and from the point of view of health alone, we should eat whenever and only whenever, we feel hungry. It is only fair to say, however, that, from the nature of the reason which led us to fix our meal times about five hours apart, average healthy men and women, engaged in fairly active work, will find that they burn out and feel empty about every five hours of their waking day. Do not hesitate for a moment to piece between meals whenever you feel really hungry. Indeed it is a good thing to take a glass of milk or a cup of hot bouillon in the middle of the morning. Intelligent employers and industrial commissions found that afternoon tea served to workers in shops and offices not only did not lessen, but actually increased their output, and sent them home at the end of the day in a less fatigued condition and a happier frame of mind. A hot cup of tea or bouillon at five o'clock puts the tired business man in trim to clean up his desk and get his letters signed and off in good shape, and does not leave him craving a cocktail or small whiskey as a pick-me-up before he can start on his way home.

Children should always eat between meals, because their stomachs are not big enough to hold the amount required to drive them for five hours at a stretch, living as they do at concert pitch, with their incessant effervescence and delight in activity, as if they had discovered the secret of perpetual motion. A good mid-morning lunch should be provided for them: sandwiches, milk, cocoa, cookies, nuts and apples. Ten years ago the superintendents of some of our city schools in the poorer districts, finding that many of the children came to school on extremely poor breakfasts, prepared a hot lunch at ten o'clock of soup, bread, milk and cookies, with the result that the children improved greatly, not only in health, but in progress in their studies. Now the best schools all over the country, even in the aristocratic suburban regions of New York City and Boston, provide certified milk at cost price at ten o'clock every morning, with all the crackers the children care to eat with it, or else salted nuts, sandwiches and apples. When at four o'clock or whenever the children come home from school, there should be another lunch provided for them.

Two things must be borne in mind. One is

*Read before the Tama County Medical Society.

that children, though they need far more food in proportion to their weight than grown people do—a hearty growing boy or girl of ten to fifteen needs as much as a grown man—are often rather limited in their tastes. The other is food poisoning or anaphylaxis. Milk, bread, bacon, toast or crackers, butter, potatoes, one kind of meat or fish, puddings, or cakes and one or two kinds of fruit, either fresh or cooked, make up their entire diet. They neither want nor require half the variety which we do. One reason is that their stomachs are so small that they have room only for real, rather concentrated foods, growth foods, such as are all those that have been enumerated. Coarse vegetables such as cabbage, cauliflower, turnips, carrots, parsnips, etc., should never be forced upon children. They consist chiefly of water with a little starch or sugar, some vitamines and salts and large masses of woody fibre. This is especially true of cabbage and turnips, they are excellent cow feed, but as indigestible in a child's stomach as so much sawdust or hay. If he refuses to eat them he simply shows his good sense and the superiority of the "wisdom of babes". Later in life when his stomach has grown he'll perhaps learn to tolerate such cow fodder, but, like most of the rest of the things we laboriously and conscientiously teach him, it will have added nothing to his real wisdom and happiness. He knew better in the beginning and does yet.

When we fit our systems of education to the child, instead of the child to the systems, we shall get real education and not before. The emphasis of modern up-to-date dietetics has shifted over completely. No one bothers about mere bread, because almost anyone can get plenty of it or its cheaper equivalent in rice, cornmeal, or potatoes. In fact, most people today, especially workers, eat a great deal too much bread or other cheaper starches, and our problem is to eat less bread and cheap starches and more milk, butter, meat, fruits, and green vegetables.

Among the working classes in England and in our own great cities and factory towns, there is actually a great deal of bread-and-jam-and-coffee, or bread and margarine-and-tea anemia from living too exclusively on this most unwholesome cereal. "Eat less bread" should be our slogan, and more milk, meat, bacon, fruits, and green vegetables. The troops that ate the most and the least bread—the New Zealanders, the Australians, the Canadians, and our own doughboys—made the finest shock troops in the war. And when Germany began to run out of meat, animal fats, milk and cheese for her shock troops her doom was sealed, though she had enough bread, starch, and vegetable oils right down to the Armistice.

The death rate from tuberculosis in Austria and Germany is treble what it was before the war for lack of meat, bacon and butter. All the silly old prejudices against meat, that it heated the blood (whatever that meant), produced urice acid in excess, hardened the arteries, inflamed the kidneys, caused rheumatism, etc., have now been proved to be pure fairy tales, utterly without foundation in scientific fact. Red meats have nothing whatever to do with uric acid. Nor have they anything to do with causing gout or rheumatism, because neither of these diseases is due to foods or drinks of any sort, solely to what we call focal infections—little pockets of pus full of robber germs, mostly streptococci—around the roots of our teeth in the pouches of the tonsils, in the nasal passages and the sinuses opening into them, even in ulcers of the stomach and bowels, around an inflamed appendix or gall-bladder, sometimes even around an inflamed ingrowing toe nail, or a painful bunion or suppurating corn. Our belief now is—no pockets of pus, no rheumatism or gout. Food of any sort has no more to do with the case than the flowers of spring. It is quite true that meat leaves in our blood a considerable amount of waste substance called urea, but is a perfectly harmless non-poisonous waste product.

The very worst cases on record in all medical history of hardening and turning to lime of the arteries all over the body, in the kidneys and intestines particularly, have been found in trappists and certain orders of Oriental monks, who live almost exclusively upon starch, peas, beans and lentils, and abstain from meat entirely. Their bodies are so full of lime that they are like walking corral reefs for months before their death. The same condition of bean "ossification" is found in many Egyptian mummies who lived chiefly on grain (wheat, millet or rice) and lentils.

The recent vogue of chocolates, which has made whole new mountain ranges of bars and packages at the candy stores, has created a few new problems in dietetics. It has gradually submerged all our old favorite confections under an umber flood and only allowed them to emerge again in a strange new coat of fragrant brown—from bon-bons to Eskimo pie. As usual there is a good solid basis for the popular affection. Chocolate, especially when mixed with vanilla and sugar, has a goodly amount of carbohydrate, and rich, though slightly indigestible deposits of fat. In fact, it is an extremely explosive and

pugnacious article, and violently disagrees with many people, hence if a child shows any marked lack of enthusiasm for cocoa and chocolate it is best not to force them upon him. It is a very compact, concentrated food, of high value for its bulk, which gave it a place in the famous "iron ration" of the late Prussian army, and when digestible is admirable, but it has its defects as well as its virtues.

IOWA INSTITUTION FOR FEEBLE-MINDED CHILDREN AT GLENWOOD, IOWA

D. S. FAIRCHILD, M.D., F.A.C.S., Clinton

Through the courtesy of Dr. George Mogridge, the present superintendent, we have been able to collate data for an outline history of this important institution.

Like so many of our public welfare institutions for the betterment of the unfortunate members of society, the inception of this one emanated from the broad and liberal mind of a member of our State Medical Society.

In 1873 Dr. W. S. Robertson of Muscatine became impressed with the number of idiotic and imbecile persons in Iowa, commenced a series of investigations to ascertain their number, condition and needs, which he embodied in his presidential address before the Iowa State Medical Society in 1874. This is probably the first public plea in the interest of feeble-minded in Iowa. It may be noted that Dr. Mark Ranney, while superintendent of the hospital at Mount Pleasant, made an effort before the Eleventh General Assembly in 1866 for the relief and benefit of idiotic and imbecile persons in Iowa.

Without accurate census data Dr. Robertson estimated that in 1873 there were at least 1200 idiots and imbeciles in Iowa. At the close of Dr. Robertson's impressive address, the State Medical Society passed a resolution in favor of the establishment of an institution by the state for the care and training of the feeble-minded in Iowa. Dr. Robertson also made a strong plea before the legislature.

On the first day of February, 1876, Hon. C. C. Horton, member of the House from Muscatine, introduced House File No. 240, which was "A bill for an act to provide for building an asylum at Glenwood, Mills county, for the idiots and feeble-minded of the state". After reference and amendments, it finally passed both the House and Senate, and the act was approved by Governor Kirkwood March 17, 1876.

During this struggle to secure an act to provide an institution for the feeble-minded in Iowa, Dr. Robertson availed himself of the advice and aid particularly of Dr. C. T. Wilbur, superintendent of the Institute for Feeble-minded Children for the State of Illinois.

"The above institution was organized July 1, 1876, under an act passed by the Sixteenth General Assembly of Iowa creating the same. This enactment was modified somewhat by the Nineteenth General Assembly, and the information as to eligibles is taken from the laws of that session.

"The law of the aforesaid Nineteenth General Assembly recites that 'every child and youth residing within the state within the ages of five and eighteen years who, by reason of defective intellect is rendered unable to acquire an education in the common schools, is entitled to receive the physical and mental training and care of this institution at the expense of the state. The county superintendent in each county, on the first day of October to report to the superintendent of the institution the name, age, and post-office address of every person in his county of such age who, by feeble mental and physical condition is deprived of a reasonable degree of benefit from the common schools. And also to give the name and address of parents, guardian, or nearest friend of such person'.

"During the first years of the life of the institution there were received eighty-seven children; at the end of ten years the population was 259, 164 males and 95 females; at the end of twenty years a total of 574, 334 males and 240 females; at the end of thirty years a total of 1038, 565 males and 473 females; at the end of forty years a total of 1409, 733 males and 676 females; at the present time, forty-eight years after its establishment, the inmate population is 1539, 749 males and 790 females. Of this grand total there are enrolled in the school classes about six hundred, the others being enrolled in what is termed the custodial division.

"The present school force consists of seventeen teachers, and the branches taught include the usual academic work, vocal and instrumental music, domestic science, physical training, manual work of all kinds, including sewing, fancy needle work, basketry, lace making, etc., for the girls, and for the boys bench work, and making of heavy baskets. Later in their training the children take part time school work, and are also instructed in laundry work, general household duties, cooking, serving, etc., for the girls, and for the boys cobbling, carpentry, painting, printing, gardening, etc. Others who have passed

through the entire school period where they have been instructed by ordinary methods, are gradually brought into fuller activities by being detailed to the various departments of the institution, where they assist in the economy of the same."

The bill passed and signed by Governor Kirkwood March 17, 1876, provided: First, for the establishment of an asylum for feeble-minded children to be located at Glenwood on property already owned by the state. Second, the purposes of this institution are for the care, support, training and instruction of feeble-minded children. Third, it provided for the appointment of a board of three trustees, and for the appointment of a superintendent and other resident officers. Fourth, the age of admission to be between seven and eighteen years, and defines the method of obtaining admission. Fifth, it provided a support fund of $10 per capita, per month, and in addition the sum of $2,000 for salaries and wages, also for certain sums for the purpose of securing furniture, repairing buildings and other incidental expenses.

On March 15, 1876, a joint convention of the General Assembly elected the following named gentlemen as trustees: Dr. W. S. Robertson of Muscatine, A. J. Russell of Glenwood and Jonathan W. Cattell of Des Moines. These trustees convened at Glenwood April 26, 1876, and effected organization as follows: Dr. W. S. Robertson, president; A. J. Russell, treasurer, and J. W. Cattell, secretary. The board of trustees then took possession of the property set aside by the state; it being the property heretofore held and occupied by the Western branch of the Iowa Soldiers' Orphan Home.

The condition of the property was bad and extensive repairs were necessary for use as an asylum. After the buildings had been repaired, the next step was to secure a superintendent, and the trustees selected Dr. O. W. Archibald of Glenwood, who had formerly been an assistant physician at the Mount Pleasant Hospital for the Insane. He was also made secretary on the resignation of Mr. Cattell. Mrs. S. A. Archibald accepted the position of matron.

Early in 1882 Dr. Archibald resigned as superintendent and Dr. F. M. Powell of Glenwood was elected to fill the vacancy. Previous to the resignation of Dr. Archibald efforts were made to secure the removal of the institution from Glenwood, but failed.

In 1903 Dr. Powell died and Dr. George Mogridge, the present superintendent, was elected.

The history of this institution has been full of interest as showing the difficulties that lie in the way of securing legislative appropriations for the care of the unfortunate in the earlier days of the state, when economy was necessary and when the representatives of the people were slow in voting money for almost any purpose which would impose taxes upon a people who were impatient of burdens which could be avoided.

It is also of interest to observe the ready response of members of the medical profession in securing benefits for the unfortunate members of society who were physically and mentally unfit to meet the conditions of our complex civilization.

IOWA STATE MEDICAL LIBRARY

The Medical Department of the Iowa State Library is for the use of physicians all over the state. Books or periodicals will be furnished, direct or by mail to anyone who asks for them.

Bibliographies on special subjects will be prepared and available literature furnished. Any material not obtainable at this library will be borrowed from the Surgeon General's Library at Washington, D. C. The borrower is expected to pay the transportation on the books both to and from Washington.

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Francis B. van Zandt,
Medical Librarian.

Iowa State Medical Library,
Historical Bldg.,
Des Moines, Iowa.

Under the will of William Wellington of Boston, a bequest of $50,000 has been made to Harvard Medical School for research in the etiology and therapeutics of diseases of men.

The Journal of the Iowa State Medical Society

DAVID S. FAIRCHILD, Editor ..... Clinton, Iowa

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INSURING LIVES WITHOUT MEDICAL EXAMINATION

It is an important fact to medical men that life insurance companies have been paying from $10,000,000 to $15,000,000 a year to medical examiners, and such service has been a source of considerable income to doctors. It is, therefore, to be presumed that the plan of issuing policies without a medical examination will be of interest to our readers.

The activities of the medical profession in developing better health conditions will no doubt be of material aid to insurance companies which adopt the non-medical plan, and the periodic health examinations now proposed will be a further aid. The immense value of life insurance is so well known and appreciated by thinking persons, that any plan which will increase this desirable provision for welfare and safety, will be welcomed, even if it be at a considerable loss to medical examiners. The plan will not wholly eliminate the medical examiner, but will no doubt change his relations to the companies he serves.

To place this matter before the profession from the insurance companies' point of view, we are printing an editorial published in "Hooper-Holmes Bureau", which gives an outline history of the development of medical examinations and an argument in support of the new plan under serious consideration.

We are also offering the report on non-medical examinations by Thomas W. Blackburn to the American Life Convention, published in The Spectator.

(EDITOR.)

"Medical selection of individual risks has long been considered a fundamental principle of life insurance practice in the United States. Not many years ago the innovation of group insurance without medical examination was quite astonishing to the business. Now comes the acceptance of individual lives along somewhat similar lines by a number of companies. At first glance it appears revolutionary, but closer study reveals it as a perfectly normal evolution.

"Not many were familiar with the fact cited recently by actuary V. R. Smith of the Conferation Life of Canada, that the beginnings of life insurance knew no medical selection. It was not until 1858 that the old Equitable of London appointed a medical examiner. The pendulum of practice swung swiftly to that side. In 1890 an English office, in protest of increasingly strict medical requirements, offered life insurance again without examination, but with many restrictions. Its acceptance there was slow, but in ten years and with more liberal interpretation it made much headway.

"Canada was first to bring the plan to this country, being in a manner forced to it during the period of the war. Doctors were scarce, examinations difficult to obtain, particularly in sparsely settled provinces, and in addition the medical men combined to charge ten dollars for each examination, which was considered exorbitant. January 1, 1921, brought the non-medical announcement of the first Canadian company, which was rapidly followed by others. English experience has proved the feasibility of accepting risks known to be high grade physically and morally without the doctor's O.K. and some are now writing up to $75,000 on that plan.

"The fact that the majority of life insurance applications are for medium amounts of insurance and that a large percentage of the applicants between certain ages have been proved to be medically acceptable, gave old General Average a new field to work in, nosing out the medicos.

"War conditions brought life insurance a great new popular impetus in the United States. Its volume has grown in the past few years beyond all pre-war imaginings. Prior to that, however, the refinements of medical selection and the improvement in public health both combined to effect such savings over the old mortality tables that the necessity for liberalization was becoming widely recognized. Writing sub-standard risks began, with a resultant astonishing success and

satisfaction to the public. Now another era is opening, for the new school of life salesman 'catches them young', when such a plan is most practical and appealing.

"Life underwriting is today merely recognizing the fact that the medical examination of a risk reveals only the immediate physical condition at one specific time. That is but one factor in the risk. The doctor knows little or nothing of other facts equally or of greater importance in their effect on longevity. There are family and personal history, habits, influence of occupation, conditions of living and, last but not least, the moral hazard. These important factors belong entirely to the field of inspection and under the 'non-medical' plan naturally require greater care than before, especially when disability and double indemnity features are added to the contract.

"Inspection of life insurance risks has been greatly developed within the last ten years. Some few of the older companies have for years devoted great care to this work, coupled with the doctors' reports. Others are just entering it individually, while the broad and intensive work of independent inspection services in the last decade has been made possible only by the increasing recognition of its importance by the life insurance companies, coupled with the tremendous development of the business itself within that period. Without doubt, the new development in life insurance practice will greatly increase the volume and responsibility of life insurance inspection.

"Life insurance has done well in the inauguration of this plan, in primarily impressing agents with the added responsibility placed on their shoulders. Only well-proved representatives will be allowed to submit risks on non-medical applications. So far only restricted amounts are issued, upon specific plans and within certain ages. The business is not 'wide open' by any means. The applicant is also impressed with the fact that the validity of his contract depends upon the truth of the statements he makes in his application. The old game of 'fooling the doctor' and then making the company pay will not appear in these cases.

"But it is apparent that the work of inspection will have new and larger problems to face. It is often more difficult to check the other fellow's information, whether good or bad, than to make an original report covering practically the same ground. The moral hazard, in the opinion of some, is the chief danger of the new plan of acceptance. It will be up to the inspection business to some extent to see that the applicant's protection is not beyond the proportions of his income. But the application itself will give evidence of other insurance, except in the infrequent cases of intentional deception and there will doubtless be some plan of exchanging information concerning writings between companies conducting this class of business as there is in Canada.

"Medical examination will nevertheless continue to play an important and continuing part, even in 'non-medical' life insurance, because the companies universally reserve the right to require it if any information develops that makes it seem expedient. On inspection that expediency will primarily depend.

"So far, only a few American companies have begun the acceptance of non-medical business. The Aetna has the credit of being the pioneer in this line, making its announcement last year. Since then the following companies have also taken it up under various methods of practice: American of Detroit, Connecticut General, Connecticut Mutual, Federal Union, Franklin, Great Southern Life, Guardian, Jefferson Standard, Kansas City Life, Phoenix Mutual, Prudential, Travelers and possibly others. More are expected to soon announce its acceptance.

"The fact that a few states have requirements making medical examination compulsory will not long stand in the way of the general use of the non-medical system, as legislators will be quick to see its public advantages and repeal this restriction."—"Hooper-Holmes Bureau."

"Pursuant to my request of March 26, reports received from seventy-nine American Life Convention companies show fifteen companies now issuing forms of policies on non-medical plan; twenty-two companies are considering and rather favorably inclined; twenty-five are not expected to adopt the practice and most of these are unfavorable; seventeen are not issuing policies upon the non-medical plan but are more or less noncommittal as to its advisability.

"Twelve companies, including one non-member, have submitted forms of applications which vary in detail, but generally cover all the usual questions contained in Parts I and II of the standard application blanks. The confidential portion of Part II is not included, but the questions to be answered by the agent himself put the insurability up to the agent. Most of the companies have a special list of additional questions for women applicants.

"The arguments offered in favor of non-medical policies are based upon the promise that small policies varying from $500 to $2500 may safely be written if carefully selected. All the companies reserve the right to order a medical examination if desired by the company. They

also require the applicant to say in his application that he will submit to an examination by a physician if required by the company. With these safeguards, advocates of the non-medical plan say, inspection and honest agents will be a sufficient protection. They also point to the experience of Canadian companies and emphasize the savings in medical fees, time and correspondence. Many insist that any selection against the company is covered by the additional nets which the company will carry to the credit of the policies, now paid to local examiners.

"They are practically unanimous in the expression of opinion that a large majority of companies will enter this field within from two to five years. One executive goes so far as to predict that within a comparatively short time the impairment bureau, the elaborate medical departments and the local examiners will vanish from the business. The medical director will be a counselor for the management in substandard cases and will delve into statistics of causes of death.

"On the other side of the question there are many objections which briefly are:

"It is a dangerous experiment. We have no reliable experience. The Canadian conditions, said to be favorable thus far, are not parallel to those in America. The very large urban population invites selection against the company which cannot be eliminated by inspection of individual risks. Agents having their commissions at stake cannot be expected to protect the companies' interest. Young companies will not be able to keep down the average of adverse selection and are likely to experience heavier mortality. No participating company should be permitted to write without medical examination unless it makes a separate class of this business and honestly charges the non-medical experience to such class. The higher mortality experienced by industrial companies demonstrates the necessity of medical examination to protect the companies. It is another 'frill' which may undermine the system of underwriting and bring many companies to grief. Unless supervision, inspection and morale of field forces are vastly improved the young companies will be injured by the new scheme. Physicians under the present system cover up some impairments where they are particular friends of agents or applicants and if the examiners are lax, what can be expected of the solicitors whose interest will make them soft pedal all unfavorable information. The non-medical plan will open a new avenue for fraudulent applications. The companies should not place the burden of determining the quality of risks offered upon the field force. Young companies will be tempted to follow this innovation because of competition.

"This idea is based upon the wild greed of companies for volume, which greed has already loaded upon the companies the burden of disability benefits and other accident and health provisions. Contests will be more numerous and companies and the institution of life insurance will suffer by reason of the increased litigation, now at a low minimum.

"Those who are non-committal or are 'considering' almost to a man say they are merely pursuing the policy of watchful waiting. Some of these are doubtful as to the advisability of attempting to dispense with examinations even on small policies. Some of the younger executives contend that if an examination is necessary on a $10,000 policy, it is no less important on four or five policies aggregating $10,000. All who are considering and others who are 'watching and waiting' admit that they are likely to be forced into the non-medical field by competition. Some say they will wait until two-thirds of the companies are writing on these forms of applications before they will feel it necessary to follow the procession. Some adhere to the idea that they cannot now or later venture into this untried and uncertain field.

"Non-medical applications may be used in any state in the Union except Arizona, Georgia, Idaho, Iowa, Massachusetts, Mississippi, Nebraska and Washington. In Louisiana and Minnesota there are sections of the law which may indicate a policy adverse. Indiana repealed its law requiring medical examinations in toto. North Carolina and Oklahoma relaxed the law to the extent of permitting policies up to $2000 to be written on non-medical applications. Small ordinary policies may be written in Arizona for $100; in Iowa for $500. Industrial and group policies are authorized in Arizona, Georgia, Idaho, Mississippi (industrial to $300), Nebraska and Washington. Monthly or weekly payment policies without medical examination may be written in Arizona, Idaho and Washington. Group insurance, annuities and pure endowments may be so written in Massachusetts. The pending bill in Wisconsin permits non-medical only in case of industrial policies under $500.

"The following American Life Convention companies report that they are accepting non-medical applications in amounts ranging from $250 to $2500 with varying restrictions as to age, form of policy, sex, disability, additional accidental death benefit and character of agent entrusted with the privilege. There is no uniform rule.

"American Life, Detroit, Michigan; American National, Galveston, Texas; Atlantic Life (child's educational only), Richmond, Virginia; Connecticut General Life (limited), Hartford, Connecticut; Continental Assurance, Chicago, Illinois; Equitable Life, Washington, D. C.; Franklin Life, Springfield, Illinois; Great Northern Life, Chicago, Illinois; Guardian Life, New York City; Jefferson Standard Life, Greenboro, North Carolina; Kansas City Life (ten-year endowment), Kansas City, Missouri; Life and Casualty (industrial $300), Nashville, Tennesee; Merchants Life, Des Moines, Iowa; Security Life and Trust, Winston-Salem, North Carolina; Western and Southern Life (intermediate only), Cincinnati, Ohio.

"The application forms vary somewhat, but generally interrogate the applicant as to age, occupation, health, present and past, other policies issued and pending, declinations, substitutions, height, weight, measurements, impairments, change of residence or occupation, habits, diseases, personal and family history, intentions as to travel, military or naval service, aviation and change of residence, amount of insurance in force, amount obtained or applied for without medical examination, name of any physician who attended the applicant and waiver of professional privilege. In short, parts usually number I and II are covered and the agent is interrogated in detail as to his acquaintance and knowledge of applicant. From fifteen to twenty rules governing the non-medical application are usually printed on the application form. As a general rule no term policies are issued and only one policy will be issued on any plan within a year.

"Inspections are required in all cases.

"The American Life Convention standard application blank Parts I and II covers nearly every interrogatory usually used in the non-medical blank."—Thomas W. Blackburn, in "The Spectator."

LOST SPONGE: EXPERT EVIDENCE NOT ESSENTIAL

(Laughlin vs. Christensen [U. S.], 1 Fed. R. [2nd. Series] 215)

The United States Circuit Court of Appeals, Eighth Circuit, in affirming a judgment in favor of plaintiff Christensen, says that she contended that the defendant negligently left a gauze sponge in her abdomen when he operated on her. Council for the defendant pointed out that there was no expert testimony offered on the question of negligence and insisted that the only admissible evidence on that question would be the testimony of medical experts. That conclusion was apparently reached by arguing that medical experts were the only persons qualified to testify whether an operation was negligently performed, and that the handling of the sponges was only a part of the operation. The argument was ingenious, but it failed to persuade this court.

It is true that there is a large class of malpractice cases in which the question or matter under investigation is so intricate and abstruse, or so little understood, that ordinary jurors would in all probability know nothing about it, but must be guided by opinions of witnesses having special knowledge. In this class of cases the plaintiff fails to make a case for the jury in the absence of testimony of a properly qualified expert witness. There are, however, at least two other classes of cases dealing with the admission of expert testimony on the issue of negligence: (1) Those in which the question or matter under investigation is so simple that the jurors are as well able as experts to pass on it. Admission of expert testimony in this class of cases is error. (2) Those cases in which the question or matter under investigation is of such character that the opinion of expert witnesses thereon, though not indispensible, may yet be of material assistance to the jury. In this class of cases the admission or rejection of expert testimony rests in the sound discretion of the court. Furthermore, it is not a universal rule, even when the alleged negligence of medical men is under consideration, that testimony by experts is indispensable. A number of so-called "sponge" cases were called to the attention of this court, but in no one of them was such a rule laid down or applied.

The reason for the rule, that in certain cases the testimony of experts is indispensable to establish negligence, is that in order to reach an intelligent conclusion on the question of negligence in those particular cases a scientific exposition of the subject is obviously necessary; but when the reason for the rule ceases, the rule itself ceases. In this court's judgment, no such scientific knowledge was necessary in order to pass on the question whether the sponge was negligently left in the plaintiff's abdomen by the defendant, in the instant case. No question of science was involved. The defendant himself testified that a sponge would not be left in the plaintiff purposely, and that in fact it was dangerous to leave a sponge in the abdominal cavity after an operation. The method pursued by the defendant and his assistant to learn whether a sponge had been left in the patient was explained to the jury. The jury was competent to say whether this method was of such a kind as to constitute due care; also whether the method was carried out with due care in the instant case: in other words, whether the defendant and his assistant did in fact count the sponges after the operation and find the same number as they had before the operation. These questions required no technical skill or special training to decide.

The court was not called upon in the present case to decide whether expert testimony would have been admissible, if offered, on the part of the plaintiff. The court holds that such evidence was not indispen-

sable, and that there was sufficient evidence to go to the jury on the question of negligence on the part of the defendant.

With regard to hypothetic questions, it is the general rule that all the material facts should be embodied in the hypothetic question, if only one question is to be asked. It is also the rule that if some of the facts are in dispute, then each party may frame his hypothetic question to include the facts as he claims the evidence shows them to be. The defendant invoked the latter rule, but it was not applicable to the hypothetic question in which it was sought to be applied because certain testimony embodied in the question was not testimony as to a fact, but consisted of the opinion of an expert who had very recently examined the plaintiff. It is the rule that it is not allowable in asking a hypothetic question to incorporate into it the opinion of another expert.—Jour. A. M. A.

Sioux City, Ia., June 18, 1925.

Dear Editor:

My profession does not give me time to practice oratory or argumentation with which to begin a reformation or launch a movement national in type and extent as our friend W. J. Bryan, who is at present assailing evolution in our schools. But I wonder if it would not be permissible in a small way to bring before the profession the fact that after many years of hard work are spent in getting a medical education; that after considerable worry and sweating has been done to pass the state board and procure a license to practice in one state, and in additional states either by reciprocity or in many cases by impracticable examinations, we now have an additional grief of one dollar a year for renewing our license to practice the art which we worked hard to learn and whose dignity we strive loyally to preserve.

The one dollar is not much, but the idea of the thing becomes more and more repugnant when one considers the fact that the thing was put across in a recent general assembly empowering a code commission to re-codify the law, by our brothers who have taken upon themselves to guard the legal welfare of man as we have the physical, without consulting our State Society or the American Medical Association. Had these legal advisers included their own profession the matter would be tolerable, but the practitioners of Christian science and the lawmakers were left out.

We practitioners of the healing art give our lives unselfishly to the public who in turn pay us about half of what we earn, and spend their surplus in riotous living, after we have helped them restore their health and earning capacity. We give ourselves to cliques and fight other cliques by word and deed, like one monopoly fights another, forgetting that "united we stand; divided we fall".

In our service to the public we have stamped out epidemics, pandemics, and lengthened the life of man. In turn we permit ourselves to be exploited by political combines. One act after another draws the loop closer around our necks. Yet we stand and look on; we grin; and at the close of day go to bed.

If it is a matter of getting one dollar to defray the expense connected with our profession let it be collected without tampering with our license. If we can't protect ourselves as a society let us hire someone to protect us. It might be well to get a new legislative committee with instructions to consult our state and county societies for advice on matters pertaining to the practice of medicine, prior to their enactment by our senators and representatives.

Lest perchance I am looking at this matter through a fogged objective let us have arguments in favor of this and other acts from our law-makers which are sure to follow and further restrict us in our profession and land us ultimately in the shackles of state medicine. On the other hand if this view coincides with yours and other members of our society let us arise in one united state or national society and have Section 2447 erased from the 1924 code, having to do with the medical renewal fee.

I move that immediate action be started to get our dollar back and continue our license as in the past.

Yours truly,

J. A. Wm. Johnson, M.D.

LEGAL OPINION ON SECTION 2447

Iowa City, Iowa, July 29, 1925.

D. S. Fairchild, M.D.,

Dear Doctor:—

I have your favor of July 24th, requesting an opinion upon the question "Whether Section 2447 should apply to physicians who had received licenses to practice medicine prior to the passage of this law, and if it should apply, what remedy has the medical profession, short of a repeal of the law"? You also ask me to include in my answer the "theory of the act, what was its purpose".

Answering the questions propounded, will say that the language of Section 2447 is unambiguous and clearly revokes all licenses theretofore issued as of date June 30th, following the date of the issuance of such license. This means that every license that was issued to practice medicine in this state, prior to June 30, 1925, expired on that date, and that before such licensee could lawfully practice after June 30, 1925, he must have had such license renewed.

There is no doubt of the power of the legislature to revoke licenses granted. The power to license occupations or privileges, and to impose and collect license fees or taxes thereon, is found in the generic law and is an exercise of the police power of the state. Statutes passed pursuant to this power confer no property or vested right, and the license granted pursuant to the statutes passed in the exercise of this police power is merely a permit or privilege, and is not a contract between the state granting it and the person to whom it is granted.

This being true, the legislature undoubtedly had the power to terminate all licenses theretofore

granted, and to require new licenses to be procured as a condition precedent to the right to practice medicine in this state.

It is customary to charge a fee for the granting of a license. These fees may be imposed either in the exercise of the police power, or in the exercise of the power to tax. Where the amount of the license fee is not greatly in excess of the expense of regulating the business and of issuing the license, it is not interpreted as an exercise of the taxing power. In my opinion, the purpose of imposing a license fee of one dollar was not primarily to raise revenue, but as a method of exercising supervision and control over the practice of the profession.

The medical profession certainly has no remedy short of a repeal or modification of the law.

I think I have sufficiently indicated already that the purpose of the act was not to raise revenue through the exercise of the power to tax, but rather to regulate the practice of the profession and impose a fee designed primarily to defray the expense of the regulation.

If this information does not clearly answer the questions you had in mind, I should be glad to hear from you and to submit further answers.

Yours very truly,

Charles M. Dutcher.

COURSE OF INSTRUCTION FOR NATIONAL GUARD AND RESERVE OFFICERS

The Editor,
Journal of Iowa State Medical Society,
Clinton, Iowa.

There is enclosed herewith an article on the recent course of instruction for National Guard and Reserve Officers, Medical Department, conducted at the School of Aviation Medicine, Mitchel Field, L. I., New York. I am directed by the Surgeon General of the Army to forward the article for publication in your journal, if it is considered to be suitable material.

Very truly yours,

J. E. Bastion,
Major, Medical Corps, U. S. A.,
Assistant.

The School of Aviation Medicine had a special session for Reserve and National Guard officers for the period from May 1 to June 15, 1925, at Mitchel Field, L. I., New York. The following officers took the preliminary course and have been qualified to perform the physical examination for flying: Major Wm. D. Petit, M.R.C., Thorndale, Texas; Major V. W. Maxwell, M.R.C., Sanatorium, Mississippi; Major I. E. Ruhl, M.R.C., Kansas City, Missouri; Captain A. J. Pullen, M.R.C., Fondulac, Wisconsin; Major L. W. Fetzer, M.R.C., Dallas, Texas; Captain L. C. Pawelek, M.C., Texas N.G., Houston, Texas; Major A. W. Burke, M.R.C., Chicago, Illinois; Captain W. F. Smith, M.C., Ind. N.G., Indianapolis; Major A. McCallister, M.R.C., Oteen, North Carolina.

The following officers took the advanced course and have been qualified as Flight Surgeons: Lieut.-Col. Serge Androp, M.R.C., Callipolis, Ohio; Major H. N. Anderson, M.R.C., Woodbine, Iowa; Major Granbow Thomson-von Colditz, M.R.C., Evanston, Illinois; 1st Lieutenant A. J. Herbolsheimer, M.R.C., Minneapolis, Minnesota; Captain E. E. Langley, Washington N.G., Spokane, Washington.

The following officer of the Sanitary Reserve Corps reported for two weeks training in the progress of physiology of aviation: Major Charles W. Greene, San. Res., Columbia, Missouri.

This class, which comprised officers from every section of the country, is the largest Reserve and National Guard class which has ever passed through the school.

The course of instruction which they had was entirely professional and consisted of lectures, practical work at the school and clinics in New York City. The subjects taken up in the preliminary course were ophthalmology and otology, cardiology, and neuropsychiatry. In the advanced course the same subjects were taken up plus physiology, psychology and administration.

On Thursday, June 11, the class gave a dinner at Mineola for the faculty. Besides the faculty and class there were present Lieut.-Col. Wm. R. Davis, M.C., The Chief, Medical Section of the Air Service, and Major R. P. Carter, M.C., of the School Section, Surgeon General's offices. At the dinner the class gave their impressions of the school and the faculty spoke on the course from the standpoint of the instructor. Colonel Davis and Major Carter emphasized the importance of the work and the necessity of training a large number of Reserve and National Guard officers for duty with the air service.

Resolutions were adopted by the class and copies furnished the Chief of the Air Service, the Surgeon General and the Commandant of the School of Aviation Medicine, expressing the deep appreciation of the members of the class for the thoughtful consideration of the Commandant and the instructors and the knowledge obtained from the course of instruction.

INFORMATION SERVICE, POST OFFICE DEPARTMENT MAY 14, 1925

To Editors:

With a view to reducing the large and needless waste occasioned by careless addressing of mail matter, Postmaster General New has directed that an intensive educational campaign be waged during the first week in June to assure better mailing practices and to divert to constructive channels millions now lost, principally through carelessness.

The department already has been assured the cooperation in this endeavor of many of the nation's large mail users and of business, civic, and fraternal organizations. Twelve thousand moving picture theatres will run the department's slogans urging greater care in addressing, and it is hoped that newspapers generally will take part by disclosing to their readers the extent of the waste and the way in which it may be eliminated.

Enclosed are copies of three articles which may be rewritten or run as written. Additional articles on the same subject will follow later. Postmasters have been asked to cooperate with editors and to supply them with available information to localize the stories.

RAILROAD COMPANY JOINS HEALTH CAMPAIGN

A special meeting of all male employes on the Brunswick Division of the Atlanta, Birmingham & Atlantic Railway Company was recently held in Fitzgerald, Georgia, for the purpose of hearing a lecture on the venereal diseases. The company provided free transportation for all employes; six hundred passes were issued. The auditorium, with a seating capacity of twelve hundred, was filled; three hundred persons were turned away.

This meeting was arranged by the Georgia State Board of Health, with W. H. Gillette, Regional Consultant, United States Public Health Service, delivering the illustrated lecture on "Sex Education and Venereal Diseases". In announcing the lecture, the Fitzgerald Herald said, "We quarantine smallpox, yet it kills relatively few and ruins no future generations. Social diseases are winked at, yet 25 per cent of the male population fall victims, and generations far down the weave of years will fill jails, asylums and institutions for the unfit because of them".

This and similar meetings as part of the venereal disease control activities of the Georgia State Board of Health seek to enlighten the general public on the dangers of the venereal diseases, how their spread may be controlled, what they cost both in health and money, and how preventive measures may be effectively employed.

MEDICAL NEWS NOTES

Governor Hammill made public May 19 the following appointments for membership on state examining boards:

Miss Clara Craine, Davenport, to the board of nurse examiners for a three-year term, beginning July 1.

S. E. Julander, Des Moines, to the board of chiropractic examiners for a three-year term, beginning July 1.

Dr. Frank M. Fuller, Keokuk, to the board of medical examiners to fill the unexpired term of Dr. G. M. Severs, resigned and expiring June 30, next.

Dr. William Jepson, Sioux City, to the board of medical examiners, to fill the unexpired term of Dr. H. C. Eschbach, resigned and expiring June 30, 1926. —Davenport Democrat.

Work has been commenced on the new Medical Arts building at Burlington, which is to be the home of the Burlington doctors.

This is an enterprise to be commended.

Acceptance of a gift of $1,000,000 to be known as the Douglass Smith foundation, the income from which will be available at once for research in the School of Medicine of the University of Chicago.

Something should be said in relation to the American Medical Directory.

Some years ago the House of Delegates undertook the difficult and expensive task of preparing a medical directory of the United States and Canada. The first edition was very satisfactory, and now the ninth edition has been issued, as complete and as nearly perfect as is possible for human endeavor to reach.

The directory includes information concerning every medical activity that one could be interested in. The expenses of collecting data and publication are great, and entails considerable loss to the Association.

It is the only medical directory of importance in the United States. The price does not meet the cost of production.

The 1926 Session of the American Medical Association will be held in Dallas, Texas.

Dallas is an enterprising and progressive city, and has ample hotel accommodations for the convenience and entertainment of the Association, its members and guests.

We congratulate the House of Delegates on its wisdom in selecting this southern city.

A tonsil and adenoid clinic was conducted at Mary Greeley Hospital, Ames, at 8:30 a. m. Friday, May 22, for children who have qualified for treatment under the regulations of the clinic.

Dr. B. G. Dyer was the officiating physician. Dr. Dyer and Dr. G. E. Griffith alternate in donating their services to the cause of better child health. These clinics are conducted at intervals and since the inception of the service last August, thirty-two children have been taken care of.

The Social Service League provides the necessary hospitalization of the patients. The only way a child can be admitted to the clinic is by some one reporting a case appropriate for the service to the Social Service secretary at the city hall, who in turn makes an investigation as to the worthiness of the request. The cases are usually reported by the school nurse.—Ames Tribune.

What is to become of the small town doctor situation? Too many internes are qualifying as specialists and that means big town places to practice. The old-time physician and surgeon sign is but rarely seen in communities of less than 1,000 population. Looking over the list of medics in this city many are found to have come from small towns to the county seat, others arriving with the specialist sign ready to hang up and office work the hobby. Life is going pretty easy these days for the doctor who is regarded as up-to-date.—Ottumwa News.

SOCIETY PROCEEDINGS

Polk County Medical Society

The Polk County Medical Society met for its regular monthly meeting in the oak room of the Fort Des Moines Hotel, June 30, 1925. The meeting was called to order at 7:40 p. m. by the president, Dr. W. W. Pearson.

The minutes of the May meeting were read and approved.

Clinical cases were called for but none were presented.

The program follows:

Complications of some Prevalent Infectious Diseases:

Grippe—Eli Grimes, M.D.

Scarlet Fever—Charles Howland, M.D. and Edward Wiles, M.D.

Measles—G. A. May, M.D.

Diphtheria—C. H. Carryer, M.D.

Dr. Howland's paper was presented by Dr. C. L. Chambers.

The name of W. W. Hansell was presented to the society for membership, by transfer from Poweshiek County Society. Dr. G. A. May moved that he be accepted into membership. Duly seconded and unanimously carried.

A report of the committee appointed to investigate the charges from the Women's Club was read. These charges were presented to the society some months after the Tri-State District Medical Society meeting. A copy of this report is attached. Moved by Dr. McKinley that the report be accepted and committee discharged. Duly seconded and unanimously carried.

Dr. M. L. Turner read a report and resolution from the board of censors on the charges against Dr. B. R. Huntington and moved its adoption. Seconded by Dr. McKinley. A copy of the resolution is attached to these minutes.

The following bills were presented and allowed: Iowa Printing and Supply Company, $6.05; bill from secretary-treasurer (commission to date, salary for March, April, May and June), $227. Forty-three members and two visitors were present at the meeting.

L. K. Meredith,
Secreary-Treasurer.

Resolution

Mr. President:

As chairman of the board of censors of the Polk County Medical Society, and on behalf of the board, I move the following resolution, relative to Dr. B. R. Huntington:

"Whereas, On or about March 11, 1925, formal charges of unethical and unprofessional conduct were duly filed with the board of censors, against Dr. B. R. Huntington, a member of this society; and,

"Whereas, On or about April 25, 1925, Dr. Huntington was duly notified, in writing, of such charges, a photostatic copy of which was furnished him; and,

"Whereas, On or about the 29th day of April, 1925, Dr. Huntington tactily admitted his guilt of such charges and tendered his written resignation from this society.

"Now, Therefore, Be It Resolved, By the Polk County Medical Society, in regular meeting assembled, that such resignation be accepted and that Dr. B. R. Huntington be censured for such unethical and unprofessional conduct.

"Be It Further Resolved, That a copy of this Resolution be spread upon the minutes of the records of this society and that a copy, duly attested by the secretary, be furnished to Dr. Huntington, at his last known address."

The foregoing resolution having been duly presented by Dr. M. L. Turner in the absence of Dr. A. P. Stoner, chairman of the board of censors, and duly seconded by Dr. A. D. McKinley, was unanimously adopted at the regular meeting of the Polk County Medical Society, held in Des Moines, Iowa, on the thirtieth day of June, 1925.

L. K. Meredith,
Secretary.

Bremer County Medical Society

The Bremer County Medical Society met at Legion Hall in Plainfield, Iowa, on Tuesday evening, March 24, 1925. After a most appetizing and more than satisfying banquet furnished by the Ladies' Auxiliary of the American Legion, and sponsored by Dr. L. D. Jay of Plainfield, the meeting was called to order by Dr. Sparks. Minutes of the last meeting read and approved. A vote of thanks was tendered the Plainfield Auxiliary and Dr. Jay for this magnificent banquet.

Dr. Rohlf then gave a talk on Pancreatitis, which was discussed by Drs. Graening, Kern, Day, McDannell, Jay, West, Osincup and Ensley. It was closed by Dr. Rohlf.

Members of the society present: Doctors Graening, West, Rohlf, Kern, Gernsey, Sparks, Osincup, Robinson, Jay and Clasen. Visitors present: Doctors Goodale and McDannell, Nashua; Doctors, Mayne, Call and Bigelow, Greene; Doctors Smith, Youngs and Day of Clarksville; Dr. Ensley of Shellrock; Dr. Evans, New Hartford; Dr. Reeves, Allison; Dr. Roder, Dumont.

Adjourned to hold a public meeting in Tripoli on April 28, 1925.

Bremer County Medical Society

The Bremer County Medical Society held a public meeting at Tripoli, Iowa, on Tuesday evening, April 28, 1925, in the Congregational church. There was a good attendance of the public. Dr. C. H. Graening of Waverly, talked on Infectious Diseases. This was a fine and important dissertation, and seemed to be much enjoyed by those present.

Dr. H. W. Clasen of Tripoli, gave the members of the society a banquet at his home at 6:30 p. m. A short business session was held at the close of the dinner. Bills for flowers for Dr. Reeves and printing were allowed. Owing to the exchequer

being without funds an assessment of three dollars ($3.00) per member was unanimously voted.

Members present were: Doctors Bries of Sumner; Graening, Sparks, West, Osincup, Rohlf, Robinson, Kern and Gernsey of Waverly; Dr. Jay of Plainfield; Dr. Osnes of Readlyn; Host Clasen of Tripoli. Visitors present: Dr. Paul Gardner, New Hampton; Dr. Buckmaster of Dunkerton.

Adjourned to meet in Waverly, May 26, 1925.

Bremer County Medical Society

The monthly meeting of the Bremer County Medical Society met at Waverly, May 26, 1925. After a dinner at the Sweet Shop Cafe, adjourned to meet at the Hospital, at which the following members were present: Doctors Kern, Clasen, West, Graening, Sparks, Jay, Osincup, Osnes, Robinson, Gernsey. Visitors present were: Doctors Ensley of Shellrock; Boslough, Janesville; Evans, New Hartford; Youngs, of Clarksville; Hemingway and Brierly, of Waverly.

Minutes of the last meeting were read and approved, and bill for printing allowed. A committee to prepare resolutions of condolence to be sent to Mrs. Reeves of Allison, Iowa, and spread on the minutes of our society expressing our regret and sympathy at the demise of our late professional brother, Dr. Reeves of Allison.

Dr. Clasen of Tripoli read a paper on Hay-fever. This was discussed by Doctors Osincup, Osnes, Robinson, Sparks, Jay, Youngs, West; Dr. Clasen closed. Dr. Kern then reported his attendance at the State Meeting in Des Moines, and gave a resume of the proceedings of the House of Delegates. Dr. Jay then reported on his attendance at the State Meeting at Des Moines, and gave a very full and interesting report of the scientific session, and from his report we are sure that Dr. Jay attended the meeting.

The session then adjourned to meet at a public meeting at Readlyn, on June 30.

Bremer County Medical Society

The Bremer County Medical Society held a public meeting at Readlyn, on June 30th. Dr. Osnes was then entertaining host, and entertained the members of the society and visiting doctors at a banquet at his home at 6:30 p. m. This was enjoyed by all present, and the Doctor and his estimable wife were voted royal entertainers.

Members of the society present were: Doctors Jay, Ensley, Bries, Whitmore, Epeneter, Osnes, Sparks, Graening, Osincup, Kern, Robinson, West, Gernsey. Visitors present were: Doctors Ensley of Shellrock; Paul Gardner, New Hampton; dentists, Hemingway and Kromer, of Waverly; Dentist Claus, of Tripoli.

Dr. Kern gave a talk on Tuberculosis, and presented some x-ray pictures of chest, and some lantern slides for the benefit of the public. The society then adjourned to meet in Denver for a public meeting on July 30th.

Dr. F. R. Sparks,
President.
Dr. M. N. Gernsey,
Secretary-Treasurer.

Audubon County Medical Society

The Audubon County Medical Society met in regular session Thursday evening, July 16, at the office of Dr. R. F. Childs. The meeting was called to order by Dr. L. E. Jensen. Lunch was served at six o'clock at the Curtis cafe, after which the society repaired to the Memorial building, where a paper was read by Dr. Jack Trainor of Council Bluffs and discussed by members of the society.

Later Dr. Dean of Council Bluffs gave a demonstration of diseases of the eye with beautiful pictures of that organ and description of several diseases with which the eye is afflicted. We all enjoyed this meeting very much and those out of town doctors felt they had received enough benefit to pay for their trouble in getting here.

J. M. Fulton, Sec'y.

Clinton County Medical Society

The Clinton County Medical Society met on the evening of March 26, 1925, at the Lafayette Hotel, Clinton. The business meeting at six p. m. was followed by a special banquet for the doctors in the private dining room. About forty-five physicians were served, after which the meeting was addressed by Dr. Fred M. Smith, professor of medicine at the State University of Iowa, on The Use of Iodine in Exophthalmic Goiter. This paper was interestingly discussed by Dr. E. S. Murphy of Dixon, Illinois, and Dr. D. S. Fairchild, Sr. of Clinton.

Dubuque County Medical Society

The annual June meeting of the Dubuque County Medical Society was held on Tuesday, June 16, at St. Luke's church, Twelfth and Main streets.

The program was as follows:

Dr. J. C. Hancock, chairman.

Analysis of 100 Cases of Empyema—Dr. H. L. Beye, Professor of Surgery, Iowa State University School of Medicine.

Endocrinology. Lantern Slide Demonstration of Classical Types and Dissertation on Modern Treatment—Dr. John L. Tierney, Professor of Internal Medicine St. Louis University School of Medicine.

Diagnosis of Cardiac Disease—Dr. F. M. Smith, Professor of Internal Medicine, Iowa State University School of Medicine.

Treatment of Early Syphilis—Dr. Nathaniel G. Alcock, Professor of Surgery, Iowa State University School of Medicine.

Pyonephrosis with Demonstration of X-ray Films and Pathological Specimens—Dr. L. H. Fritz—Dubuque, Iowa.

Some Unusual Diagnostic Findings with the X-ray —Dr. W. A. Johnston, Dubuque, Iowa.

Case—Two Types of Malignancy in a Patient—Dr. C. E. Lynn, Dubuque.

Case—Melogenous Leukemia—Dr. J. C. Hancock, Dubuque.

Case—Pyloric Stenosis; Hirschprung's Disease—Dr. W. Cary, Dubuque.

Lactic Acid Milk as an Infant Food with Case Reports—Dr. C. C. Lytle, Dubuque.

Indications and Contraindications for Spinal Puncture and Findings in Various Cerebral Conditions—Dr. A. St. Germain, Dubuque.

Therapeutic Value of Spinal Puncture with Citation of Cases—Dr. F. S. Leonard, Cascade.

Banquet at Leiser's, 6:30.

Address, "The Private Practice of Preventive Medicine"—Dr. Don M. Griswold, Associate Professor of Preventive Medicine and Hygiene, Iowa State University, Iowa City.

The officers of the local society are: President, J. C. Hancock; first vice-president, J. V. Keogh; second vice-president, F. W. Meyers; secretary, H. A. Stribley; treasurer, W. Cary; librarian, I. S. Bigelow.

The members of the committee of arrangements are Doctors Kinnier, Cary, Johnston, Thompson, and F. P. McNamara, chairman.

Jackson County Medical Society

The Jackson County Medical Society held a meeting jointly with the Jackson County Public Health Association on June 25, 1925, at the Maquoketa Country Club.

The public was invited. The object of the meeting was to inform the laiety of the importance of public health activities and to show the attitude of the profession toward such work. The dentists of the county were especially invited.

Twelve members of the society and four medical guests attended. Four dentists and several nurses, including members of the Public Health Association and other citizens interested in health propaganda, the audience numbered about one hundred. All parts of the county were well represented excepting Bellevue and Sabula.

After a business meeting of the Health Association, President Swift called the medical society to order and the following program was given:

General Practice and Its Relation to Preventive Medicine, Dr. Walter J. Connell, Dubuque.

Dental Health, Glen O. Nickols, D. D. S., Maquoketa. Both papers were well discussed by both doctors and dentists.

Motion carried, requesting the Iowa Tuberculosis Association to hold Chest Clinics in Jackson county.

President appointed Drs. Johnson, Ristine and Wm. Lowder a committee to draw up resolutions on the death of Dr. A. B. Bowen, which occurred since our last meeting.

After a rising vote of thanks to Drs. Connell and Nickols for their valuable papers the society adjourned.

A picnic supper and a social hour were enjoyed by all present. D. N. Loose, Sec'y.

Jasper County Medical Society

The Jasper County Medical Society met at Monroe, on the evening of June 30, 1925. The scientific session consisted of a symposium on the Prevention of Heart Disease, given by the following doctors from Des Moines.

The Prevention of Heart Disease in Children and Young People, by Dr. Merrill M. Myers.

The Prevention of Heart Disease in Adults, by Dr. John Russell.

Heart Disease as a Public Health Problem, by Dr. John Peck.

Upon the completion of the symposium the subject was open for discussion and much interest was evinced by those present in the subject.

Upon the completion of the program and business meeting a social session was had, the doctors gathering in little groups, discussing their problems and renewing old acquaintanceship.

About forty doctors from Jasper and neighboring counties were present and the fraternal spirit shown by all present augurs well for the profession in Jasper county.

Louisa County Medical Association

The semi-annual meeting of the Louisa County Medical Association was held Thursday afternoon at the Masonic club rooms in Columbus Junction, May 28. Members in attendance were: Drs. J. H. Chittum and E. C. Rogers of Wapello; Drs. D. W. Graham and W. B. Smythe of Morning Sun; Dr. T. L. Eland of Letts, and Drs. F. A. Hubbard, J. W. Pence, S. J. Lewis and O. W. McGrew of Columbus Junction.

Visitors were: Dr. B. E. Eversmeyer, Dr. Lyle Howe of Muscatine; Drs. Harrison and McConahay of Winfield; Dr. H. H. English of Cone; Dr. J. W. Hubbard of Columbus Junction, and Drs. J. W. Bone and C. E. Ruth of Des Moines.

The following papers were read:

Available Laboratory Work for Local Doctors, J. H. Chittum.

Acute Appendicitis in Children, S. J. Lewis.

Fractures That Are Apt to Make the Most Trouble, C. E. Ruth.

Officers were elected as follows: President, J. H. Chittum; vice-president, W. B. Smythe; secretary-treasurer, O. W. McGrew; censors, D. W. Graham, E. C. Rogers and D. J. Higley.

Marion County Medical Association

The Marion County Medical Association met in regular June session at Knoxville, on Monday, June 8.

The scientific program was an address by Dr. Russell Doolittle of Des Moines on the subject The Defective Delinquent. One point forced home by both this address and the discussion, was the importance of the early detection and treatment of the defective. Of course the importance of work of the school nurse and her inspections of the school chil-

dren in singling out the physical defectives, was emphasized.

Following Dr. Doolittle, Dr. James F. Cooper of New York City, addressed the society on the subject of Birth Control. Dr. Cooper is medical director of the clinical research department of the American Birth Control League, and came here direct from New York. His next address was in Davenport. The physicians present were more than pleased to hear the message of Dr. Cooper.

Austin Flint-Cedar Valley Medical Society

A meeting of the Austin Flint-Cedar Valley Medical Society was held July 7 and 8, 1925, at New Hampton. The meeting was called to order at 10 a. m. on July 7 by the president, Dr. G. F. Starr. The minutes of the last meeting were read and approved. Drs. Graening, Zoller and Osincup were appointed to act as a board of censors in the absence of the regular board of censors. The following applications were approved by the censors and then elected into membership of the society: Dr. Guy B. Anderson, Swea City; Dr. B. C. McDowell, Allison; Dr. T. J. Irish, Forest City; Dr. A. L. Judd, Kanawha; Dr. A. L. Spooner, LuVerne, and Dr. J. F. Gerken, Iowa City.

A card of appreciation from Mrs. D. N. Reeve of Allison was read by the secretary acknowledging receipt of flowers sent her by the Austin Flint-Cedar Medical Society at the time of the death of her husband, Dr. D. N. Reeve. Drs. Wright and Gardner were appointed by the president as a committee to draw up a resolution in regard to the death of our esteemed member, Dr. D. N. Reeve. This was done and the following resolution adopted:

To Mrs. D. N. Reeve and family who recently sustained the great loss of husband and father by death:

We, the members of the Austin Flint-Cedar Valley Medical Society of which he was an honored member, desire to extend to you our deep sympathy in this hour of grief and sad bereavement;

And also to assure you that we do and shall miss Dr. Reeve from our meetings and deliberations as a Society;

And we confidently commend you to the love, mercy and guidance of Him who doeth all things well.

Done by order of the Society at the annual meeting in New Hampton, Iowa, July 8, 1925.

(Signed), Paul E. Gardner,
John C. Wright.

It was moved, seconded and carried that a copy of this resolution be sent to Mrs. D. N. Reeve and family and a copy be recorded in the minutes of this meeting. This was done.

The following officers were elected for the coming year: Dr. J. McDannell, Nashua, president; Dr. F. X. Cretzmeyer, Algona, vice-president; Dr. W. E. Long, Mason City, treasurer; Dr. L. A. West, Waverly, secretary.

It was moved by Dr. Wright and seconded by Dr. Peters that the fall meeting be held on the first Tuesday of October. This was carried. It was moved by Dr. Gardner and seconded by Dr. Kenefick that the place of fall meeting be arranged for by the president and secretary. This was carried.

The scientific program was given as printed and was as follows:

Tuesday, July 7, 10:00 a. m.

Infections of the Urinary Tract, Dr. A. J. Farnham, Traer.

Medical Economics, Dr. R. Eischeid, New Albin.

Birth Injuries and Their Prevention, Dr. A. A. Hoffman, Waterloo.

1:00 p. m.

Clinic—Artificial Feeding of Infants, W. Ray Shannon, St. Paul, Minnesota.

Significance and Management of High Blood-Pressure in Pregnancy, Dr. W. A. Dorland, Chicago, Illinois.

Etiology and Treatment of Peptic Ulcer, Dr. Ralph C. Brown, Chicago, Illinois.

Rheumatic Disease, Dr. Dan J. Glomset, Des Moines.

Clinical Aspects of Immunity, Dr. Don M. Griswold, Iowa City.

Wednesday, July 8, 8:00 a. m.

Cesarean Section—Dr. C. E. Dakin, Mason City.

New Orientation of the Neuroses and Psychosis, Dr. C. R. Ball, St. Paul, Minnesota.

Surgery of the Lower Abdomen, Dr. M. M. Ghent, St. Paul, Minnesota.

Mendel's Law of Inheritance, Dr. W. W. Bowen, Fort Dodge.

President's Address—Dr. C. F. Starr, Mason City.

1:00 p. m.

Clinic—Orthopedic Surgery, Dr. H. W. Meyerding, Rochester, Minnesota.

Fractures of the Humerus and Femur, Dr. G. M. Crabb, Mason City.

Ophthalmology and the General Practitioner, Dr. J. S. Reynolds, Minneapolis, Minnesota.

Syphilis of the Cardio-Vascular System, Dr. A. J. Patek, Milwaukee, Wisconsin.

Post-Mortems from the Standpoint of the General Practitioner, Dr. E. L. Miloslavich, Milwaukee, Wisconsin.

Dr. Schilling as chairman of the program committee is to be congratulated for the excellent program given. The Austin Flint-Cedar banquet and dance were held at 6:30 p. m. on Tuesday, July 7, and thoroughly enjoyed by those in attendance. The ladies were entertained at a luncheon at 1:30 p. m. at the Miller Hotel on Wednesday, July 8, and reported a most delightful time.

The New Hampton doctors who made up the committee on arrangements deserve a vote of thanks for the unusual scientific and social program which made the meeting most successful.

L. A. West, Sec'y.

Des Moines Valley Medical Association

The fifty-second annual meeting of the Des Moines Valley Medical Association was held Wednesday and Thursday, June 17 and 18, 1925, at Ottumwa.

The program follows:

Morning, June 17

Clinics at Ottumwa Hospital.

8:30—Dr. Murdoch Bannister, Ottumwa, assisted by Dr. D. T. Rambo.

9:30—Dr. Frank D. Dickson, Kansas City, Missouri, assisted by Dr. H. H. Moore, Ottumwa.

10:30—At Circle Theatre—The Mobilization of Ankylosed Joints, illustrated by motion pictures—Dr. Frank D. Dickson.

11:00—Pulmonary Tuberculosis. Four reel motion picture produced under the direction of Lewis Gregory Cole, M.D., New York City.

Afternoon

1:30—At the Chamber of Commerce. Some Points on the Differential Diagnosis of Functional and Organic Diseases of the Nervous System. (Lantern demonstration)—Dr. Tom B. Throckmorton, Des Moines. Some Peculiar Types of Intestinal Obstruction—Dr. Murdoch Bannister. Pulmonary Tuberculosis—Dr. Robert C. Davis, Kansas City, Missouri.

Evening, June 17

6:30—At Hotel Ottumwa. Banquet, What of the Medical Profession—Dr. George Allen Jenkins, Albia. Music by the Phillippe Orchestra.

Morning, June 18

Clinics at St. Joseph Hospital.

8:00—Dr. F. A. Willius, Mayo Clinic, Rochester, Minnesota, assisted by Dr. W. E. Anthony, Ottumwa.

9:20—Dr. Charles A. Elliott, Chicago, Illinois, assisted by Dr. D. L. Rater.

10:40—Dr. Charles Anderson Aldrich, Winnetka, Illinois, assisted by Dr. H. W. Vinson, Ottumwa.

Afternoon

1:30—At the Chamber of Commerce. The Relationship of Chronic Infection of the Gall-Bladder to Diseases of the Cardiovascular System—Dr. F. A. Willius. Treatment of Hyperthyroidism. (Lantern demonstration.)—Dr. C. A. Elliott. Nephritis in Children—Dr. C. A. Aldrich.

Officers: President, Dr. C. B. Powell, Albia; first vice-president, Dr. E. A. Sheafe, Ottumwa; second vice-president, Dr. E. S. Grove, Fairfield; secretary and treasurer, Dr. H. A. Spilman, Ottumwa; board of censors—W. C. Newell, Ottumwa; F. C. Mehler, New London; O. A. Geeseka, Mount Pleasant.

Four County District Medical Society

A meeting of the Four County District Medical Society was held May 18 at Cherokee. G. H. Crane of Holstein, Iowa, read a paper on The Small Town Doctor. T. D. Kas of Sutherland, W. T. Shepard of Le Mars and D. A. Herron of Alta contributed papers on surgery.

A dinner was served at the Hotel Lewis in Cherokee at 6:30.

Homeopathic State Medical Society

The Homeopathic State Medical Society at its recent convention at Whittier, elected officers as follows: Dr. William Rohrbacher, president, Iowa City; Dr. E. D. McLean, first vice-president, Des Moines; Dr. E. T. Richardson, second vice-president, Ames; Dr. H. L. Rowat, secretary, Des Moines; Dr. Alex H. Hatch, treasurer, Des Moines.

SURGICAL ASSOCIATION OF THE ROCK ISLAND LINES

The twenty-first annual meeting of the Surgical Association of the Rock Island lines will be held in the Antlers Hotel, Colorado Springs, Colorado, Friday and Saturday, September 11 and 12, 1925.

Colorado Springs was selected at the request of a large number of our surgeons on account of the most enjoyable meeting which we had there in 1921.

HOSPITAL STAFF MEETING

Sioux City should attract national attention as a medical center through the operation of the plan of admitting rural doctors to the privileges of working with the hospital staff of St. Vincent's and Methodist Hospitals, Dr. Charles A. Elliott, eminent medical authority and professor of medicine at Northwestern University, told seventy-five physicians and surgeons at the second joint meeting of the two hospital staffs and doctors from surrounding towns, Thursday noon, at the Elk's Club.

The plan which received the commendation of Dr. Elliott is an innovation in the medical world and allows country doctors the same privileges in these two hospitals as members of the staff. In this way out of town doctors can treat cases in these hospitals that otherwise would have to be treated at home in general practice. The plan has been indorsed by the American College of Surgeons.

"The result of this plan will be that people from this territory will come to this city as a medical center, for they will realize that the finest methods and latest discoveries are available here in Sioux City", Dr. Elliott said. "The plan is right in line with the idea of the university permeating into general practice the latest methods. Northwestern University plans on sending out teams to spread new ideas and developments and this plan will aid in bringing closer relationship between the universities and graduates in medical practice."

Dr. Elliott presented an illustrated lecture on Disease of the Thyroid and the Subject of Jaundice. Dr. J. F. Taylor, president of the Methodist Hospital staff, and Dr. W. E. Rowley, president of the St. Vincent's Hospital staff, were in charge at the meeting.

Doctors from nearby towns present at the Thursday meeting included: Dr. A. H. Jastram, Ramsen; Dr. A. L. Allison, Rodney; Dr. A. Nafziger, Merrill; Dr. C. Harman, Whiting; Dr. C. E. Legg, South Sioux City, Nebraska; Dr. J. R. Dewey, Oakland, Nebraska; Dr. A. H. Bullock, Cushing; Dr. M. W. Grubb, Galva; Dr. T. E. Cole, Le Mars; Dr. W. H. Dewey, Moville; Dr. A. E. Cook, Randolph, Nebraska; Dr. J. G. Stolley, Moville; Dr. O. W. Neill, South Sioux City, Nebraska; Dr. Lee W. Prescott, Sloan; Dr. C. L. Phillips, Dixon, Nebraska; Dr. F. J. Hess, Wayne, Nebraska; Dr. H. W. Frances, Bancroft, Nebraska; Dr. R. C. Richards, Newcastle, Nebraska; Dr. T. C. Knox, Marcus; Dr. E. J. Raw, Pierson; Dr. F. W. Glann, Climbing Hill; Dr. R. C. Granlick, Walthill, Nebraska; Dr. C. T. Ingham, Wayne, Nebraska; Dr. R. C. Glann, Bronson; Dr. R. M. Comney, Sergeant Bluff; Dr. A. J. Byerly, Hornick; Dr. W. D. Bushnell, Elk Point, South Dakota; Dr. G. W. Anderson, Early; Dr. H. N. Baker, Pierson; Dr. J. D. Ludlow, Laurel, Nebraska; Dr. M. O. Stauch, Whiting; Dr. M. B. Hilts, Sloan, and Dr. B. F. Wendel, Kingsley.

HOSPITAL NOTES

The Nurses' Home of the St. Joseph's Mercy Hospital at Waverly was dedicated June 11, Bishop Edward Heelan of Sioux City in charge. Mother M. Ursula and Mother M. Beatrice of Dubuque were present.

The staff of the Evangelical Memorial Hospital, Waterloo, consists of twenty members: Dr. E. T. Alfred, president; Dr. E. R. Shannon, vice-president; Dr. E. E. Magee, secretary and treasurer.

The dedication of the new nurses' home of St. Joseph's Mercy Hospital, Mason City, occurred May 28. Archbishop Keane made the chief address. Rev. Father Bacci of Mason City in charge of the services.

C. H. McNider and Dr. C. L. Marston participated in the services, delivering appropriate addresses. Dr. Marston is president of the staff.

A Matter of Profound Interest

We learn that four years ago bobbed hair was undignified and forbidden nurses on duty at the University Hospital, if not absolutely forbidden, was looked upon with so much disfavor that only nurses of the most rebellious spirit dared to bob their hair. Now after four years the process of evolution has advanced so far that nurses may wear their hair bobbed on duty.

Two hundred nurses on duty in the hospital have been emancipated and are free, whether the emancipation came by degrees, as by pinning on other hair to cover the bobbed heads when subject to inspection, or by a sudden and defiant rebellion, we are not advised. Knowing something about the tendencies of the times, we are surprised that those in authority should have had the temerity to object from the first; the processes of evolution cannot be stopped even by the mandate of the most autocratic ruler or legislative power.

The new nurses' home for Mercy Hospital, Waverly was dedicated June 11, 1925. Bishop Heelan of Sioux City conducting the ceremony.

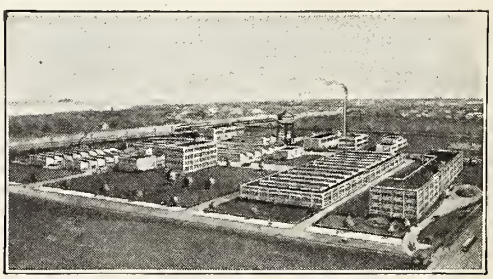
Doctors of Burlington met at Mercy Hospital May 29 and organized the Mercy Hospital staff, with Dr. H. B. Young as president; Dr. A. H. Vorwerk, vice-president, and Dr. George Dixon, secretary and treasurer.

The object of the organization of the staff is to bring the hospital under the standardized methods of the American College of Surgeons, in regard to the keeping of records and other hospitalization work.

Construction work has commenced on the new addition to the Burlington Hospital and the cost of building, together with the furnishing of four floors, will run approximately $175,000. Present plans call for completion by Christmas and steady work will complete it on schedule.

NEW ABBOTT LABORATORIES

The new plant of the Abbott Laboratories, pictured below, and now nearly ready, will be, when occupied, the finest complete pharmaceutical and research plant in the world. Here the newest synthetic, medicinal chemicals are made in large quantities by improved processes, insuring purity and accuracy. Here also are extracted from the crude drugs the medicinal principles used largely throughout the pharmaceutical industry as well as by the medical profession.



Larger quarters will be provided for the extensive research work now being carried on by a large staff of chemists and new buildings are being provided for the manufacture of the well-known Abbott pharmaceutical specialties.

The administrative office of The Abbott Laboratories, located for many years in Ravenswood, will be moved about October first of this year to the new plant. The postoffice address will be Waukegan, Illinois, twenty-five miles north of Chicago on the C. & N. W. R. R. About twenty-four acres of ground are owned by the Abbott Company to provide for the future expansion of their business.

PERSONAL MENTION

Dr. J. F. Herrick left May 19 for Atlantic City to attend the meeting there of the North American Radiological Society. He will stay over next week for the sessions of the American Medical Association, May 26 to 29. Dr. Herrick is a delegate of the Iowa Medical Society to the meeting of the American Association for the study of goiter, May 26.

Dr. John F. Veltman, physician and surgeon, opened an office in Winterset July 15. Dr. Veltman, who is a graduate of Northwestern University, took his interne work at West Suburban Hospital, Chicago, and at the Methodist Hospital in Des Moines.

Dr. and Mrs. A. W. Erskine are leaving Wednesday morning, May 20, for Atlantic City, where Dr. Erskine will attend a meeting of the Radiological Society of North America, of which he is president, also the annual meeting of the American Medical Association. On May 27, Dr. and Mrs. Erskine will sail from New York for Havre, on the S. S. Suffren, a French liner. They will go directly to Paris, then to Germany and England, and will sail for home from Southampton, July 4 on the S. S. Orca. While in Paris Dr. Erskine will visit the Curie Institute of Radium, and in Germany he will attend X-ray clinics at a number of universities. He also expects to visit Dr. Wetterer, a prominent x-ray man of Heidelberg. In London Dr. Erskine will give a talk on The Treatment of Cancer, at the International Congress of X-ray Specialists, and in Manchester he will attend clinics upon the invitation of Dr. Barclay, head of the British X-ray Society.—Cedar Rapids Republican.

Doctor F. C. Mehler, one of the oldest practicing physicians in the state was elected first vice-president of the State Medical Association at the annual meeting held at Des Moines. Dr. Mehler attended the convention returning Thursday evening before the Association elected the officers for the coming year. Friday noon he received a telegram from the president stating that he was elected first vice-president of the association. Dr. Mehler has never sought an office in the association although he has served on various boards for many years. The honor was conferred on him as a recognition for the many years of faithful service to his community and the medical profession in general. Dr. Mehler has practiced his profession for sixty-two years. He has practiced fifty-four years in New London.—New London Journal.

Dr. E. C. Weir, who has been in active practice in Portsmouth the past nineteen years, left July 1 for Chicago to enter the laboratory of Surgical Technic for an indefinite time. He will then locate at Council Bluffs. He will be succeeded by Dr. Grace, a graduate of Creighton Medical of Omaha. He has been in active practice at St. Joseph's Hospital the last year.

Dr. and Mrs. W. H. Hanchette will leave Sioux City for Los Angeles, California, where they will make their home. Dr. Hanchette has been prominent in the medical world for many years and has contributed greatly to health and improved sanitary conditions in Sioux City. Mrs. Hanchette has been active in social and church circles. Dr. Hanchette has been active in his practice in Sioux City for twenty years, before which time he practiced at Omaha, Nebraska.

Dr. Owen Preece, recently licensed to practice, will enter the office of Drs. O'Keefe and Brown, Waterloo.

Dr. I. C. Jerdee of Clermont and Dr. T. N. Walsh of Hawkeye go to Harvard Medical School, Boston, for a six weeks course of special medical study.

We have just received a copy of the Medical Herald, marked Westlake Professional Building, Los Angeles, California, containing an interesting article under the title "Syria and the American University", by Dr. John W. Shuman. It appears that after a considerable period as a professor in this institution, Dr. Shuman resigned, returned to the United States and located in Los Angeles.

Dr. Ross Huston and Judge W. S. Ayres of the Bankers Life Insurance Company, Dr. Carl Stuttsman of the Merchants Life, Dr. Martin Olson of the Central Life, Dr. Fred Wells of the Equitable Life, Dr. C. M. Whicher of the Royal Union and Dr. L. K. Meredith of the National Life Association, Des Moines, will attend a convention of American Life Insurance at Louisville, June 2-4.

Dr. George A. Bemis of Garner has been appointed a Colonel on Governor Hammill's staff.

MARRIAGES

Doctor Alfred Nesler of Dubuque, and Miss Marie Eunice Stuefer of Ann Arbor, Michigan, were married at Ann Arbor, June 20, 1925. Dr. Nesler is a graduate of the literary and medical departments of the University of Michigan. After graduation, Dr. Nesler was on the staff of the Youngstown Hospital, was resident physician at Philadelphia General Hospital, for two years, and later, surgeon at the Women's Hospital, New York City. Doctor and Mrs. Nesler will make their home in Dubuque.

Doctor Theodore D. Benjegerdes, intern University Hospital, Iowa City, and Miss Lola May Thompson of Northwood were married June 11th at Northwood.

Dr. Lyman Hoyt of Iowa City and Miss Helen Sawyer of Greenfield, were married June 10, 1925.

Dr. Carl E. Sampson of Creston and Miss Eileen Reardon, also of Creston, were married June 10, 1925. Dr. Sampson is a son of the well known Dr. F. E. Sampson of Creston.

OBITUARY

Dr. Delos N. Reeve of Allison, died at Mercy Hospital, Waverly, May 17 after three weeks' illness.

Dr. Reeve was born September 29, 1869. Graduated from the Medical School of George Washington University in 1896. He located first in Bristow, where he practiced sixteen years, when he moved to

Allison, where he made his home to the time of his death.

Dr. Thomas Byrnes of Davenport died at his home May 25, 1925, following a protracted illness.

Dr. Byrnes was born in Walcott, Iowa, May 6, 1872, graduated from the medical school of the Iowa State University in 1893. He practiced in Walcott until twenty-two years ago, when he moved to Davenport.

He is survived by three brothers who are practitioners of medicine, Dr. Roscoe Byrnes of Traer, Dr. Ralph Byrnes of Durant and Dr. Byrnes of Los Angeles, and one sister, Mrs. Walter L. Bierring of Des Moines.

Dr. Byrnes was married to Miss Nan Kroehuke, who, with one son and two daughters survive him.

Dr. Byrnes was a member of the Scott County Medical Society, Iowa State Medical Society and the American Medical Association.

Dr. George F. Severs of Centerville, died at his home June 22, 1925.

Dr. Severs was born near Centerville, Iowa, April 20, 1858. Received his education at Drake University, and his medical degree from the Eclectic Medical School at Cincinnati, Ohio, in 1889, and began the practice of medicine in Centerville, where he continued in practice for thirty-five years, until failing health compelled his retirement. For thirteen years Dr. Severs was the Eclectic member of the State Board of Health and Examiners. He is survived by his wife and three daughters.

Dr. David Q. Storie of Chariton died near Northwood, Iowa, June 21, 1925, as the result of an automobile accident.

He was born in Chariton July 16, 1874. Graduated from the Chariton High School in 1892 and from Rush Medical, Chicago, in the class of 1901. On November 21, 1901, he married Miss Nelle Smith, who with three children survive him.

Dr. M. Y. Sellers died at his home in Moulton, May 26, 1925. He was born in Greencastle, Indiana, August 5, 1839. When fifteen years old he came with his father's family to Iowa and located on a farm near Albia. He graduated from the Keokuk Medical College in the class of 1880. Dr. Sellers then came to Moulton, where he practiced until the time of retirement several years ago. Since then he has made his home with his son, Dr. Earl Sellers. He was a resident of Moulton forty-five years.

The death of Dr. John Addison Fordyce on June 4, 1925, has deprived the medical world of an able teacher and research worker. His continued studies and investigations will go down into the annals of modern medicine as distinct contributions to the science and art of dermatology and syphilology.

Dr. Fordyce was born in Guernsey County, Ohio, on February 16, 1858. He studied at Adrian College, the Chicago Medical College, and the University of Berlin, receiving the degree of Doctor of Medicine from the two last named institutions, from the Chicago Medical College in 1881 and from the University of Berlin in 1888. As early as 1891 his Alma Mater, Adrian College, from which he previously received the A.B. and A.M. degrees, conferred upon him, as a recognition of outstanding service and achievement, the honorary degree of Doctor of Philosophy.

Dr. Fordyce was professor of dermatology and syphilology at the College of Physicians and Surgeons of Columbia University, special regional consultant of the Division of Venereal Diseases of the United States Public Health Service, visiting dermatologist to the New York City Hospital, and consulting dermatologist in the Neurological Institute, Presbyterian Hospital, and Women's Hospital of New York City. He was known for his genuine and unselfish devotion to and interest in the prevention of disease and the advancement of medicine. He was ever ready to join enterprises which offered opportunities for service. In 1920 he gave a notable series of lectures, on the diagnosis and treatment of syphilis, at the Institute on Venereal Disease Control and Social Hygiene held at Washington, D. C., under the auspices of the United States Public Health Service. He was also an active member of a number of medical and scientific societies.

In 1896 Dr. Fordyce called attention to a disease affecting the mucous membrane of the lips, and consequently known as the "Fordyce Disease". This gave impetus to a further study of this cutaneous infection by Dr. Fordyce and others, which led to its definite diagnosis and mode of treatment. He is also known for his research in quantitative studies of syphilis from a clinical and biological point of view, neurosyphilis, spinal fluid examinations, congenital syphilis, the pathology of syphilis, and dermatology.

Dr. Fordyce was a prolific medical writer. He is particularly known for his contributions to Morrow's System of Genitourinary Diseases, Syphilology and Dermatology, Parker's Surgery by American Authors, and Wood's Reference Handbook of the Medical Sciences. He is the author of many articles in medical journals and magazines. He was editor of the Journal of Cutaneous and Genitourinary Diseases from 1888 to 1896 inclusive, leading this specialized professional journal through an important stage in its growth and development.

Dr. John Addison Fordyce will be remembered by many students as a skillful teacher and by the medical profession at large for his research contributions to a more complete knowledge and practice of dermatology and syphilology.

Dr. J. C. Box, for approximately forty-five years a practicing physician in Ottumwa, died May 18, 1925. He was seventy-two years old. Dr. Box recently retired from office practice, and had been in ill health for some time.

Dr. Knowles was not a medical doctor. He ought to have been. His experiences entitle him to notice in our pages.

Dr. Wilbur F. Knowles, veteran of the Civil War and a resident of Sioux City and vicinity since 1869, passed away at his home, 2020 Court street, Tuesday evening, May 26, 1925, after a lingering illness.

Born near Elk Grove, Illinois, December 7, 1837, Dr. Knowles came to Iowa in 1852, settling at Waterloo. In 1856 he went by rowboat down the Cedar river and into the Missouri river, passing down that stream to Leavenworth, Kansas. There he joined the government expedition under General Harney and General A. S. Johnson, which was sent to Utah against the Mormons, who were opposing the elected governor. In 1861 Dr. Knowles left from San Francisco, Calif., for Lima Peru, where he spent one year. Returning to the United States he settled at Morris Island, near Charleston, North Carolina, serving in the United States secret service under General Q. A. Gilmore.

During his service at Morris Island, Dr. Knowles aided in the capture of Belle Boyd, famous confederate spy at Charleston. Later he enlisted in the Fifty-fourth Pennsylvania volunteer regiment, serving with that organization in the union army until the close of the civil war.

In 1869 Dr. Knowles settled in Sioux City, remaining here until he moved to a farm in Plymouth county near Le Mars. In 1875 he sold the farm land he had acquired for $25 an acre, which was the first time in the history of Plymouth county that farm land had been sold at that high a price. He then purchased a hotel at Covington, Nebraska, which was destroyed by fire in 1877.

Coming back to Sioux City Dr. Knowles purchased the Madison Hotel, which he operated until 1881. Disposing of his interests here, he purchased a farm near James, Iowa, and resided there until 1910, when he returned to Sioux City, which was his home until his death. He was a member of General Hancock Post, G. A. R., of this city.

During his practice as a veterinarian Dr. Knowles invented the Knowles casting harness, a contrivance used by veterinarians for fastening horses. The patent rights on this invention were sold to the government and during the world war the government used the harnesses in the army remount depots.

The survivors are one son, Dr. C. B. Knowles of Sioux City, three grandchildren, Mrs. Herbert Johnson, Sioux City; John W. Knowles, Sioux City, and Mrs. L. G. Gray, Lincoln, Nebraska, and one great-granddaughter.—Sioux City Journal.

BOOK REVIEWS

AN AFRICAN HOLIDAY

By Richard L. Sutton, M.D., L.L.D., Fellow of the Royal Geographical Society of Great Britain, With 102 Original Illustrations. The C. V. Mosby Company, St. Louis, 1924. Price, $2.25.

The reader may now lay aside his medical book or his medical journal and refresh himself as a sportsman by starting with Dr. Sutton's party from Plymouth, England, for Cherbourg, France, and on to Marseille and on to Nairobi, the capitol and principal city of British East Africa.

On the fifth day from Marseille the party reached Port Said and on to British Somaliland, and finally Cape Guardafin, when they began skirting the eastern African coast. At Nairobi the outfits are secured. It is here that the real sport begins.

In the last chapter hints are presented on transportation and equipment.

On the way from Marseille to Port Said many interesting notes are offered in relation to the personnel of the party and from Port Said to Nairobi many stops are made and observations as to the natives, their customs, government and geographical relations.

After leaving Nairobi the hunting begins, the big game and the personal experiences, both with the game and the natives. To those who are interested in sports, travel and hunting, this book will be of marked interest and will be a certain relief from the cases and worries of the practice of medicine. The book is very attractive in its make-up, and even if the reader is not a sportsman, he cannot escape the spirit of adventure which is not confined to the Englishman, but extends to the American as well.

THE SURGICAL CLINICS OF NORTH AMERICA

Volume IV, No. 6; 166 Pages, With 43 Illustrations and Complete Index to Vol. IV. December, 1924. Price, Paper $12.00. Cloth, $16.00. W. B. Saunders Company.

This number is the product of the clinic of Dr. Frank H. Lahey of Boston. This is a clinic of unusual interest in that it is the work of a single group under the direction of the brilliant Boston surgeon. Those associated with Dr. Lahey are Doctors Lincoln F. Sise, Burton E. Hamilton, D. Crosby Green, Edwin B. Dunphy, Howard M. Clute, Robert L. Mason, and Sara M. Jordan.

The volume begins with a presentation of "The Evolution of the Thyroid Clinic", by Dr. Frank H. Lahey, followed by a series of clinical discussions on "Preliminary Ligation in Thyroidism", by Dr. Lahey; "The Technic of Anesthesia for Thyroid Operations", by Dr. Lincoln F. Sise; "The Treatment of Adenoma of the Thyroid", by Dr. Lahey; "Aberrant Goitre", by Dr. Lahey; "The Heart in Toxic Thyroid States", by Dr. Burton E. Hamilton, including "Heart Failure (Congestive) Associated with Thyroid Toxicity", "Laryngeal Paralysis and Surgery of the Thyroid", by Dr. Crosby Green, "Treatment of the Eyes in Exophthalmic Goiter", by Dr. E. B. Dunphy, "Difficulties of Diagnosis of Toxic Symptoms Referable to the Thyroid Gland" and "Complications Subsequent to Thyroidectomy" by Dr. Howard M. Clute.

Passing from the thyroid, we come to another group of organs: "Simple Serous Cysts of the Kidney", by Dr. Howard M. Clute. Also including a

second clinic by the same author, "Non-Calculous Ureteral Obstruction", "Treatment of Common Duct Biliary Fistula by Anastomosing Them Into the Intestinal Canal", also "The Treatment of Duodenal Fistula by Suction", by Dr. Lahey; "Tetany", by Dr. Robert L. Mason, concluded by a clinical discussion on "Functional Diseases of the Colon, Differentiated from Appendicitis and Cholecystitis", by Dr. Sara M. Jordan.

We have presented all the titles included in this clinic for the purpose of showing the advantages of group work in a more or less exhaustive study of a definite group of subjects. For instance, a full study of certain thyroid problems as set forth by Dr. Lahey and his associates.

All the discussions are abundantly illustrated.

BASAL METABOLISM IN HEALTH AND DISEASE

By Eugene F. DuBois, M.D., Medical Director, Russell Sage Institute of Pathology; Associate Professor of Medicine, Cornell University Medical College. Lea & Febiger. Philadelphia and New York, 1924.

In this interesting book, the author has succeeded in his object which he states in the preface as an "attempt to bring basal metabolism out of the realm of pure physiology into the domain of clinical medicine".

The first four chapters give a review of the principles of physics, chemistry, and physiology involved in determining heat production in man. A valuation of the results obtained by different types of apparatus is based on the author's personal experience. There is a concise theoretical discussion of the various tables which have been used in the estimation of the normal basal metabolic rate. The variations in metabolism in disease are briefly described; including over and under nutrition, diabetes, endocrine disorders, diseases of the blood, heart, and kidneys, fever, mental and nervous diseases, emotions, and drugs. The book abounds in charts and diagrams and tabulations of the results of various investigators. A complete bibliography of the whole subject is not attempted, but adequate reference is made to the literature upon which his conclusions are based. There is an index of authors as well as a subject index.

To one who wishes a set of directions on how to make a basal metabolism test, this book will be disappointing. Such information is supplied with each instrument. To the student or clinician who is making a serious attempt to evaluate the facts of metabolism in diagnosis and treatment, the work is invaluable.

The author has well stated the need and scope of this book on page seventy-five. "The man who does not know something about the workers of the last fifty years is in great danger of repeating many of their errors. He also wastes much time by inventing 'improvements' which were tried and discarded in previous generations." Dr. DuBois' book gives historical facts in a concise, interesting manner and his recommendations regarding the best procedures to use, are based on a practical common sense which is refreshing in this field, which, unfortunately has been much befogged by a superfluity of unscientific opinions.

Philip A. Shinn, M.D.,
U. S. Veterans' Hospital No. 95.
Northampton, Mass.

A TEXT BOOK OF PRACTICAL THERAPEUTICS WITH ESPECIAL REFERENCE TO THE APPLICATION OF REMEDIAL MEASURES TO DISEASES AND THEIR EMPLOYMENT UPON A RATIONAL BASIS.

By Hobart Amory Hare, B.Sc., M.D., L.L.D., Professor of Therapeutics, Materia Medica and Diagnosis in the Jefferson Medical College, Philadelphia. Nineteenth Edition, Enlarged, Thoroughly Revised and Largely Re-written. Illustrated with 144 Engravings and 8 Plates. Lea & Febiger, 1925. Price, $7.00.

The announcement that Hare's Therapeutics had been revised and largely re-written is sufficient to excite an interest in the book. The fact that this is the nineteenth edition is a sufficient assurance of its merit. The rapid changes in the methods of treatment of diseases is a reason for frequent editions. The position which this work has held for so many years assures it a respectable place, but would not satisfy the author or publishers, who believe that changes in remedies and new application of remedies are constantly taking place.

It is difficult to place a final value on a remedial agent and new evaluations therefore must be made from time to time, imposing a considerable responsibility on writers and publishers of therapeutics, which is met in this edition.

THE DISTRIBUTIONS OF PHYSICIANS IN THE UNITED STATES

By Lewis Mayers and Leonard V. Harrison. General Education Board, 61 Broadway, New York, N. Y., 1924.

The interest manifest by physicians and laymen in the relation to the distribution of medical practitioners led the Education Board to investigate the subject with the view of determining what the facts are, so far as possible. It has been contended that physicians are following the general tendency to drift into the larger towns and cities, for the same reason that other people do. That the practice in large towns is more pleasant and profitable. That the people in small villages do not make the life of the physician interesting. That there is an increasing tendency to take up special lines of practice and to be so located that the practitioner may avail himself of modern methods of diagnosis, and the facilities afforded by hospitals. Another holds the

idea that the expense of a modern medical education forbids his locating him a small town where the income may be quite limited. It is also contended that the present standards of medical training unfit a man for rural practice. Probably all of these conditions are determining factors. Doctors, like other people, are influenced by what they hold to be personal interests.

After a brief introduction a chapter is devoted to the Basic Factors, which includes a consideration of the above suggestions. Chapter two presents a statistical discussion of the Distribution of Physicians. Chapter three, Accessibility and Cost, and chapter four The Vacant Rural Location. Chapter five, The Influence of Medical Education.

In these five chapters the various reasons for the changes and the changing conditions are evaluated. It is not apparent that there is a shortage of physicians, and so the question of location is now as it always has been, a matter of personal interest and choice. If the people who once made a rural practice desirable move to larger centers of population where the opportunities are greater, the medical practitioner will be governed by the same influences.

FROM INFANCY TO CHILDHOOD, THE CHILD FROM TWO TO SIX YEARS

By Richard M. Smith, Assistant Professor of Child Hygiene, Harvard University, Associate Physician Children's Hospital, Visiting Physician Infants' Hospital, Boston. The Atlantic Monthly Press, Boston.

The purpose of this book is to bring to the attention of those who have charge of infants and young children the importance of watching the growth and development of the child through infancy and early childhood. The author insists on a complete physical examination every six months or at least once every year by a physician, and that a record should be made of these examinations for comparison and thus a detection of any material impairment in its development, not only physically, but also mentally, and to discover if the development proceeds is in a normal manner.

As this book is intended primarily for the mother, nurse, or other attendant having the care of the young child, advice and directions are given as to the watchfulness to be exercised in relation to food, clothing, habits and other matters that should be observed.

MEDI-CULT, THE A, B, C OF THE MEDICAL PROFESSION

By B. F. Lorance, M.D. The Gorham Press, Richard G. Badger, Boston.

In the preface it is stated that: "The purpose of this little volume is to make clear to the average laymen some of the fundamental principles of health and disease, while giving a bird's-eye view of the science of medicine, and those engaged in the practice of the healing art."

The author announces himself as a regular physician and proceeds to a classification of those engaged in the practice of the healing art and describes the peculiarities: Homeopathy, Christian Science, Osteopathy, Chiropractors, and then Regular Medicine and the Germ Theory of Disease.

In his examination of the peculiarities of the different schools of practice, the author deplores the existence of dogmatic systems of medicine and the advantages of a system of medicine based on scientific discoveries. No attempt is made to ridicule any school of practice but presents a calm and clear reason why the layman should select a physician trained in a broad and liberal way. This is a book which may with great advantage be read by the average layman.

We are now presenting a series of four volumes of the Funk & Wagnalls Health Volumes with the following titles. It will at once be apparent, from the titles, that these volumes discuss matters of great importance to those to whom they are directed.

These volumes may be secured from the publishers:

LOVE AND MARRIAGE: NORMAL SEX RELATIONS

By T. W. Galloway, Ph.D., Litt. D.; Associate Director of Educational Measures. American Social Hygiene Association. Net, 30 Cents Per Copy.

THE EXPECTANT MOTHER; CARE OF HER HEALTH

By R. L. DeNormandie, M.D., Instructor in Obstetrics, Harvard Medical School. Net 30 Cents Per Copy.

TUBERCULOSIS; NATURE, TREATMENT, AND PREVENTION

By Linsly R. Williams, M.D., Managing Director, National Tuberculosis Association. Net, 30 Cents Per Copy.

VENERAL DISEASES, THEIR MEDICAL, NURSING, AND COMMUNITY ASPECTS

By W. F. Snow, M.D., General Director, American Social Hygiene Association. Net, 30 Cents Per Copy.

A TEXT-BOOK OF MATERIA MEDICA FOR NURSES

By A. L. Muirhead, M.D., Late Professor of Pharmacology, Creighton Medical College, Omaha, Nebraska, and Edith P. Brodie, A.B.R.N., Instructor in Materia Medica and Therapeutics, Washington University School of Nursing, St. Louis, Missouri; Second Edition. C. V. Mosby Company, St. Louis, 1924. Price, $2.00.

This book of 190 pages is written for the undergraduate nurse in training and is divided into twenty-two chapters, including pharmaceutical preparations,

the use of drugs and the treatment of diseases, as they come under the supervision of the nurse. There is a chapter on anesthetics, including the different anesthetic agents. There is also a chapter on antitoxins and vaccines.

This is a book well adopted to the use of pupil nurses and the knowledge contained in it will be extremely valuable to the nurse under the direction of the attending physician.

THE PRACTICAL MEDICINE SERIES

Comprising Eight Volumes of the Year's Progress in Medicine and Surgery. Under General Editorial Charge of Charles L. Mix, A.M. M.D. The Year Book Publishers, Chicago. Volume Four, Pediatrics, by Isaac A. Abt, M.D., 1924. Price, $2.00.

The volume before us of 381 pages, edited by Dr. Isaac A. Abt, presents the progress of pediatrics during the year, collected from many sources by Dr. Johanna Heumann. The student and practitioner may find a review of the important things that have been brought out recently. The studies are brief and concise and full of information.

NEW AND NON-OFFICIAL REMEDIES

In addition to the articles enumerated in our letter of April 30, 1925, the following have been accepted:

Lederle Antitoxin Laboratories:

Poison Ivy Extract—Lederle (In Almond Oil).

Poison Ivy Extract—Lederle (In Almond Oil) 1 c.c.

Rabies Vaccine—Lederle (Semple Method).

H. K. Mulford Company:

Ash Tree Pollen Dried—Mulford; Bermuda Grass Pollen Dried—Mulford; Box Elder Pollen Dried—Mulford; Canary Grass Pollen Dried—Mulford; Careless Weed Pollen Dried—Mulford; Corn Pollen Dried—Mulford; Cottonwood Pollen Dried—Mulford; Daisy Pollen Dried—Mulford; Dandelion Pollen Dried—Mulford; Dock Pollen Dried—Mulford; False Ragweed Pollen Dried—Mulford; Goldenrod Pollen Dried—Mulford; High Ragweed Pollen Dried—Mulford; Johnson Grass Pollen Dried—Mulford; June Grass Pollen Dried Mulford; Lamb's Quarters Pollen Dried—Mulford; Low Ragweed Pollen Dried—Mulford; Maple Pollen Dried—Mulford; Marsh Elder Pollen Dried—Mulford; Mountain Cedar Pollen Dried—Mulford; Mugwort Pollen Dried—Mulford; Oak Tree Pollen Dried—Mulford; Orchard Grass Pollen Dried—Mulford; Perennial Rye Grass Pollen Dried—Mulford; Plantain Pollen Dried—Mulford; Redroot Pigweed Pollen Dried—Mulford; Redtop Pollen Dried—Mulford; Russian Thistle Pollen Dried—Mulford; Rye Pollen Dried—Mulford; Sagebrush Pollen Dried—Mulford; Shad Scale Pollen Dried Mulford; Sheep Sorrel Pollen Dried—Mulford; Slender Ragweed Pollen Dried—Mulford; Sugar Beet Pollen Dried—Mulford; Sunflower Pollen Dried—Mulford; Sweet Vernal Grass Pollen Dried—Mulford; Timothy Pollen Dried—Mulford; Velvet Grass Pollen Dried—Mulford; Walnut Tree Pollen Dried—Mulford; Western Ragweed Pollen Dried—Mulford; Wormwood Pollen Dried—Mulford; Cocklebur Pollen Dried—Mulford.

Insulin—Mulford:

Insulin—Mulford 10 Units, 5 c.c.

Insulin—Mulford 20 Units, 5 c.c.

Insulin—Mulford 40 Units, 5 c.c.

Parke, Davis & Co.:

Typhoid Vaccine (Prophylactic) 30 c.c.

Typhoid Paratyphoid Vaccine (Prophylactic) 30 c.c.

Powers-Weightman-Rosengarten Co.:

Stovarsol

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LOW BACK PAIN—AN ANATOMICAL AND CLINICAL STUDY*

ARTHUR STEINDLER, M.D., F.A.C.S., Iowa City

Probably no group of orthopedic conditions offers such difficulties for diagnosis as does the back pain in the lumbar and sacral region. The reason for this may be found in very extensive symptomatological significance of this type of pain, which, in possibilities of interpretation outrivals headache. Careful clinical study carried on by numerous observers has made it possible to group the symptoms of low back pain, and to single out the symptomatic from the idiopathic groups. Symptomatic low back pain has a very wide interpretation which embraces almost all fields of medical specialties.

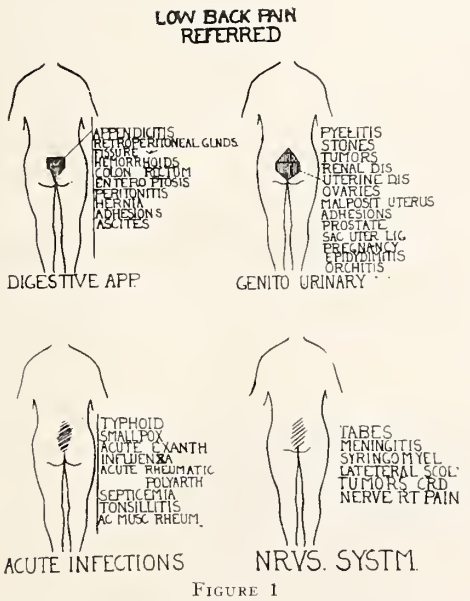

FIGURE 1

It is the purpose of this paper to consider the idiopathic backache only, and that only insofar as mechanical or dynamic elements enter into production of this symptom. It is furthermore assumed that of all the structures entering in the formation of the lower back, i. e., the region of the lumbosacral and sacroiliac junctions, the ligamentous structures are, in response to mechanical agencies, the first to suffer pathological changes. In considering the large majority of the so-called mechanical group of low back pain as primarily ligamentous sprains, one is justified in this assumption by analogy with the features present in injuries to other ligamentous structures such as the ligaments of the ankles or knees. The ligamentous injuries consist in demonstrable ruptures and tears of the fibres with extravasation of blood and subsequent formation of scar tissue.

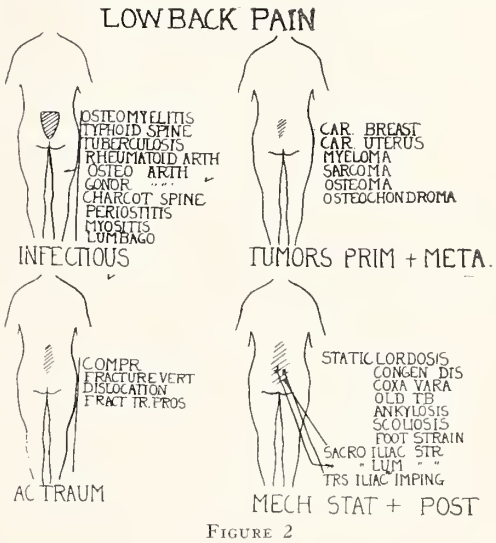

FIGURE 2

In the lower back these sprains may be divided for clinical reasons into two main groups: sacroiliac and sacrolumbar. The sacroiliac involves the powerful ligaments filling the contact surfaces between the sacrum and os ilei as well as the ligamentous structures surrounding the sacroiliac joint. The sacrolumbar junction involves the powerful anterior ligaments in front of the lumbar spine and the sacrum, the articulation between the sacrum and the fifth lumbar and their reinforcements and finally the ligamentous apparatus from the bodies and transverse processes of the fifth lumbar to the posterior border of the os ilei. The numerous roots of the sacrolumbar plexus as well as the large sympathetic strands and ganglia secondarily enter into the formation of the clinical picture by their vicinity to the ligamentous structures and by the possi-

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bilities of their being affected both by position and motion of the spine, and by the inflammatory or traumatic effects of the sprain.

Should these conditions be classified as true ligamentous injuries? If so, they must show the peculiarities of ligamentous sprains observed in other regions of the body and they must be subjected to the general rules governing strains.

a. There must be a plausible and an anatomical demonstrable mechanism of its production by excess motion; the effect of excess motion upon surrounding structures.

b. There must be positions or attitudes aggravating the sprain.

c. There must be positions or attitudes relieving it; forced attitudes.

d. There must be a definite tendency to repair under immobilization.

Among 300 cases of low back sprain, which were considered to be of mechanical or dynamic origin, 213 were analyzed. In order to evaluate the data which were given as the mode of production of the strain from the mechanical point of view, anatomical studies were made on the cadaver. The primary object in view was to ascertain under what mechanical condition tension or relaxation of the ligamentous structures would occur and what the effect would be upon the neighboring structures, especially the nerves, which were likely to be affected. The result of this study is illustrated in the anatomical chart (figure 3), revealing the following important points:

1. In forward flexion strains and stress is increased in the posterior sacroiliac ligaments, the erector spinal muscles, and their aponeuroses.

2. In backward bending, the stress was increased in the sacro-lumbar junction; the same effect was produced by an abnormally horizontal sacrum, or a wedged-shaped fifth lumbar vertebrae. (Forward shearing stress). The anterior longitudinal ligaments are under tension. In this condition also the distance of the tips of the fifth transverse processes from the anterior surface of the os ilei was increased producing strain upon the ligaments between these points.

3. In side bending, it was found that the upper roots of the lumbo-sacral plexus were relaxed upon the side of concavity, partly on account of the lateral deviation and partly on account of the forward rotation on the concave side. The same structures on the opposite side were put on tension.

4. Increased lordosis also produced tension of the sympathetic tracts and lower ganglia.

Having examined in the normal back the effects of excess motion and mechanical strain upon the ligamentous apparatus and the neighboring structures of the regions involved, it is next necessary to consider the so-called anatomical variations of this region and their influence upon the production of mechanical sprains with the attending clinical symptoms. A great deal has been written on anatomical variations. The shape and form of the transverse process of the fifth lumbar has been carefully studied and many types of anomalies have been described. The same may be said of the shape of the body of the fifth lumbar, of the position of the articular processes, its relation to sacrum and iliac crest, of the formation of the sacrum, the development of the neural arches, and of many other anatomical variations which have been described in great abundance by American and foreign writers.

We are inclined to believe, however, that the most important factors which predispose for the mechanical production of low back pain are:

1. Abnormal inclination of the pelvis resulting in increase of the forward shearing stress between the fifth lumbar and the upper surface of the sacrum; forward displacement of the fifth lumbar—spondylolisthesis.

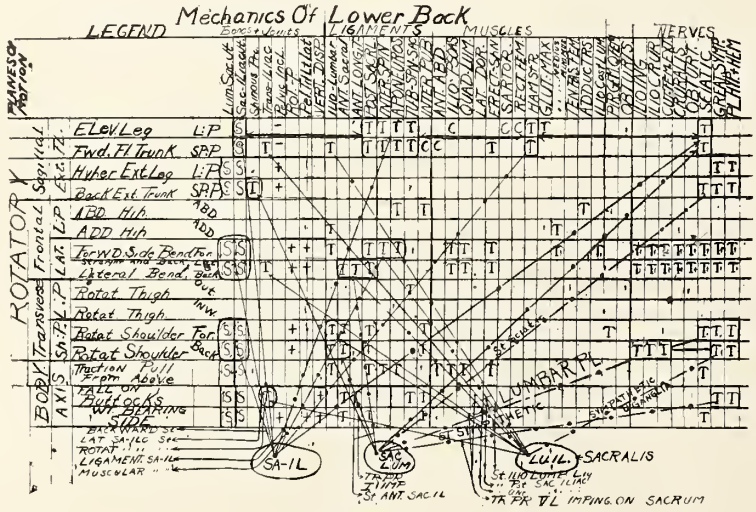

FIGURE 3

2. The length of the transverse processes and their proximity to the sacrum and os ilei; impingment of transverse processes.

3. The incomplete closure of the neural arches in the lumbar and sacral region—spina bifida occulta.

4. Developmental variations of sacralization or hemi-sacralization.

5. Static anomalies of the pelvic position.

All these factors must be considered as potential in the production of back strain because all of them restrict the normal range of motion of the spine. The greater the restraint imposed upon an individual spine by virtue of its anatomic make-up, the greater and the more numerous are the opportunities to transgress the allotted range of motion, to strain the ligamentous safeguards and to injure the adjacent structure. The greater the restriction the weaker, potentially, is the back. These two view points, namely, first, the effect of excess motion of the lumbo pelvic region in different directions, upon the structures of this region, and, secondly, the anatomical variation restricting lumbo sacral motion within physiological limits were then applied to the clinical study of the material at hand.

Excluding all cases of lower back pain from other causes, the cases of purely mechanical low back sprain numbered 213. Of these 124 were sacroiliac sprains; 78 sacrolumbar sprains and 11 cases combinations of sacroiliac and sacrolumbar sprains.

The cases were grouped as follows:

1. Traumatic cases, with fifty-five sacro-iliac and thirty-five sacro-lumbar sprains and eight cases of combinations.

2. Occupational cases, with seventeen sacro-iliac, nine sacro-lumbar strains and three cases of combinations.

3. The postural group, showed eighteen cases of the sacro-iliac and twenty-six of the sacro-lumbar sprain.

4. Other chronic traumatic strains not classified, with thirty-four sacro-iliac and eight sacro-lumbar sprains. (Tables I and II.)

A. *Anatomical Variations*—The study of the different antomical variations has led to some interesting observations. In the first place only seventy-seven or 35 per cent of the patients showed anatomical variations of the lower spine.

1. Increase of the inclination of the pelvis with the production of a pronounced forward shearing stress between the fifth lumbar and the sacrum was observed in thirty-one cases or 15 per cent led by the traumatic group with twelve cases or 6 per cent. Only 3 per cent belong to the sacro-iliac; the other 12 per cent to the sacro-lumbar group.

2. Impingment of the fifth lumbar transverse process with contact between the transverse process and the sacrum or ilium was noted in twenty-four cases or 12 per cent in which group also the traumatic section leads with fourteen cases or 7 per cent of the total. In this group the sacro-iliac group figured with 7 per cent while the sacro-lumbar showed 5 per cent of the total number of cases.

3. Sacralization and hemisacralization, either bilateral or unilateral, it was observed only in ten cases or 5 per cent of the total; the traumatic group leading with six cases or 3 per cent. One-half of the cases or 2½ per cent were of the sacro-iliac, and 2½ per cent of the sacro-lumbar type. (Tables III and IIIa.)

B. *Posture*—Analysis of the posture of the patient was made from the clinical standpoint as well as from the anatomical. The tilt, either

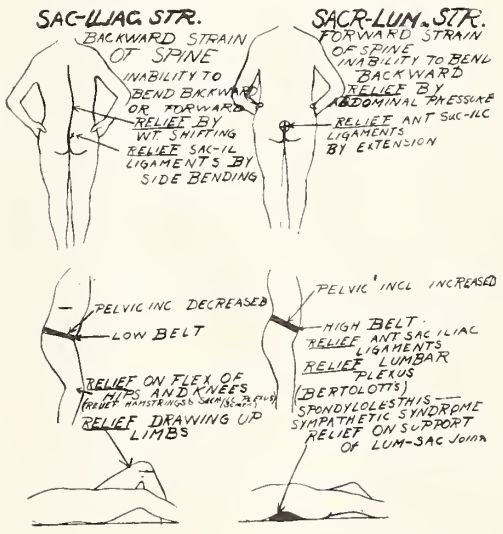

Figure 4

homolateral, or contralateral, was found to be especially characteristic of the sacroiliac group while the lordosis with increased shearing stress was greatly preponderant in the sacrolumbar group. Anatomically normal spines shared in the tilt as well as the spines with variations, though numerically there was hardly a preponderance of one over the other. In lordosis, however, we see that spines with the anatomical variation greatly preponderate over those with normal sacrolumbar region. Fully ninety-eight, or almost 50 per cent of the cases showed normal and symmetrical posture both in lateral and posterior direction in spite of the presence of distinct sacroiliac sprain. In 103 cases there was deviation of posture either in the shape of a lateral tilt or forward flexion, or lordosis or rotation. Lateral tilt was observed in fifty-seven cases out of a total of ninety-three cases of the sacroiliac group, or 57 per cent, of which homolateral tilt was seen in fourteen and

contralateral in 43 per cent. The sacrolumbar group figures only with 2.7 per cent lateral tilt. Conversely, in lumbosacral lordosis or increased inclination of the pelvis, the sacroiliac group figures only with 2 per cent out of ninety-three cases while the sacrolumbar group figures with 50 per cent, of which six, or 25 per cent were normal spines, and thirty out of forty-nine, or 60 per cent were spines with anatomical variation. (Tables IV and IVa.) From this latter observation it can be seen that there is clinically a certain regularity in the appearance of lateral tilt, especially in the contralateral in the sacroiliac group, which tallies very well with the anatomical findings mentioned above; and there is also a definite relationship between exaggerated lordosis and sacrolumbar sprain, likewise commensurate with the anatomical findings.

C. In regard to radiation of pain by involvement of the roots of the sacrolumbar and sympathetic plexuses, the sciatic nerve is by far the most frequently involved in the sacroiliac group, while in the sacrolumbar group, the lumbar plexus is more often producing symptoms. Out of a total of 187 cases in which data for radiation were obtained, no radiation was present in ninety-three cases while radiation of the sciatic nerve was found in sixty-six cases or 36 per cent, of the total of 187. Among these the sacroiliac group showed fifty-three cases of sciatic radiation or 50 per cent of the total number of sacroiliac cases examined for radiation, and here again the normal spine showed thirty-eight cases or 45 per cent of their total number, while the anatomical spines showed fifteen cases or 62 per cent of their total number. In sacrolumbar sprain the total of sciatic radiation was only nine, or 13 per cent, of the total number of sacrolumbar sprains examined for radiation. On the other hand, lumbar radiation was found in twenty-two cases or 12 per cent of the total of 187. Of the cases examined for radiation in this group, sacroiliac sprain only figures with two cases, or 2 per cent of the total of all sacroiliacs, or 10 per cent of all cases with lumbar radiation; while sacrolumbar sprain figures with twenty cases, or 30 per cent of all sacrolumbar sprains or 90 per cent of all cases with lumbar radiation. This again

TABLE I—LOWER BACK SPRAIN

GROUPS: CLINICAL

	Sacroiliac	Sacrolumbar	Combined	Total	
Traumatic—Male	32	23	4	59	
Traumatic—Female	23	12	4		39
Occupational—Male	9	4	2	15	
Occupational—Female	8	5	1		14
Postural—Male	3	13		16	
Postural—Female	15	13			28
Other Causes—Male	21	4		25	
Other Causes—Female	13	4			17
Total	124	78	11	115	98
	(M 65)	(M 44)	(M 6)	M	F
	(F 59)	(F 34)	(F 5)		

TABLE II—LOWER BACK SPRAIN

GROUPS: CLINICAL AND ANATOMICAL

	Traumatic			Occupational			Postural		Others	
	SIL	SL	C	SIL	SL	C	SIL	SL	SIL	SL
Spine—Normal	24	9	2	8	1	1	2	2	15	1
Male 65										
Variation	8	14	2	1	3	1	1	11	6	3
59										
Normal	20	3	2	8	4	1	12	3	11	2
Female 66										
Variation	3	9	2			1	3	10	2	2
32										
	55	35	8	17	8	4	18	26	34	8
	98			29			44		42	
Total 213	46%			13.6%			20.7%		19.7%	

TABLE III—LOWER BACK SPRAIN
ANATOMICAL VARIATIONS IN CLINICAL GROUPS

			Horizontal Sacrum, S. S.	Imp. 5 L	Sacral-ization	Sp. Bif. Occulta	Asymm. Pelvis
Traumatic	Sacroiliac						
	55		2	5	3	1	
98	Sacrolumbar						
	35		8	7	3	4	
	Combined	8	2	2			
Occupational	Sacroiliac	17					
29	Sacrolumbar	9	1	2			
	Combined	3	1				
Postural	Sacroiliac	18	2		1		
	Sacrolumbar	26	9	1	1	2	2
Others	Sacroiliac	34	1	6	1		1
	Sacrolumbar	8	5	1	1	1	1
			31	24	10	8	4

Total cases
213 Total variations 77 or 35%

TABLE IIIa—LOWER BACK SPRAIN
DISTRIBUTIONS OF ANOMALIES BY GROUPS

	Horizontal Sacrum	Imping. 5th L	Sacral-ization	Sp. Bif. Occulta
Traumatic	12 or 6%	14 or 7%	6 or 3%	
Occupational	2 or 1%	2 or 1%	2 or 1%	
Postural	11 or 5%	2 or 1%		
Other	6 or 3%	7 or 3%	2 or 1%	
Total	31 or 15%	24 or 12%	10 or 5%	
Sacroiliac	3%	Sacroiliac 7%	Sacroiliac 2.5%	
Sacrolumbar	12%	Sl. 5%	Sl. 2.5%	

TABLE IV—LOWER BACK SPRAIN
POSTURAL DEVIATION BY CLINICAL GROUPS

	Sym	Tilt		Kyph		Lordosis		Rotation	Total	
		hl	cl	s	l	s	l	s l	s	as
Normal Sacroiliac	50	11	30	2					50	43
Variation	11	2	10	1		2			11	15
Normal Sacrolumbar	17				1	6			17	7
Variation	17					23	7	2	17	32
Normal Sacroiliac and Sacrolumbar	3		1				1		3	2
Variation		1	2			1			0	4
Total	98	14	43	3	1	32	8	2	98	103
		57		4		40				

TABLE IVa—LOWER BACK SPRAIN
POSTURAL DEVIATION PERCENTAGE TABLE

Lateral Tilt—

Sacroiliac	Total	53 (93) or 57%
	Homol	13 (93) or 14%
	Contra	40 (93) or 43%
Sacrolumbar	Total	2 (73) or 2.7%

Lordosis—

Sacroiliac	Total	2 (93) or 2%
Sacrolumbar	Total	36 (73) or 50%
	Normal	6 (24) or 25%
	Variations	30 (49) or 60%

shows the preponderance of lumbar radiation in the sacrolumbar, and of sciatic radiation in the sacroiliac group. (Tables V and Va.)

Comment—From this analysis of the 200 cases examined, and from the anatomical investigations preceding the cases analyzed, we believe that the following points can be made:

1. That sacro-iliac as well as sacro-lumbar sprains are distinct clinical entities of injuries to the ligamentous apparatus of these regions and their neighborhood, subject to the same laws that obtain in other ligamentous sprains in the body. The anatomical relationship of this ligamentous apparatus to certain structures of the pelvis especially the nerve plexuses and the neighboring bones, makes for a certain regularity of symptoms which aids very considerably in the exact diagnosis. Among these are first, more or less typical postures, especially lateral tilts and lumbar lordosis; then certain typical radiation of pain in the lumbar plexus on one, and the sciatic and the sympathetic plexus on the other hand, producing nervous symptoms some of which are known as Bertolotti's syndrome.

2. The great percentage of symmetrical positions on one hand, and of the absence of nervous complications on the other hand, show that neither position nor radiation is necessarily pathognomonic for sacro-iliac or sacro-lumbar strain, while the type of radiation and the type of faulty position, if present, are of a definite diagnostic importance.

3. Lastly, anatomical variations do not always nor even in the majority of cases, form the background of the sacro-iliac or sacro-lumbar sprains. On the other hand, however, backs endowed with such anatomical variations as are mentioned above, show percentage rates which lead to the conclusion that such backs are inherently weak by virtue of the natural restrictions of the normal motion, and that their possessors are especially susceptible to ligamentous sprains in the sacro-iliac and sacro-lumbar regions. This is a point of importance for the evaluation of the function of the back from the viewpoint of industrial surgery.

In all cases which were recognized as malingerers or neurotics, a definite discrepancy between the symptoms complained of and the anatomical and clinical findings was present. Far from being a subterfuge for malingerers as some may be inclined to believe, the anatomical and mechanical analysis of low back pain is very apt to unmask unjustified complaints and to aid in the detection of malingering. Because of its entirely mechanical character and the greater exactness of its diagnosis, we feel that it is much more able to do so than the other groups of low back pains, in which there is less clearness of clinical definition.

Discussion

Dr. W. Eugene Wolcott, Des Moines—Because of the lateness of the hour I will confine my remarks to the emphasizing of two or three points referred to by the essayist. In regard to the analysis of the idiopathic type of backache, it seems to me Dr.

TABLE V—LOWER BACK SPRAIN
RADIATION BY CLINICAL GROUPS
187 Cases

	Sciat.	Lumb.	Comb.	Symp.	No Rad.	Not Stated	Total Stated
Sacroiliac Normal	38	2			45	12	85
Sacroiliac Variation	15		1		8	5	24
Sacrolumbar Normal	4	5	1		12	2	22
Sacrolumbar Variation	5	15	2	1	23	5	46
Sacroiliac and Sacrolumbar Normal	1				4	1	5
Sacroiliac and Sacrolumbar Variation	3		1		1		5
Total	66	22	5	1	93	25	187

TABLE Va—LOWER BACK SPRAIN
RADIATION PERCENTAGE TABLE

Sciatic Radiation:	Total	66 (187) or 36%	Lumbar Radiation:	Total	22 (187) or 12%
In Sacroiliac	Total	53 (109) or 50%	In Sacroiliac	Total	2 (109) or 2%
	Normal	38 (85) or 45%			
	Variation	15 (24) or 62%			
In Sacrolumbar	Total	9 (68) or 13%	In Sacrolumbar	Total	20 (68) or 30%
	Normal	4 (22) or 18%		Normal	5 (22) or 22%
	Variation	5 (46) or 11%		Variation	15 (46) or 33%

Steindler has put up to us rather strongly the matter of proper interpretation of x-ray plates. If we are properly to interpret x-ray plates, we must first clearly define in our own minds what we might interpret as a normal fifth lumbar vertebra, especially in its relation to the sacrum. Secondly, we must take into consideration the anomalies which are present, but which vary in their responsibility as to the amount of pain that is present. We all recognize certain anomalies which cause pain and others which do not cause pain, brought out particularly by Dr. Steindler. We must recognize the changes that take place later in life, especially from the fortieth year on, and which are factors in causing pain, and also we must be able to differentiate these. Changes which take place as the result of scoliosis and hypertrophic arthritis must be recognized. Remote injuries which have had reflex effects should be considered, as well as the effects of recent injuries which are slight, but which do produce real symptoms. Then we must be able to recognize the results of chronic disease, such as tuberculosis, arthritis, and spondylitis, given merely as examples. In the case of idiopathic back pains, 35 per cent have reference to the anatomical anomalies. According to Dr. Steindler's statistics, 15 per cent have something to do with the sloping of the fifth lumbar vertebra in its relation to the sacrum; that is, an increased angle. Another factor is the impingement of the fifth lumbar vertebra upon the sacrum. Early in life these conditions do not always cause pain, but later, after the transverse processes become ossified, in 15 per cent of the idiopathic back cases they do cause pain. In closing I wish to offer a word of warning to men who are interpreting x-ray plates of industrial cases. First. I think we discourage our patients a good deal by telling them that they have a back sprain which is prone to recover rather quickly, perhaps specifying a certain date on which the man should be back on the job. If, when this time comes, he is no better, the reaction which takes place is very unfortunate. Second, we should not describe in detail the minor congenital anomalies of this region, which may or may not have significance, but which in the patient's mind become a very paramount cause of their trouble.

Dr. Steindler—I have nothing to add except that the entire question seems to center upon the point as to whether or not we are ever able to get together on the significance of the so-called anatomical variations of the back. As far as I can size the matter up, and I have carefully looked up all the literature and numerous published discussions of the subject, we will never be able to solve these questions unless we start with the determination of the cause of the actual interference with the normal range of motion in those backs that are doubtful because of the absence of clinical symptoms. In other words, the whole problem must be taken up from the physiological standpoint alone. We will have to go back to our laboratories and figure it out. Unfortunately, I have not had any data concerning the physiological state of backs with anomalies not showing any clinical symptoms.

CHRONIC ARTHRITIS*

Leonard W. Ely, M.D.
Professor of Surgery, Stanford University School of Medicine, San Francisco, California

If the watch in your pocket stops, you do not attempt to start it up by developing abstruse theories as to the cause of the stoppage, but you take it to a man who knows all about its insides and let him fix it.

If your motor car balks, you do not sit down by the side of the road, speculate on atmospheric conditions, the possible influence of the brands of gasoline you have been feeding it. You do not even try to start it up by putting paint on the outside or rubbing a little something on the tires. If you know anything about the machinery of your car you can probably remedy the trouble; if not, your only hope is to get some one who does know.

If your patient has a cough or a pain in his belly you try to make up your mind, from the knowledge you possess of his internal organs, what is going on inside, and you call upon your clinical knowledge and the resources of the laboratory to find out the cause of his complaint.

If your patient has an inflammation of a joint you abandon all the rules that guide you in the treatment of inflammations in other organs. You paint it with iodine, you rub things into the skin or wrap it up in bad smelling preparations. You apply heat or cold to it or electricity or x-rays or various forms of physical therapy. You resort to coal tar products and still the pain. When all these fail you take refuge in high sounding terms, and speak mystifyingly of the locus minoris resistentiae, of dyscrasias, the rheumatic diathesis and disturbed metabolism. One thing you will not do—study the pathology of joint inflammations, in order to learn how to treat them intelligently. There are few short cuts in medicine. Personal opinion is of little importance. There is only one reliable way to solve a difficult problem, and that is by patient investigation, accumulation of facts, and correct reasoning from the evidence. If our reasoning be not sound, our conclusions will be false, but the facts we accumulate will stand, and may enable those who come after to attain the truth.

When we come to examine joints in the labora-

*Read before the Inter-State Post-Graduate Assembly of America, Milwaukee, Wisconsin, October 27-31, 1924.

tory, and compare our findings with our histories and clinical data, we find that all cases of chronic arthritis fall into three classes. The first of these is

TRAUMATIC ARTHRITIS

It is customary to speak very loosely of traumatic arthritis. We often speak of a trauma to a joint without any very distinct idea of what we mean. A joint may be traumatised in several different ways. Its capsule may be torn. This is a sprain. When the capsule is healed, and the effusion has disappeared, the joint is well. Sprains are never the cause of a chronic arthritis. They cannot be. If an intraarticular fibrocartilage be torn, the joint will be frequently sprained, but when the causal lesion is repaired, the joint recovers. No train of pathological processes can be set in motion by a lesion of this sort.

A second form of traumatic arthritis is caused by intraarticular fracture. When union takes place with the fragments in faulty position, the joint is to be viewed as a damaged machine. When it is used thereafter, it is constantly sprained, and we have a true chronic traumatic arthritis.

A third form of traumatic arthritis is that caused by foreign bodies, and under this heading probably falls gout.

Leaving aside the traumatic arthritides all cases of chronic arthritis fall into two great groups or types, which usually can be distinguished in the clinic, almost always by the x-rays, and invariably in the laboratory. They have been named, classified, divided and subdivided by various authorities in a bewildering way, but until we are perfectly sure of our ground, I think clarity will be attained if we simply fasten on them some non-descriptive title, and so I call them Type 1 and Type 2.

Type 1—This class includes all cases of frankly infectious origin. Their prime pathological characteristic is a proliferative inflammation in the synovial membrane, in the bone marrow in the vicinity of the joint, or in both. The synovial membrane becomes thickened and villous, and eventually may become little else than a mass of scar tissue. It encroaches upon the joint cartilage, and spreads out over its surface. The marrow inflammation causes a rarefaction of the bone tissue, or even its death. The granulation tissue interferes with the nutrition of the cartilage, perforates it, and eventually may kill it, and throw it off into the joint cavity. When the bone end is laid bare in whole or in part, the granulations may unite with those from the other bone and with those from the synovial membrane to bind all three tightly together in a fibrous ankylosis. Occasionally the ankylosis in time becomes a bony one. On the other hand, in the milder cases, a return to normal is possible.

Identity of pathology implies identity of symptomatology and of physical signs. The diagnosis among the members of this type is never made positively until the demonstration of the causal organism has been done. Clinically all the cases are much alike. We make a rough, working diagnosis by the examination of the patient generally, and from a study of his history. Thus, if the patient has well marked evidences of syphilis, we are inclined to start the treatment with antisyphilitic measures, if he has recently had a urethral infection, we regard that as the probable cause. If many joints are involved, we should hesitate to make a diagnosis of tuberculosis, etc. Bear in mind that all this has nothing to do with the joint itself. If the patient were covered with a sheet, and if we viewed the joint through an opening in it, without the privilege of asking questions, we should be completely at sea.

The cause of all these arthritides is probably a bacterial or similar organism, domiciled somewhere else in the body, the so-called focal infection. We know this in the case of some, such as syphilis and tuberculosis, and from the similarity of symptomatology and pathology, we surmise it in the others. It must be remembered that not so long ago they were all supposed to be due to some mysterious humor or dyscrasia. The progress made in clearing up most of them leads us to hope that before long we shall understand the rest. In this connection, you will be surprised to know that in a standard system of medicine published about twenty years ago, the cause of gonococcic arthritis appears as a reflex from the irritation to the urethral mucous membrane.

The members of this group all have strong features in common in their symptomatology but usually differ enough in detail to permit us to make a good working guess as to their identity. Pain, stiffness, muscular spasm, increase of local temperature, deformity are present in varying degree. A lengthy description of each one is hardly possible here.[1] The x-rays usually show rarefaction of the bone and thinning of the joint cartilage. Bone proliferation at the joint line is absent. By the distribution of the rarefaction and by its extent the radiographer is wont to reach a fairly reliable conclusion as to the nature of the disease, but his conclusion is only to be regarded as tentative, not as final.

The first step in the treatment is to remove the

1. Ely, Leonard W.—Inflammation in Bones and Joints, J. B. Lippincott Co., 1923.

focus of infection, when this is possible. Syphilitic arthritis demands antisyphilitic treatment. The two other great sites of infection, especially in the multiarticular forms are the tonsils, and, in the male the deep urethra. Often stubborn cases which have resisted all sorts of local treatment, will recover after tonsillectomy, or after massage of the prostate, or vesiculotomy.

In tuberculous arthritis, we are never able to remove the original focus in the body. We have no means of identifying it. Therefore we must direct our therapeutic measures to the joint itself. Fortunately these cases are almost always uniarticular. The three main rules for us to follow are: first, deprive the joint of function; second, avoid secondary infection; third, build up the patient's resistance. In adults the treatment is almost always operative, in children rarely. I state these rules briefly, necessarily so, in a paper of this length, but I am prepared to go at length into the reasoning on which they are based. Authorities differ radically on the merits of operative treatment in the spinal tuberculosis of children. Personally I believe in practically invariable operative treatment in patients of all ages, and think that cure is very rarely attained in any other way. The Hibbs operation, when carefully done, gives excellent results.

Handled along these lines the majority of our cases of first type arthritis will respond satisfactorily. There remains, however one form of severe multiarticular progressive inflammation which will defy all our efforts, and will steadily grow worse. I had grown to regard these as hopeless, but recently I have seen one or two improve decidedly following the eradication of intestinal parasites. A search for amœbæ in the stools should be carefully made. If found, they should be treated with neoarsphenamin and emetin.

Type 2—This is the arthritis deformans of the Germans, the osteoarthritis of the English, the hypertrophic arthritis of Goldthwait, the degenerative arthritis of Nichols and Richardson, the chronic rheumatism of the elderly, senile arthritis. When occurring in the terminal interphalangeal joints it is known as Heberden's nodes, and is often mistaken for gout. It is of very frequent occurrence, widely distributed, and of ancient origin. It is never seen in patients under twenty years of age, is very rare in the third decade of life, and is distinctly a disease of middle and late life. In some 109 cases tabulated during last year at the Stanford Clinic, 58 per cent were in men. This is the fifth series I have tabulated. It corresponds closely to the other four.

Most writers on this disease have ascribed it to one of three main causes, viz: first, trauma; second, infection (bacterial); third, disturbed metabolism or some mysterious diathesis. No trauma affords any adequate explanation for the remarkable changes we observe in our laboratory specimens, the changes are radically different from those caused by bacteria, and to talk about disturbed metabolism is simply to drug our intelligence with meaningless words. Disturbed metabolism means disease. Shall we say that chronic arthritis is due to disease? I refer to my previous writings for an extended argument on the subject.[2]

Until two or three years ago the only reliable clue we had to the etiology was that patients almost invariably had infection at the roots of their dead teeth—the so-called root abscesses. Many of them had lost all their teeth. This observation hooked up well with the incidence of the disease in late life. Many of our patients improved when the dead teeth were extracted. I had observed in my laboratory sepcimens peculiar necrotic areas in the bone in the vicinity of the joint, and had come to regard them as the primary pathological change from which all the other changes followed. The problem then became to discover what living organism, not a bacterium, domiciled in the gastrointestinal canal, finds access to the circulation through the diseased bone at the roots of dead teeth, and, set down in the bone marrow, causes these necrotic areas. The most likely culprit is the amœba, and I have been following this clue with excellent results. Since my last series of published cases we have observed 109 in the Stanford othopedic clinic. Sixty-three of them were men, forty-six women. In sixty-two of them alveolar infection was demonstrated; twelve of them were edentulous. In twenty-nine no examination of the teeth was made. In thirty-six intestinal parasites were found, the amœba coli thirty-one times, giardia twice, endolimax nana twice, histolytica twice, entamœba butchlii twice. Two patients showed double infection. Thirty-three patients were not examined. This gives us a trifle under 50 per cent of infection in patients examined. Each year, with increasing skill in our laboratory, the percentage of positive finds has increased. All the examinations have been done at the Stanford laboratory under the direc-

2. Ely, Leonard W.—The Great Second Type of Chronic Arthritis, Arch. of Surgery, 1920, I, 158. Further Studies, Calif. State Jour. of Med., 1921, xix, 415. Third Study, Calif. State Jour. of Med., 1922, xx, 329. Fourth Study, Jour. Amer. Med. Assn., 1923, lxxxi, 1763. The Amoeba as the Cause of the Great Second Type of Arthritis, Calif. State Jour. of Med., 1922, xx, 59. Inflammation in Bones and Joints, J. B. Lippincott Co., Phil., 1922. The Second Great Type of Chronic Arthritis in its Relation to Industrial Accidents, Calif. Jour. of Med., 1924.

tion of Dr. Harry Wyckoff, to whose courtesy we are greatly indebted.

Our theory so far rests on purely circumstantial evidence, backed up by the results of our treatment. The claim of Kofoid that he found amœba histolytica in the marrow of one of my patients has never been confirmed. I incline to the belief that one of the so-called harmless amœbæ will prove to be the usual cause, possibly the amœba baccalis. An organism might be harmless in the mouth, and very noxious in the bone marrow.

Into the details of the pathology I cannot go here. As said above, the prime pathological change is probably the aseptic necrosis in the region of the joints. All the bone and joint changes result from this. The disease is recognized clinically, and grossly in the laboratory, by the bony and cartilaginous outgrowths in the region of the attachment of the capsule. The cartilage wears away over the bone end. The joint becomes permanently mechanically damaged. It is a poor machine, and becomes easily sprained. Hence the prevailing idea that the disease is caused by trauma. The cart has been put before the horse. It is the disease which causes the joint to be sprained, not the sprain which causes the disease. Union of the articulating bones rarely results except in the spine. Here bone is sometimes poured out like syrup from a jug, and oftens welds the vertebral bodies solidly together. Parenthetically it may be said that the changes in the spinal joints are responsible for many cases of what is erroneously diagnosed as neuritis, radiculitis, sciatica, lumbago, muscular rheumatism and fibrositis. The next case you see of obscure pains running down the extremities, send to the radiographer. You will probably see little hooks or spurs on the joint margins of the corresponding region of the spine.

The treatment can be deduced from what has been said. The first step is the investigation of the teeth. Any dead, or plainly abscessed teeth should be extracted, any old snags should be dug out. I have seen cases improve after this alone. The next step is the search for parasites in the stools. This can only be done by an expert parasitologist. A routine examination by an intern is worthless. If parasites be found they should be eradicated if possible. We depend upon a thorough course of emetin, and neosarsphenamin. At the Stanford orthopedic clinic, we have set one day of the week for the administration of neoarsphenamin. Alcresta ipecac we have discarded, though it is employed by some. When no parasites are found in the stools we give the emetin without the neoarsphenamin. The results of the treatment are good. Some patients show a clinical recovery, though, of course we recognize that the damage to the joints is permanent, and no complete restoration to normal is possible.

A few of our patients have failed to improve under this treatment, but have responded readily to the injection of a foreign protein. I offer this clinical observation for what it is worth. I know of no logical reason for it, but we are always ready to try anything that promises results.

Those of you who have treated these cases know well that many of the patients are influenced markedly by their diet. Anything that upsets their digestion aggravates their disease. This agrees with our hypothesis as to the cause of the disease, but does not lead to the conclusion that the disease is caused by diet. The patient should eat the food that agrees with him best. The changes have been rung *ad infinitum* on the dietary treatment of "chronic rheumatism".

The application of heat in any form almost always is agreeable to patients with this form of arthritis. Dampness and cold usually make the symptoms worse, but neither of them is to be regarded as a cause of the disease. We have an almost ideal climate in California, but this form of arthritis is very common with us. Parenthetically I may record a personal observation in California that alveolar infection is of frequent occurrence, and occurs very early in life. A few years ago I sawed up a hundred bones taken at random from the collection of the anatomical department of Stanford University, and was astounded at the proportion which showed the bony ridges at the articular margins.

My study of my specimens in this disease has explained to my own satisfaction two things that had always been a puzzle to me. Whether or not the explanation is a good one, I leave you to judge. The first of these is fracture of the neck of the femur in the elderly, and its failure to unite. I believe that it is due to the areas of necrosis in the femur neck.

The second thing is the peculiar stiffness and active arthritis which so often follow an intra-articular fracture in an elderly person. I believe that the fracture has opened up one of these necrotic areas in the bone, and has set free the infectious material, whatever it may be, in the joints. The next time you have one of these cases, do not reproach yourself for leaving the splint on too long, or not long enough, but investigate the patient's teeth, and examine his stools. While not exactly germane to my subject, let me suggest the same procedure in your patients with Dupuytren's contracture. I have yet to see a

well marked case without alveolar infection in his jaws.

Conclusion

All cases of chronic arthritis except the strictly traumatic, can be divided into two main groups or types. The first are the frankly infectious. They include tuberculosis, syphilis, and the arthritis caused by an infection in the tonsil and in the deep urethra, pneumococcic arthritis, etc. To the second type, abscesses at the roots of the teeth stand in some sort of causal relation, probably as forming a port of entry to the bone for the causal organism. Suspicion points to some form of animal parasite as the cause, probably a protozoon. The two types are quite distinct and are to be handled on entirely different lines. The treatment of both types is usually satisfactory, though some cases will defy all our efforts.

FURTHER OBSERVATIONS ON THE USE OF CONVALESCENT SERUM IN THE PROPHYLAXIS OF MEASLES*[1]

George H. Weaver, M.D. and T. T. Crooks, M.D., Chicago

In a recent paper[1] the results of our work with convalescent serum as a protective against measles at the Durand Hospital were reported. It concerned fifty-seven susceptible children who were exposed to measles. Nine of these were not given serum; all developed typical measles. Forty-eight were given five to ten c.c. of convalescent measles serum; forty-four were protected and four developed measles. Of the four developing measles, three were given the serum eight to twelve days after exposure; one was given the serum the day of exposure and developed a typical form of measles fifteen days later. There was only one failure in forty-five children given serum within four to five days after exposure. In this paper the literature on the use of serum in measles was fairly thoroughly reviewed, so that only more recent articles will be mentioned here.

Zingher[2] in New York City has had some interesting results. Of 102 children receiving convalescent serum, ninety-two were protected. Of the ten developing measles, seven were given the injections on the eighth day of exposure and developed a modified form of measles with incubation periods of from sixteen to twenty-two days.

Davis[3] gave convalescent serum to fifty-two susceptible exposed persons with fifty protections. Of the two who developed measles, one had a typical case, and the other a mild atypical attack which would scarcely have been recognized unless one were watching for the appearance of the disease.

Adler[4] reports the use of whole blood from convalescents or adults who have had measles for protecting young children. Of eighteen children in his private practice given from 20 to 30 c.c. of whole blood from four to eight days after exposure, five were completely protected, twelve had mild atypical measles and one had a typical attack. This is the first report seen on the use of the blood or serum in private practice. Adler says the method is so simple that any general practitioner may safely use it.

H. Cambessedes and P. Joannon[5] report the successful use of convalescent serum in preventing measles in several of the hospitals and creches of Paris. During the winter of 1922-23 severe outbreaks of measles occurred in Paris; in one creche there were thirty-six cases and seventeen deaths among thirty-eight infants. By the prompt use of convalescent serum it was found that measles could be quickly stamped out in these institutions.

In our additional series, 100 susceptible exposed children were given convalescent measles serum. Of these eighty-one were entirely protected; nine developed a mild atypical form of the disease, and ten had typical measles.

TABLE I

No. Cases Given Serum	Age	Days Between Exposure and Administration of Serum	Result		
			No Measles	Atypical Measles	Typical Measles
25	4 mos.— 6 yrs.	1	23	2	..
10	4½ mos.— 4¾ yrs.	2	10	..	..
12	18 mos.— 4½ yrs.	3	10	..	2
12	6 mos.—10 yrs.	4	12	..	..
13	8 mos.—10 yrs.	5	11	1	1
10	15 mos.— 9 yrs.	6	5	5	..
7	21 mos.—14 yrs.	7	6	1	..
5	2 mos.— 4 yrs.	8	4	..	1
1	.. 3 yrs.	12	..	..	1
4	18 mos.— 3½ yrs.	14	..	..	4
1	13 mos.	16	..	..	1
100	2 mos.—14 yrs.	1-16 days	81	9	10

In Table 1 are shown the results of the use of serum. One child was not given serum and developed typical measles in fourteen days, while others exposed at the same time in the same institution and given serum one day after exposure were protected. Of the ten children who developed typical measles following the use of serum, seven were given the injections five days or more after exposure. The three who had an unmodified form of measles were reported as exposed within five days previously.

*Read before the Inter-State Post-Graduate Assembly of America, Milwaukee, Wisconsin, October 27-31, 1924.

1. From the Durand Hospital of the John McCormick Institute for Infectious Diseases.

Many of these cases are from the private practice of physicians in Chicago who often dated the exposure from the appearance of the rash in another child in the family. Measles is contagious during the catarrhal or pre-eruptive stage so that in some of these cases exposure is undoubtedly three to four days longer than reported.

Supposing that the reported exposures are correct, there is a failure to protect in only three of seventy-two injected with measles serum within the five-day period. These children were given the same lot of serum as many of the others and in the same manner and amount. Why convalescent serum fails to protect against measles in some cases is unknown. Most investigators report from 2 to 4 per cent of failures even when the injections are given within the first five days of exposure.

The protection afforded after five days' exposure to measles by convalescent serum is more uncertain. Of thirty-five children given serum five to eight days after exposure, two developed apparently unmodified measles, seven developed a very mild form, while twenty-six were entirely protected. Of six children exposed to measles for twelve to sixteen days before serum was given, there was apparently no protection or modification of the disease. There is thus considerable protection afforded even up to eight days after exposure, but the best results are secured when the serum is given within four to five days after exposure.

The nine atypical cases are an interesting group. These forms vary in intensity from a light attack in which the child may have some slight catarrhal symptoms, a transient rash of one to two days and a moderate elevation of temperature to 101-102° for a day or two to very light transient cases which would pass entirely unrecognized if one were not constantly on the watch for symptoms. If one could standardize the dose and time of administration accurately, it would perhaps be better in many cases to give the child just the amount of serum which would permit it to develop a mild abortive attack of measles with its actively immunizing effect rather than to protect it passively by a larger dose of serum and leave it susceptible to measles after a few weeks. In time such a dose of serum may be standardized.

The cases reported last year were largely in hospitals and institutions where the length of exposure was usually limited by the isolation of the case of measles. This year the cases were largely in private practice where the time and intensity of exposure were usually greater than those in institutions. Yet the degree of protection is about the same in the two series.

One interesting group of cases this year occurred in a large summer camp for boys. A few days after the opening of the camp, a boy came down with measles. As an attest of the activity of this lad and the virulence of the infection, twelve additional cases developed twelve to sixteen days later. While it was difficult to find out with certainty how many more boys were susceptible, twelve who had no history of previous measles were given measles convalescent serum five or six days after the second crop of measles appeared in an effort to prevent an extensive third crop from developing. No more cases developed in the camp. Supposing that the twelve secondary cases were as effective in spreading the virus as the one original case, there should have been a general epidemic among the remaining susceptibles. By prompt isolation and the use of protective serum the disease, which was beginning to assume epidemic proportions, was checked in the second generation.

The method of securing serum and preserving it has been described previously.[1] We have used a 5 c.c. dose in all cases without any attempt to graduate the amount to the length of exposure and the age of the patient.

An experience with one family would indicate that a dose graduated as to age might be advisable. One child in a family of six children came down with measles. On the sixth day of exposure, the remaining five children ranging from two to nine years were given 5 c.c. of serum. Twelve days later, the oldest, nine years, developed a mild atypical form of measles with a moderate rash for two days, a temperature of 102 for one day but no noticeable catarrhal symptoms. She was with difficulty put to bed for the day. One day later a boy of seven developed a milder rash, but would not remain in bed. The next day two more, aged five and four developed a very transient rash for one day with no elevation of temperature or other symptoms. The youngest, two years, showed no symptoms at all. These children were all given 5 c.c. of serum, but the protection afforded increased as the age decreased, i.e., from a mild attack of measles in the oldest through very transient atypical forms for the younger ones to complete protection for the youngest child of two years.

Degwitz[6] has used a 2.5 c.c. dose of serum as a unit, increasing this amount with the age of the patient and length of exposure. Zingher has also varied the size of the dose with these two factors.

We have had no experience with the use of whole blood or serum obtained from persons who

have had measles at rather remote times. Reports by several observers seem to indicate that such blood from adults who had measles in childhood possesses distinct protective power, but must be given in relatively large doses (30 to 40 c.c. of whole blood). The blood may be injected intramuscularly without or with the addition of sodium citrate to prevent clotting. When convalescents of sufficient age are not available, the blood from parents and older children who have had measles may be used to secure protection or at least to cause a modification in the severity of the attacks if they occur.

Our experience has been that most people are willing to give blood without financial remuneration. When the humanitarian side has been pointed out, we have had very few refusals to donate blood either for measles or scarlet fever. We have been getting blood from convalescent scarlet fever patients for several years.

From the reports of various investigators, it is fairly well established that serum or whole blood from persons recovering from measles contains sufficient antibodies to protect against measles when given early. It is a safe procedure when donors are selected carefully. The main defect of the plan is the lack of available donors. This has been met by Adler[4] in his private practice by using the blood of relatives. In New York City the health department has made serum available for the general practitioner. With closer cooperation between the family physician and a hospital group, there could soon be collected enough serum for considerable prophylactic work against measles in children under five years of age.

Summary

1. In a previous report fifty-seven children exposed to measles were observed; nine were not given serum and all developed typical measles; forty-eight were given serum and forty-four were entirely protected. Of the four developing measles, three were given the serum injection too late—eight to twelve days after exposure—and the course of the disease was apparently unaltered. One child given serum on the day of exposure developed typical measles fifteen days later. There was one failure to protect in forty-five cases given serum within four or five days of exposure.

2. In the present series, 100 susceptible children were given a 5 c.c. dose of convalescent measles serum. Eighty-one were entirely protected, nine developed atypical measles and ten developed the disease in a typical form. Of the ten developing unmodified measles, only three were given the serum within five days of exposure.

3. From various reports the protective power of whole blood from persons who have had measles sometime previously seems fairly well established. Where convalescent serum is unavailable, this method may be used by the general practitioner to good advantage.

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THE PHYSICIAN AND PUBLIC HEALTH*

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The program presented here this afternoon represents a departure in the annals of medical societies. It is the first time, to my knowledge, that a district medical society has devoted its entire annual program to the problems of preventive medicine. It is indicative of the change which is taking place in medical practice and of the realization that prevention is the dominant note in medical practice.

Public health is a specialty of medicine. It is one of the newer specialties and one which is growing more rapidly than any other. It owes its growth to the support of the medical profession and to the widespread and fundamental human desire to be well. In this age of specialization each of us becomes concerned in the immediate problems of our specialty and fails to understand the occasional lack of interest, and sometimes the lack of sympathy, on the part of brother physicians engaged in other specialties. The future healthy growth of the public health movement depends upon the continued interest and support from the rank and file of the medical profession. Fortunately there is a mutuality of interest between the private practitioner, the public health official and the public. Later on I will develop this theme more fully.

The health problems involved in the prophylaxis of the common diseases have been discussed so fully and so well that there is no necessity for any reiteration on my part. I will devote my time, therefore, to a brief consideration of the

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actual and the potential accomplishments in preventive medicine, methods whereby it may be made to serve a larger purpose in human welfare, and the advantages which will accrue to the profession and to the public through every advance in public health.

The progress of preventive medicine is too well known to each of you to be discussed in any detail. Suffice it to say that in the present century more than seven years have been added to the span of human life; that if the death rate for the year 1900 should prevail today five hundred thousand additional persons would die each year; that this increase in longevity, although most marked in the younger age groups, has taken place to some extent at all ages; that the death rate from tuberculosis has been cut in half; that typhoid fever has been reduced from thirty-five deaths per 100,000 in 1900 to 6.8 deaths in 1923, and that a striking reduction has taken place in the death rate in many other preventable causes.

As great as have been these modern miracles in medicine, all of us realize that these actual accomplishments fall far short of what can and should be accomplished if our present scientific knowledge were more fully applied. There is too great a lapse of time between the acquisition of scientific knowledge and its application by and for the mass of the people. Also there are many problems in preventive medicine yet to be solved. I am convinced, however, after a careful study of the problem, that if our present knowledge of disease prevention were applied fully; that the average span of human life would be increased from the present fifty-seven years to the biblical measure of three-score and ten; that deaths from tuberculosis would be cut in half; that typhoid fever and malaria would become obsolete; that one-half of the deaths of infants under one year of age would be prevented; that diphtheria and scarlet fever would be reduced by 75 per cent; and finally, that these potential accomplishments in public health can be made real, and can be brought about by measures well within the financial ability of every community. These accomplishments cannot be realized by the few of us engaged in public health as a profession, nor can they be realized by the great body of practicing physicians working alone. There is needed a coordination of effort preceded by a mutual understanding between the private physicians and the public health authorities. There should be no difficulty in delimiting the respective fields of private practice and public health effort; each can and should supplement the other.

I cannot conceive of there being any honest difference of opinion as to the necessity for an adequate health service in every community. Health activities need to be placed upon a plane of efficiency and to be divorced from partisan political control. Surely the public health of the average county, or of the city of comparable size, needs the whole-hearted and single-minded attention of the person responsible therefor. This presupposes a health officer who devotes his entire time to the duties of his office, and who is supplied with sufficient nurses, inspectors and other assistants to carry out in a businesslike way a well-balanced general health program.

The need for better health organization is especially apparent in the rural districts of our country. The progress in health conservation in recent years has taken place almost entirely in the larger centers of population, so that at present the death rates from many preventable causes are higher in rural than in urban areas. The experience of the United States Public Health Service and of every other organization which has studied the problem of local health service, has been that the county is a logical unit for local health government; that health activities in every community should be unified; and that the state, or state and government, should furnish the assistance necessary to secure the initiation of health activities in rural districts. A reasonably adequate health service can be secured in the average community by an annual expenditure of about 50 cents per capita. Such a service should include the control of communicable diseases. In this, quarantine, epidemiological investigations, laboratory service and the immunization of susceptible persons against such diseases as small-pox, diphtheria, typhoid fever and scarlet fever, play an important part. In the field of child hygiene, much can be accomplished in educating mothers in the importance of prenatal and infant hygiene measures. The necessity for school hygiene is generally recognized. The health department should see that safe water and milk supplies are provided and that sanitary measures for the disposal of excreta and sewage are carried out. Anti-tuberculosis activities deserve much attention, and the control of venereal diseases forms a pressing problem. The most important single activity of a health department is in the education of the public as to the facts of health and disease, and the need for more complete medical service.

The situation at present is that the public fails to avail itself all too frequently of the service of physicians. This is true in all age groups and for all diseases. The earlier diagnosis of disease and its prompt and complete treatment is the dominant note in discussing all phases of prevention. The medical profession suffers because the

public indulges in self-medication, turns to the quacks for relief, and fails to consult the physician until late in the course of the illness. The public suffers likewise from this lack of more complete medical service. All too few pregnant women place themselves under the care of the physician throughout their pregnancy. The doctor is not consulted about the feeding of the baby until a serious illness intervenes. Less than one-half of the childhood contagions are seen by physicians. Fifty per cent of the school children are suffering from remedial physical defects which hamper them in their school progress and which may predispose to serious sequelae. Less than twenty-five per cent of those infected with a venereal disease consult a physician and a much smaller percentage of these continues treatment until cured. A large proportion of tuberculosis is not recognized until the advanced stages. The degenerative diseases are becoming of more and more importance, and in their prevention the most effective weapon is early recognition through periodic physical examination. I could add further to this list, but the above are sufficient to illustrate the point I wish to make: I conceive the most important function of a health department to be to educate the people as to the necessity for scientific medical care; to avail themselves more fully of the services of their physicians and thereby receive more completely the benefits of modern science in preventive medicine. Physicians themselves cannot "advertise their wares", although the public is in sore need of these "wares". It is the public health officer who can best convince the public of this need. With the counties and cities of this state organized for better health service, the medical profession and the public both would be benefited.

I conceive it to be the function of the county, district and state medical societies to interest themselves actively in their community health problems; the people look to you for advice, leadership and guidance in their community health endeavors; without such leadership illogical or unsound efforts may be made in the name of public health with the result that all health activities may be brought into disrepute.

May I not, therefore, commend to you in your several communities, a careful study of your community health needs and your active participation in an effort to secure an efficient and adequate health organization under the direction of a competent full-time health officer. By such a coordination between the practicing physicians and public health officials, as I have endeavored to outline, will the interests of all be served best.

COMMUNICABLE DISEASE PREVENTION*

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Small-pox

The subject of small-pox at this time is of special interest because of the recent appearance of a virulent type of the disease in the northern part of this state. The type of the disease, now present, is indeed of a very virulent character as contrasted with the milder variety that has been seen from time to time in past years. Small-pox may in general be classified as virulent and non-virulent although such a classification has no distinct or well defined outline. The small-pox that has occurred in this state for many years has usually been of the less virulent type and the public has become accustomed to think of it as being always of this type and degree of severity. This idea has kept many people from being vaccinated because of what seemed to them a rather plausible excuse that the disease was no more severe than the vaccination. Whether or not the disease originated from two distinct sources, thus giving two types of the disease, each with a variable degree of virulence but in the main, one much more virulent than the other, has never been satisfactorily decided. Such a question while of didactic interest, is at present not of prime importance since we know that vaccination protects against all strains, if there is more than one strain.

Vaccination consists of inoculating man with cowpox, a disease of cows, which inoculation goes through a typical course and protects man from small-pox for a period of time as completely as if he had small-pox itself. The indices of a successful vaccination are: first, the course of the eruption; second, the general symptoms; third, the scar. The typical course of the eruption consists of the appearance after three or four days of one or more papules at the vaccination site which are small, round, bright red, hard and superficial. They become vesicular about the fifth day, pearl-like in color. By about the seventh day the vesicles are much larger, are multilocular, and may be umbilicated. By the eighth day the contents turn yellowish. The areola which has appeared around the vaccination site is hot and tender and the regional lymph glands may be enlarged.

The general symptoms vary from practically none to malaise, loss of appetite, and some febrile

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reaction. The scar is red at first, then white and finally leaves a pitted area like small-pox.

There are five possible reactions to attempted vaccination: viz.

1. Primary take—meaning that the person was susceptible and is now immune for at least five years.

2. No take—meaning that nothing in the way of immunity has been done and that the attempts should be repeated.

3. Immediate reaction—meaning that the individual is highly immune and that vaccination need not be repeated for five years. This reaction comes on in twenty-four to thirty-six hours, it reacts its height on the fourth day and is usually gone by the eighth day. It consists of a red aerola about the scratches, but no vesiculation nor pustulation.

4. Accelerated reaction—meaning that the individual is slightly immune from a previous vaccination, and that revaccination is not necessary, at this time. Revaccination should be done annually in order to obtain a second primary take as soon as the previous immunity is exhausted. This reaction begins about the fourth day, reaches its height on the eighth day and is over by the twelfth day.

The lesion resembles the first week of a primary take. It has the stages of papule and vesicle formation—but does not develop a pustule or scar.

5. Infection—meaning nothing with regard to immunity formation. Many big scars and stories of sore arms are in this group. Judging from the number seen with smallpox, we would say that few of these individuals have developed any immunity at all.

The question of how long immunity granted by vaccination lasts. It is safe to say that sufficient immunity is not developed for twelve days to be of any service. If a patient remains free of smallpox for twelve days from the time of the inoculation resulting in a primary take, that person will not contract the disease within the next five years.

DIPHTHERIA

In the consideration of diphtheria, our views have changed considerably in the last few years. The Schick test, when properly performed is a very valuable procedure. For adequate and reliable results, the test should be controlled and the technique of the test should be of the highest type. Granted that the material used is reliable and has been properly diluted, errors may easily arise if the material is injected under the skin, instead of into the skin, or, if too much material is injected under the skin, instead of into the skin, or, if too much material is used the test will appear positive in individuals who with proper dosage would be negative, and if too small amount is used negative results will appear in some who are susceptible. In view of these facts and because such a large per cent of small children are susceptible to diphtheria, we believe it is proper to dispense with the Schick test of small children and give them the toxin-antitoxin. One year later they should be Schick-tested and those found positive, be given a second series of toxin-antitoxin. With the older children and adults the Schick test may first be applied if desired, but very frequently they will come desiring the same treatment that the younger children are given—the toxin-antitoxin. The most satisfactory way of immunizing the children against diphtheria is by organizing a campaign in a community and by working at the school. In this way all the school children will be reached and parents having children of preschool age may be requested to bring their children to the schoolhouse.

Another point on diphtheria, once it has appeared, is the amount of antitoxin given to the cases. Formerly antitoxin was given in small doses and then repeated in 12-24 hours, if no improvement was seen. Now the attempt is made to give enough the first time so that a second dose is not needed.

Twenty to forty thousand units of diphtheria antitoxin is found to be about the average dose if given at the earliest possible moment. Each twenty-four hours that diphtheria antitoxin is withheld puts the patient in a group where the death rate is three times as high as if the antitoxin was given the day before. The importance of early administration of large amounts of antitoxin can hardly be over-emphasized.

RABIES

Heretofore rabies in Iowa has not been of a menacing proportion. During the past year, however, the number of cases of rabies has materially increased and if not checked, will increase more rapidly the coming year. Rabies is a disease affecting many animals including man but is spread principally in this country by dogs. Proper care and attention to dogs will check the increase of rabies. If all unowned dogs were destroyed and all other dogs were given the canine anti-rabic vaccine, rabies would soon disappear. In communities where rabies is prevalent, it may be checked by having all owners of dogs vaccinate them or keep them restrained. It has been found practicable to use the maximum license fee for dogs, the payment of which will entitle the owner

to have his dog given the anti-rabic vaccine without further expense. Part of the fee will then be used to pay for the vaccine and its administration. If such a program is carried out over the state the rabies situation will cease to be a cause of worry to anyone. The Pasteur treatment should be administered to all persons who have been bitten by dogs, if it cannot be definitely proven that the dog was not rabid at the time of biting. This canine diagnosis is easy because a dog will not live ten days after he is in the infectious state of rabies. This disease is always fatal to both man and animals.

Conclusion

In such a short time it is impossible to adequately discuss these questions and only the most important points could be mentioned. We have considered small-pox, because it is of especial interest at this time, since it is now present in its virulent form in the state. Diphtheria is a topic which can not be discussed too often or at too great length until provision is made whereby all children are protected against it. The subject of rabies is worthy of more consideration and could only be mentioned. Other communicable diseases and their preventive phases are also worthy topics and have been unwillingly omitted, deeming it more advisable to omit than to mention them without adequate consideration.

THE USE OF ACRI-VIOLET IN THE TREATMENT OF INFECTION OF THE EAR*

Geo. J. Pearson, M.D., Burlington

In presenting our experiences in the use of acri-violet in the treatment of infections of the ear, it is not our supposition that we are giving you something original. It is our desire to see a more general use of this solution which has been so singularly satisfactory to us in the treatment of ear infections. We also have to admit that our series of cases is restricted in number because we have used acri-violet only one year and we do not have the facilities of a large practice. Also we may have overlooked some cases in going through our records as we did not have statistics in mind when we began using acri-violet and so did not isolate these records.

The solution we use is that suggested by Dr. Churchman and used by Dr. Abraham in his experiments. It is made of acri-flavine and gentian violet, forming a solution called acri-violet. The most convenient method of preparation is to use the tablets prepared by the National Aniline & Chemical Co. Each tablet contains 0.156 gm. and dissolved in 15 c.c. of hot water makes a 1 per cent solution. Distilled water is not necessary. A fresh solution should be prepared every few days. We find it more efficient in an alkaline media which makes it advisable to cleanse the area to be treated with a 2 per cent sodium bicarbonate solution when not otherwise contraindicated. We have used concentrations up to 4 per cent though we believe 2 per cent is strong enough. The gentian violet unites with the cell protoplasm and inhibits reproduction of the organism. It has a somewhat selective action in that it acts more readily on the gram positive organisms. The acri-flavine acts equally well on both gram positive and gram negative organisms. The acri-flavine produces a very superficial necrosis. Some observers feel that its action is similar to phenol both in this way and as an antiseptic. This necrosis must be very superficial if at all as it is absolutely non-irritating even on fresh wounds. It does not even inhibit the phagocytic action of the leucocytes. It will promote granulation tissue if used only occasionally, but will retard the granulations if used all the time. When a large cavity is to be filled as in mastoid dressings I don't believe it pays to use it every day. There is a sort of fibrous membrane formed over the surface by the union of the acri-violet with exudate of the wound. This membrane tends to prevent reinfection. The only objection we have had to the solution is its intensely staining qualities which are counterbalanced by the psychic effect it has on the patient to use a solution of such definite action. Stains may be removed from skin or clothing by acid alcohol.

We use acri-violet to prevent infection as well as to cure it. After removing wax or foreign bodies from the external canal when there has been a slight abrasion, we dry the surface and then paint it with our solution of acri-violet. This is allowed to dry and if the patient is seen in three or four days we find there is an exfoliating membrane but in no case an infection. In a few days subsequently the ear will have its normal wax coating again.

In acute auricular eczema we thoroughly cleanse the skin with peroxide, then 2 per cent sodium bicarbonate is lightly swabbed in the ear and dried. The acri-violet is then painted over the skin and allowed to dry. A second application is made the next day. Sometimes a third or fourth application is necessary but since using this solution, we have not used over four applica-

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tions to subdue any acute case. Our series here comprises over a dozen cases and the duration of apparent cure has been nine months for maximum time, to less on more recent cases. Success is due to stimulation and the reformation of normal wax.

We have treated chronic auricular eczema in the same way but have not found it to stay aleviated permanently in as large a percentage of cases.

External otitis is a condition in which we think we get phenomenal results with acri-violet. In the diffuse form or before suppuration takes place we put in a pressure pack saturated with acri-violet and rarely is it necessary to repeat the dressing more than two or three times. If suppuration has occurred we establish drainage by a free incision through the center of the involved area and insert a light pack saturated with the solution. There is no pain from the solution though there may be from the manipulation employed in inserting the pack. This pack is left in place one day and a subsequent light pack is placed in the canal for two or three days successively and then the canal is left open. In a few days the superficial layers of epidermis will peel off taking the stain with it. It is especially gratifying to us to see normal wax in the ear canal in a very few days more. This is one feature that we have had trouble with in the use of other solutions in the ear canal. We have not infrequently had a dry itching ear with exfoliating dermal layers for a long time after the use of alcohol, carbolic and other solutions used so often in the care of the ear for external otitis.

Otomycosis yields to the treatment with acri-violet very nicely in the few cases we have had to try it on. This case report is interesting to us. Miss L. reported February 3rd with the left ear canal containing a large growth of aspergillus nigra. We treated it for three days with salicylic acid in alcohol. The improvement was very slow and the right ear was beginning to have the same growth in it. We then packed both ears with a gauze wick saturated with acri-violet. For two days the growth remained the same. We then painted the ear canal with the acri-violet and left it open. There was no growth subsequent to this in either ear though we watched her for several days anticipating a recurrence. We felt that permitting the acri-violet to dry into the skin was more beneficial than keeping it moist in this case.

In acute inflammation of the middle ear or serous otitis media we have felt that the avenue of infection was usually from the throat and posterior nares. In the treatment of these acute inflammations we still follow the usual procedure of general rest and alimentary elimination, nasal suction, salicylates, etc. But we have felt that the local application of acri-violet in the throat, posterior nares and around the orifice of the eustachian tube especially, facilitates the recovery of these patients as much, if not more than any other astringent or antiseptic solution we have ever used. It will not take the place of cleaning out infected sinuses or removal of diseased tonsils and adenoids, but does facilitate the recovery from these ear infections.

In acute suppurative otitis media we have followed the same general rest and eliminative treatment, medication and local treatment of the nose and throat as in serous otitis media. After paracentesis or rupture of the ear drum we have prescribed frequent cleansing irrigations with boric acid solution. After the irrigation we like to use light suction. I do not like forceful suction as it is possible to tear the ear drum with it, so I omit this when the age of the patient or intelligence of the attendant makes it risky. To get our suction we employ a strong rubber bulb or a water or an electric pump, or in some instances a wash bottle with a rubber tube to the ear of the patient and another rubber tube to the mouth of the patient who makes his own suction. This is really the most satisfactory for home use. After the excess boric acid solution and any discharge is sucked out of the middle ear, the canal is carefully dried out with cotton and a few drops of acri-violet solution dropped in the ear canal. The affected ear should be held up and the patient directed to move the jaw as in yawning or swallowing. In this way gravity helps the acri-violet to enter the middle ear through the opening in the ear drum and come in contact with the inflamed tissues inside. In two of our series of cases this past winter in which this technique was followed, we have obtained prompt cessation of discharge with healing of the ear drum in four days, a subsequent paracentesis being necessary. We felt that there must have been some drainage from areas not reached by the solution and that the thorough emptying of the middle ear permitted a new accumulation which had to have drainage later.

An illustrating case report in which acri-violet helped to dry a purulent otitis media follows.

Mr. C. G. came in March 9 with a very bad cold in the head, and much pain in the left ear. On examination we found an acute coryza with no sore throat, he having had a previous clean tonsillectomy. The left ear drum was inflamed and bulging. Paracentesis was done and the patient hospitalized. He was treated as outlined above except for the use of acri-violet and inflation which were omitted. On the

fifth day his cold cleared up and the ear had become almost dry so he was permitted to go home, where treatment was continued. He returned to us again April 13 with profuse sero-purulent discharge from the ear. He was treated on that day by thoroughly cleansing the ear with suction and inflation and drying it out. Then working the acri-violet into the ear as mentioned above. A light wick was inserted. The ear canal has been dry ever since that treatment, and the perforation has healed, and the patient has normal hearing.

In some instances where the suppuration has gone on to mastoiditis or where a mastoiditis already existed we have used the acri-violet in our dressing at the time of operation. These wounds become sterile to culture as early as the second day and the ear canal would become dry but the wounds have failed to granulate in, any more rapidly, if as rapidly, as with a plain dressing.

In a few cases of old chronic otorrhoea we have had very gratifying results. The method of treatment is shown by the case reports.

Mr. A. W., age fifty-six, reported June 11 with a polyp in his right ear and a very foul discharge. Family history and personal negative, other than that he was subject to frequent head colds with sore throat since a boy. This ear began running when a boy, following a severe cold and was never dry for more than a few weeks at a time in the intervening years.

Left ear had been and is normal. Examination of the throat showed very badly infected tonsils, inflamed and unusually large for his age. The inflammation extended onto the uvula and into the nasopharynx. Removal of tonsils was refused. There was no hearing by air conduction on the right side. The ear canal was completely occluded by a large polyp, which could be seen extending out of the ear. The attachment of the polyp seemed to be posterior. Because he had had very little pain from his ear he wanted to get rid of the growth only. Under general anesthesia it was removed and a large fistula found through the posterior wall extending up and back just external to where the drum should have been. Necrosed tissue and caseated pus was removed as much as possible with a currette, and a dry pack inserted lightly. Subsequent dressings were with packs occasionally saturated with acri-violet. The contour of the ear canal is very similar now to that of a radical mastoid and the cavity has grown over with epithelium. He has had a dry ear for six months.

Miss S. W., age twenty-four, presented herself January 28, 1924, with a chronic otorrhoea of the left ear of ten years duration. She had had an imperfect tonsillectomy one year before we saw her. There was nothing else significant in her history. Examination showed a pin point hole in Sharpnels membrane. Hearing was ten feet for whispered voice and twenty feet for spoken voice, blood count and temperature normal. X-ray showed obliteration of the cells of the left mastoid. We did not feel that she was in immediate danger, so treated her by suction on the canal, inflation of the eustachian tube, drying the canal and packing with 50 per cent alcohol and boric acid solution. Results were unsatisfactory so she consented to operation. On June 13, 1924, we did as complete a simple mastoidectomy as we could, and scarified the opening of her drum perforation. We used a rubber tube drain posteriorly. The middle ear continued to drain so the perforation failed to close. We reinserted our rubber tube down to the middle ear and irrigated, first with a 2 per cent sodium bicarbonate solution, and then with 2 per cent acri-violet. It is necessary in using acri-violet in this way to paint the ear and skin around it where the stain may run with vaseline, so it can be readily cleaned off. After ten days we removed our tube again, and continued our irrigations through the fistulous tract thus established. This fistula began to close in, as irrigations became less frequent and she was discharged August 28, 1924, with a dry ear, which has been dry ever since. There is no evidence of the fistula but we still have our perforation in Sharpnels membrane.

We have two other parallel cases to this with parallel treatment and results. One had a tubercular mastoid with tubercular cervical glands which were treated by x-ray. His mastoid has been well four months.

This discussion would not seem fair and open-minded unless I again admit that I do not think acri-violet is a panacea which will supplant proper drainage or removal of diseased tissue. Nor will it make it possible for us to always get a perfect result with or without operative work. We are using it in all our cases of chronic otorrhoea which do not demand immediate operation, but have not used it long enough to feel sure that the cases that have dried up are going to stay dry. We do think it has facilitated clearing up an infective process more than any other solution we have used in cases where there is good drainage, and no large area of necrotic tissue, that is where it has access to the infection.

In conclusion—we have found acri-violet a solution having high antiseptic properties, non-toxic, absolutely non-irritating and not inhibiting the phagocytic action of the leucocytes nor retarding the healing process unless a large amount of granulation tissue is to be thrown out.

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Discussion

Dr. W. H. Johnston, Muscatine—Since hearing the paper of Dr. Abrahams about one year ago I have used this preparation on a considerable number and varicty of conditions in the throat and ear. I cannot

say that my results have been quite so satisfactory as those reported by Dr. Pearson. In using this preparation I have followed about the same procedure as he has. It is very important that we remember that the action of this dye is greatly facilitated by an alkaline medium. The best results that I have obtained were in four cases of suppuration in Prussak's space, which remained unchanged under the usual line of treatment. I used a 2 per cent solution of acri-violet and the results were very satisfactory. It is important that we use freshly prepared solutions. One point in the treatment of suppurative otitis media with a profuse discharge, I have never thought that these middle ears should be inflated, as he states he does. When we use this preparation we are certain of one thing, that is, it penetrates the tissue, because we can see the tissue stained. This staining property is quite a disadvantage to its use, but can be partially prevented by applying vaseline to the exposed skin where we do not want any effect of the dye. I have found a 2 per cent solution very satisfactory in the post-operative treatment of maxillary antrum infections. Good results have been reported from the use of acri-flavin and gentian violet, here we have an combination of the two which act equally well on gram positive and gram negative organisms. It is non-irritating, and in throat conditions especially, is much more agreeable to the patient than many of the preparations now in use.

THE NON-OPERATIVE TREATMENT OF SINUSITIS*

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The paranasal sinuses are lined with mucus membrane. They all communicate with the nasal cavities. They are subject to all sorts of inflammation. Because they communicate with the nose, they may be infected by any pathogenic germ which may enter the nasal cavity and hence are subject to all sorts of infection. Sinusitis may be either acute or chronic. The acute form may be either simple or infective. The chronic form may be either purulent or simple chronic inflammation. In the chronic form, we may also have cystic degeneration with formation of polypoid growth and also the atrophic form. The symptoms of sinusitis depend upon whether the disease is acute or chronic. These symptoms may vary all the way from a simple cold in the head to symptoms of most grave and alarming nature.

The treatment of sinusitis depends of course upon the condition encountered, and whether the treatment be simple or radical depends upon the simplicity or gravity of the symptoms encountered. Treatment may be either internal, local or operative. The purpose of this paper is to bring out some points in the treatment of sinusitis from the non-operative standpoint.

Some twenty years ago it was a very common practice for rhinologists to trim or remove either the middle or the inferior turbinated bones in cases of sinus trouble. Now this is rarely done, usually the turbinates being fractured or only a small portion of them being removed, just enough to establish proper drainage or to allow the exploration of the sinus with a probe, or the introduction of a canula, by means of which the sinus may be irrigated. Thus we have a tendency to get away from removing nasal tissue and to conserve as much as possible so that none of the function of this tissue may be interfered with.

Some years ago it was quite the routine practice to open and clean out every nasal sinus which showed any sign of disease or acted in the least way suspicious. If you visit many of the large clinics, you will find that sinus operations are very routine and that by far the majority of nasal operations are performed upon the sinuses. A rhinologist just out of a large clinic, starting in private practice, is prone to do a large per cent of sinus operations in proportion to the number of cases handled. As the years go by, he will gradually do less and less of these operations. Of course, one must take into consideration the fact that many things can be done in a clinic that could not possibly be done in private practice. One must take into consideration both the time required for a long, drawn out treatment as compared with the time taken for an operation, and the social standing of the patient, as well as his financial standing. As a rule, clinic cases must be gotten out of the way as soon as possible, even though there may be some added risk in the method of procedure. Some years ago the external sinus operations were in vogue, but now it is rather unusual to encounter a case where one feels it is necessary to operate by the external route, even though the operation has been so modified from the original that the facial disfigurement is not very marked. This statement, of course, refers to patients in private practice. Just as there is a tendency to cure or attempt to cure malignant diseases, such as cancer, without operation, and to cure gastric ulcers by medical treatment instead of surgical, there is a tendency in sinus diseases to get away from operative procedure and to adhere more closely to the medical side of the problem, or at least do only just as much as seems necessary.

Sinusitis varies, of course, in its symptoms and

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may be nothing more nor less than hyperemia of the lining of the sinus, with a filling of the cavity with a serous fluid, or it may be a sinus filled with pus, with accompanying grave symptoms, or it may be a sinus filled with granulations and popyps, with more or less necrosed bone.

As a general rule we may say that if the pain which the patient complains of so bitterly is removed by some method other than an opiate, we have got the sinus to drain, or at least reduced the pressure so that for the time being not much harm is being done and the condition is not becoming aggravated. The most common procedure, perhaps, in attempting to empty the sinus is by means of the suction pump. This works very well in some cases, but by no means in all. It depends a great deal upon what the patient does in the way of carrying out the instructions of the operator, some being able to get on to the hang of the thing almost at once, others seeming never to learn just how to manipulate their throat so that negative pressure is produced. Even after pumping for a considerable time, one finds that he has accomplished nothing except to make the patient feel worse than before. The use of adrenalin and cocaine solution is effective for the time being, but has a disadvantage in that it is followed by an engorgement of the nasal membranes, which aggravates the symptoms first complained of. Using inhalations of tincture of benzoin in hot water, or rather, inhaling the steam from such a mixture, will often open the nasal chambers sufficiently to allow the sinus to drain. A few menthol crystals added to the above solution seems to add greatly to its effectiveness. A prescription of resorcin, grains four; adrenalin, drams one, and boric acid solution, qs. ad. ounces one, will be found gratifying to the patient if used as a nasal spray, and it will also keep the membranes shrunken, and does not have as great a tendency to later engorgement as if the adrenalin and boric acid were used alone.

Many rhinologists employ argyrol dropped into the nose by means of a medicine dropper. Others irrigate the nose with hot saline solutions. However, each one has his own pet method for the treatment of sinus trouble.

About twelve years ago I began to use in all sinus cases, whether acute or chronic, a solution of 10 per cent ichthyol in glycerin, applied in the nose by means of long cotton tampons which were allowed to remain in the nose about twenty minutes. I found that this treatment gave quicker and more lasting relief than anything that I had used up to that time. Almost all cases of acute sinusitis could be cleared up in the course of a few days and it was very rare, indeed, that I had to open a sinus or that the trouble became chronic after I used this procedure. I do not claim that I am the originator of this idea, as I am not, and I am unable to find out who is. But I do think that I have perhaps had more experience with this method than the average rhinologist, and have passed the word along and know now of a great many who are using this as their routine treatment. It is quite necessary to have the tampons at least two inches long and insert them so that they lie along the upper part of the inferior turbinate and reach well back toward the nasopharynx. Much better results are obtained by using the true ichthyol than by using any of the synthetic preparations.

The action of ichthyol in glycerin in the nose, to my notion, is merely a counter-irritant and it extracts mucus, serum and water from the nasal membranes, thus relieving the congestion of the sinus and giving relief from the pain by the decrease of pressure. It also shrinks the membranes, making the nasal chambers wider. The effect lasts several hours and there is no increasing engorgement after this effect has worn away. When the cotton with the ichthyol solution is removed from the nose, the patient as a rule can blow out a great quantity of nasal mucus, often mixed with considerable pus, and almost invariably experiences partial or immediate relief from the pain complained of. I have had scores of patients with sinus trouble whom I have treated with this method, and I think the per cent of relief from pain approximates very closely 100 per cent. The objection might be brought forth that a person cured of a sinus infection or inflammation by this method, or any other method not surgical, is liable to a recurrence of the trouble. This is certainly true. But it seems to me just as logical to try to prevent an operation upon a sinus as it is to try to prevent an operation upon a mastoid by using some palliative method or other. Of late years much talk and considerable experimenting has been done with diathermy in treatment of pus or inflammation in closed cavities, but I have been unable to find any definite report on the value of this method. I have had dozens of patients who had been treated elsewhere with the suction pump when they had sinus trouble, come into my office, saying that their sinuses were bothering and asking that I pump them out. I told them that as a rule I do not use that method, but would try one which I thought better, and it was usually with considerable misgiving that they acquiesced to being taken care of. However, not one so far has ever asked to be pumped with a vacuum pump after having had one or two treatments by the ichthyol method.

Two or three years ago I tried using, in several obstinate cases which did not yield to the ichthyol treatment as I thought they should, an iodine petrogen solution, 5 per cent strength, in place of the ichthyol. This solution is superior in its action but causes too much irritation to be used as a routine, but I still use it occasionally when a patient comes in complaining of severe pain, accompanied by swelling of the face and with considerable temperature. However, this method cannot be used very frequently as it is too strong for the mucus membrane of the nose to tolerate.

In treating cases at the bedside in private homes, which is often quite necessary in private practice, I use the cotton tampon with a small piece of linen thread tied tightly in the middle. After the tampons are introduced in the nose, the thread is put back of the patient's ear. The patient is told to leave the cotton in his nose for twenty minutes, and then by pulling the thread he can take the cotton out, thus making it unnecessary to spend the time waiting in the house to remove it myself.

I might add that in an ordinary nasal cold, ichthyol in glycerin used in the manner described above, seems to do more good in the way of relief than any sort of nasal spray or nasal atomizer which I have yet used. Of course, in sinus disease where there is granulation tissue, polyps, or diseased bone, this treatment is only palliative. It makes the patient feel more comfortable, but undoubtedly does nothing other than give relief.

In presenting this phase of treatment, I again say that I am not presenting anything new, but merely my experience over a period of twelve years, during which time I have perhaps done fewer sinus operations in proportion to the number of people handled than the majority of those interested in rhinology.

INTERNAL INJURIES

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This overworked and oftentimes meaningless term has been of great service to the medical profession. It is the cover for conservation in prognosing injuries. It is the explanation of unexplainable deaths and lesser catastrophies. When used—with the learning and dignity of the medical profession behind it—it savors of the mystery of the various complexities within the human body. The lay person listening to these explanations is usually impressed with the wisdom of the one who is enlightening him. Too many times the one who explains is only hiding behind words—himself in the dark. Internal injuries—how many times does he wait—irrespective of the situation before him—hoping that this vague specter will be lenient? Too many times this hope is based purely on an inherent optimism, and not backed by a correlated knowledge of the factors that enter into this type of injuries.

Success, in the treatment of these cases, depends entirely on having the various problems clearly in mind, so that the signs and symptoms available, associated with certain laboratory and x-ray findings, will make a conclusion possible, promptly. Promptly, because active intervention early is oftentimes the only hope of a successful conclusion.

The material I have to offer is known to us all. I have no hope of presenting anything new or striking. If there be an excuse for presenting this paper, it is that I might present a sequence of thought, that might possibly conserve time and minimize the number of inevitable errors.

In the case of punctured wounds from the outside, we have the point of entrance, the type of weapon, and a knowledge of anatomy that makes our diagnosis quite clear. In the case of our internal injuries of the chest and abdomen, we oftentimes do not know even the direction of the trauma. These cases are the ones of interest to us in this paper.

Shock and its train of symptoms is present in all these cases to a greater or less extent. Pallor, fast thready pulse, sweating, shallow rapid respiration and low blood-pressure being noted. Shock, alone, can kill by allowing the blood-pressure to drop below the "critical level". Shock can come without a specific injury requiring particular treatment. I have seen a man, struck over the liver, in such severe shock, that death appeared certain. Pulseless sterno mastoid breathing, dropped mandible, and eye balls rolled upward, yet he walked that night and left the hospital the following morning. I have seen a man, following a blow over the kidney, walk into the hospital with a normal pulse and three hours later rushed to the operating room, in a high state of shock, from a ruptured kidney. This, of course, being the shock resultant from hemorrhage. The diagnostic value of shock, therefore, is largely in the progression or retrogression of its severity. It must be combated promptly by morphine, fluids, heat, position, etc. Surgical procedures are usually best tolerated soon after the treatment of shock begins to show results. Shock must be lessened so that it will not summate with surgical shock and the "critical level" reached. Promptness must be the rule before hemorrhage, peritoneal contamination, etc., have done great

damage. There is of necessity a clash between these two factors. Only the surgical judgment of experience can guide you, in the proper moment, to use the knife.

The cavity of lesser importance to us is the chest. Our ability to control its injuries is not as great as that of the abdomen. The variety of injuries are less and the diagnosis is easier. It must be remembered that slow compression of the chest, unless it be very severe, does little damage, as the structures within usually alter their position and thus prevent trouble. A quick blow on the chest is always dangerous, and many times cause severe injury when the blow itself was quite moderate.

The great majority of the chest cases will recover, more or less promptly, from shock, and if definite injury exists it will be found to be fractured ribs, torn costal cartilages, fractured sternum, or injury to the costo-vertebral attachments. All of these things can be promptly recognized by means of the x-ray and a careful physical examination.

In the more serious cases of chest injury we must look for the following possible conditions:

Injury to lung—collapse—rupture—pneumothorax—haemothorax.

Commotion of thorax—probably vagal shock.

Traumatic asphyxia.

The class of terrifically crushing injuries with many essential structures involved, which rapidly lead to death are, unfortunately, not sufficiently under our control to include their premortem description.

The lungs and pleura most frequently suffer. The pleura being torn at times by fractured ribs or is injured in common with the lung in crushing wounds. The lung itself most commonly collapses, but in the case of reflex closure of the glotis, the same injury will rupture the lung. The two things of immediate importance to us, then, are the development of pneumo or hæmothorax, or a combination of both. In these closed wounds it is necessary to rupture a bronchial twig to develop a pneumothorax. The hæmothorax usually comes from one or more bleeding pulmonary vessels, but vessels of the thoracic wall may empty into the cavity, through a rent in the parietal pleura, or may cause an extra pleural hemorrhage.

Extra dural hemorrhage from a torn internal mammary artery will cause serious intrathoracic injury. Of course the larger vessels in the mediastinum will rapidly cause a fatal hemorrhage, but our inability to cope with that possibility at present, eliminates it from our present consideration.

The treatment here is first that of shock plus complete rest. If ice caps can be placed on the chest without further shock, they are of value. Morphia in large doses is of value in both the local condition and the resultant shock.

X-ray and physical examination usually clearly reveal chest conditions. Large hæmothorax should be aspirated, but haste is not desirable. Several days later its pressure may have stopped the hemorrhage completely. Then, when the symptoms become purely local, the blood should be removed.

The temptation to enter the chest and ligate the vessels in severe injury, is a dangerous one. When, from the nature of the injury, it is very probable an internal mammary hemorrhage, ligation is indicated and not difficult. It is questionable if there is another clear indication in the closed wounds. Ligation of lobal arteries, lobectomy, etc., have been well established as desirable therapeutics, in the open lacerated type of wound seen in the war. Suture of the heart has been successful. Foreign bodies can be safely removed. It is yet to be demonstrated, however, that we are justified in very many cases in entering the crushed thorax which has no perforating wound.

Commotion of the chest is a clinical entity, probably the result of vagal overstimulation, caused by a severe blow on the chest and unassociated with demonstrable injury. Shock is severe and traumatic breathing appears. All examinations are negative. Death may result from medullary anemia or from cardiac cessation in diasystole. Treatment is merely that of shock. Recovery is the rule.

For the sake of completeness, we must consider the uncommon condition of traumatic asphyxia, or as it is sometimes called, suffocative compression of the chest. It usually occurs in younger people who are severely squeezed, usually both chest and abdomen, for a period of time. Hemorrhages, small punctate, immediately begin to appear over the face, neck, upper arms and head. They stop definitely at the collar line. They become so numerous that they usually fuse causing a purple appearance of the area. Retinal, conjunctive and often intraocular hemorrhage are associated. Shock is more or less severe, breathing short and irregular, and the pulse very shallow. Consciousness may or may not be lost. If lost the hemorrhage that often comes from the nose, mouth and ears may mislead by suggesting skull fracture. Most cases, although not all, are fatal. Treatment is only that of shock.

In the case of injuries, there are two conditions which can not be well considered under either chest or abdomen, and will be discussed here; rupture of the diaphragm, and fracture of the spine.

The lacerating injuries of the diaphragm, found in open wounds, are practically never seen in the closed type. If the break is serious enough to result in a diaphragmatic hernia, other lesions of a serious nature will be found. There is, however, a type of injury to this structure, which we find in falls—particularly falls on the back. It can not be diagnosed at once, but after a day or two, when no evidence of shock remains, and when all other injuries are ruled out, we may still find marked pain, especially on movement; inability to breathe, except in a very shallow manner; severe pain in the epichondium on either side and in the back; particularly under the shoulder blades, or going from one of these points to the other. Oftentimes the fluoroscope will show the diaphragmatic line irregularly, show its movements restricted and sometimes evidence of exudate about it. These cases are usually tearing of the diaphragm, not seriously in one place, but small injuries involving the periphery, both the muscle tissue and the diaphragmatic attachments. Prolonged rest, with the best possible immobilization, will usually clear these cases up.

A broken back, with its ability to disturb respiration and cause other chest symptoms, its ability to cause abdominal rigidity and pain and tenderness anywhere, can simulate many things and should be, particularly, in falls or blows on the back, one of the first things to be diagnosed, or its possibility eliminated. Fortunately, the x-ray is usually quite definite in this.

In the abdomen we encounter a different type of problem than we have in the chest. Its ease of access and the degree of safety possible in entering this cavity make surgical interference, in severe injury, almost imperative. With a diagnosis that is certain, we may wait in some conditions. With a reasonable degree of certainty that the abdominal symptoms are the result of chest or back injury, we should, of course, still stay out. However, with definite abdominal symptoms and a shock that does not promptly clear up, the best course, in the great majority of injuries, is to go in at once. If the injury should, unfortunately for our judgment, prove to be a minor one requiring no interference, we have not jeopardized the man's life, and in the long run this occasional, needless operation will be justified. On the other hand, practically all severe trauma of the abdominal contents require surgery before bleeding or contamination becomes serious. Later our surgery will often be useless, the decision must be made early, not after sequelæ have made it for us.

If the patient, after appropriate treatment, does not promptly recover from the initial shock or recovering from his initial shock, the picture progressively approaches the original one, we can be reasonably sure of hemorrhage. Especially, if there is rigidity, shifting dullness or some of the classical general symptoms of bleeding. If the blow has been over the lumbar region or either epichondrium, the possibility is still greater as the solid organs—liver, spleen and kidney—are the most apt to bleed seriously. However the hemorrhage may come from the intestines, stomach, mesentery, pancreas or in fact almost any structure in the abdomen. If we have time, and the hemorrhage is moderate, the urethral catheter, the rectal tube or a small stomach tube will give valuable information as to the source of the bleeding. Here again we must remember, however, that the stomach or rectal tube may show no blood when the hemorrhage may be serious from either stomach or intestines. Also, the urine may be free of blood because the ureter has been severed or blocked by the same injury that ruptured the kidney.

The liver, being very friable, is the most liable of rupture and is rather easily sutured if its peculiarities are considered, except on its under surface where packing is usually resorted to. The spleen does not lend itself well to reparative surgery, and splenectomy, in the face of serious bleeding, is usually the safest procedure. A ruptured kidney may be moderate and should be left alone even with a bloody urine, unless serious hemorrhage results. If that is the case, nephrectomy is usually necessary, although at times repair may be possible. Hemorrhage from stomach, pancreas, intestine and mesentery is repaired, depending on the anatomical source of the bleeding.

Severe bleeding is stopped by ligating the vessel and usually in that way only. Then, why should we wait while loss of blood continues, hoping that a clot will form or some other thing happen to give conservative treatment a happy ending.

The abdomen should be opened as soon as possible, the liver and spleen first explored and the right kidney which is often injured at the same time the liver is. Finding no source of hemorrhage there, the testines, stomach, pancreas and mesentery are examined. The hemorrhage stopped and the wound closed as soon as possible. In case of a ruptured kidney, of course the lumbar route is followed.

Contamination of the abdominal cavity, with resulting peritonitis, is the second thing of immediate consideration. The stomach and small intestines are often ruptured (as is the pancreas) from the wheel of a vehicle running over the abdomen, as they are caught between the external pressure and the spinal column. The large intestine is rarely injured. The gall-bladder and bile ducts are occasionally ruptured and especially a diseased gall-bladder.

It is an established fact that the peritoneum can take care of almost any contamination if new material is not being continually dumped upon it. So here again our mortality statistics, to say nothing of morbidity, requires prompt action. A rigid abdomen, severe pain in the abdomen, ileus, tympanitis, or any combination of them, associated with shock or following a suspicious type of injury, should merit immediate interference. Repair, of course, depending on the structures injured. Very often following very severe injuries of the intestines and mesentery, we will find a total lack of rigidity, so even our rectus spasm is not necessary as a diagnostic point. Frequently, a very severe hemorrhage from the liver will be associated with a bradycardia. The kidney, oftentimes, is severely injured with prompt recovery from the initial shock and a picture of any minor bruises results, only to suddenly start up with a very severe hemorrhage at any later time. Vomiting which is a most constant symptom of any severe abdominal injury, may be completely lacking if the stomach happened to be empty at the time of the accident. In a lateral squeeze, in which no direct trauma has been applied to the abdomen, we may have a bursting type of perforation of the small intestine.

These last few seeming unrelated sentences are put together only to show that clinical pictures of a classical nature can not be expected if surgical therapeusis is not to be too late. If there is a part of the picture suggesting serious injury operate, the rest is unnecessary. A long text-book description of each possible injury in the abdomen is something we can all give with great clarity. There are little distinctive points which carefully catalogue each separate injury in the abdomen, but clinically they can not always be demonstrated in time to make an early enough decision.

And remember, always, that all the preceding problems are strictly clinical. What the laboratory can do without delaying treatment have it do, but never wait for indefinite laboratory information to cloud a clear cut clinical fact.

And there is only one thing more important in these accident cases in shock, than to get in as early as possible, and that is to do the absolute minimum after you get in and make as much haste, carefully, as you can, getting out.

URINARY TRACT INFECTIONS*

A. J. Farnham, M.D., Traer

The above title is adopted because of the impossibility of making an accurate localizing diagnosis without the aid of the cystoscope, and the object hoped for in presenting the paper is to remind ourselves of tangible methods, diagnostic and therapeutic, both new and old, with which the general practitioner may avail himself in handling these cases.

It is impossible in a general consideration, to separate the infections of the lower, from those of the upper urinary tract but our effort will be directed more especially to the so-called "pyelitis" group.

Etiology—Almost all cases of pyelitis are of bacterial origin, if not quite all. It requires, also, a local factor of diminished resistance to allow the bacteria to attack the kidney pelvis. Normally the kidney pelvis resists infection to a marked degree. The normal urinary tract is capable of excreting from the blood stream enormous numbers of bacteria with impunity to itself. If however, trauma, mechanical obstruction to drainage, or the irritation of certain drugs affect the pelvis, bacterial attack soon takes place.

Infection and inflammation may persist for many years without markedly affecting the kidney pelvis, but if to this is superimposed the irritation of stone, or pressure, as in abdominal tumor or pregnancy, or ureteral stricture or kinking, the integrity of its structure will quickly fail. A "locus minoris resistentiæ" once established, bacterial invasion may be promptly instituted.

The bacteria most frequently found in these cases are: staphylococcus, streptococcus, pneumococcus, colon bacillus, tubercle bacillus and gonococcus. Early in the course, these bacteria are usually found in pure culture; but later, quite as usually will be found a mixed infection. The microorganism most commonly found is the colon bacillus, not however as the primary infecting agent, some other hard-to-demonstrate microorganism, such as an anaerobic streptococcus being the real cause.

In reviewing literature, many methods of invasion are theorized such as ascending, descending, hematogenous, urogenous, by contiguity, through wounds, etc. Probably most cases of bacterial invasion of the kidney can be con-

*Read before the Tama County Medical Society.

sidered to occur in one of four ways: First and most commonly, hematogenous; second, urogenous; third, lymphogenous; fourth, through penetrating wounds.

Hematogenous—Infection of the kidney is never primary. The kidney with a normal urinary tract below it, being able to excrete organisms circulating in the blood stream, will, however, become infected if there be serious obstruction below it, and if the passage of these organisms be repeated, or, their virulence be increased, or, if they have a specific affinity for kidney tissue, the latter probably being true even where there is no obstruction. Hematogenous infection of the kidney is by far the most frequent. Even in a large percentage of the other three ways it is conceivable that this is the route by which the organisms get to the kidney.

It has been shown by Bumpus and Meissner[1] from experiment as well as from the study of clinical cases, that there is a definite relation of focal infections in the teeth and tonsils to pyelonephritis and they cite cases where the removal of these foci not only cleared up the kidney infection but where innoculation of rabbits with the infectious material from the teeth of these patients caused a similar kidney infection, showing not only the possibility of a hematogenous infection, but also the elective localization of certain strains of streptococci for certain organs as shown by Rosenow[2] in 1915. They recovered the green producing streptococcus in pure culture. These investigators also studied the relative ability of the streptococcus and colon bacillus to grow in otherwise strerile urine, showing the persistent growth of the colon bacillus and the difficulty of growing streptococci. This observation is of clinical interest because of the frequency of finding the colon bacillus in urine of these patients in cases where the true cause is a streptococcus or other bacterium, and the colon bacillus only a secondary infection. The finding of the latter should therefore not deter us from seeking other sources of infection with the object of their elimination.

Urogenous—Under this class are cases of urethritis; prostatitis cystitis, vesiculitis and ureteritis to which is superimposed some obstructive factor to the outflow of urine. Infection may travel along the mucous membrane but probably in most cases it will be carried from the lower urinary organs to the kidney by the general circulation.

By lymphogenous infection is usually understood those cases occurring in conjunction with acute or chronic appendicitis and intestinal obstruction as well as cystitis in which the infection is conveyed by the lymph stream.

By penetrating wounds the method of invasion is obvious. Accessory factors are any lowered general or local resistance due to general disease or local congestion or contusion of the kidney as well as all forms if instrumentation of the urinary tract. While calculus is mentioned as a cause of pyelitis, calculus formation is frequently secondary to pyelitis.

Of the various forms of obstruction, ureteral structure and kinks should be emphasized because of their frequency. I have had several cases which resisted medical treatment and were promptly relieved by the ureteral catheter or dilator and one, only by radical surgery. Prostatic obstruction and urethral stricture also come in for their share of responsibility in causing kidney infection. Vaginal prolapse with cystocele is also a common cause of urinary tract infection in elderly women especially.

Pyelitis may occur at all ages. Infants frequently suffer with it. Thompson[5] says it is twice as frequent in children under two years as it is after that age. Soiled diapers and phimosis are potent factors, but the acute local or general diseases are chief causes in infancy.

Symptomatology—The symptomatology of urinary infections is quite variable. Initial symptoms may consist in an indefinite febrile reaction, lumbar or groin pain, dysuria, polyuria or hematuria—any one or any combination of these being present at the onset. The sequence of chill, fever and sweating is seen in many cases, especially those complicating pregnancy. Coincident with these symptoms is lumbar pain radiating along the course of the ureter (usually the right). These pains may simulate labor pains or appendicitis, an altogether disconcerting combination of symptoms.

Severity of the symptoms depends upon the intensity of the reaction to the infecting organisms and extent of the involvement. In all cases where high fever of obscure origin exists, pyelitis or acute infection of the kidney should be considered, and this is doubly true in young children. Often it is very difficult, clinically, to differentiate between the pain of an acute renal infection and that of appendicitis, salpingitis or biliary colic. In infancy and childhood gastrointestinal symptoms are very prominent and must be carefully analyzed, for the kidney infection may be the cause, with diarrhoea and vomiting the effect, or, vice versa, the gastrointestinal trouble may be the primary disorder, and the renal infection the secondary disease.

In chronic cases the renal irritation will cause polyuria and in children enuresis.

The chief symptom of course is pus in the urine. The microscope will also show red blood cells, epithelial cells of various kinds, fibrin and bacteria. "Many cases of so-called idiopathic hematuria are now shown to be due to chronic pyelitis with involvements of the medullary tips of the kidney, resulting in a profuse unilateral or bilateral hematuria."[3]

Lowenberg[4] and others have written on "the frequency of pyelitis in its relation to obscure temperatures in infants", urging more attention to the urinary examination in all sick children. In young children there is often a notable absence of clinical symptoms pertaining to the urinary tract, only the laboratory findings revealing the true condition. The clinical picture in these children may be so mild on one hand that the fever thermometer only can detect an abnormality, and on the other hand so severe as to suggest acute meningitis.

Diagnosis—The diagnosis may be made only by a careful study of the urine, which shows pus, albumen and very commonly the colon bacillus in acid urine. This germ may, to all practical purposes, be recognized in the freshly obtained urine, by a slight cloudiness which has no tendency to settle on standing, and after standing, a few minutes if it be agitated just slightly, a swirling effect is seen. Under the microscope it is seen as a motile bacillus, but it should be remembered that the typhoid bacillus is also motile. It is very rare to find the colon bacillus in a freshly voided alkaline urine but it usually is found in pure culture in the sharply acid pus urines. It should also be remembered that when tubercle bacilli are present in pure culture the urine is also acid, but later in the course of the tuberculous infection a mixed infection is found, and then it will be alkaline. In alkaline pus urines one would expect to find the staphylococcus, streptococcus, diphtheria bacillus, pneumococcus or bacillus ammoniagenes. In women a catheterized specimen is frequently necessary, in fact this should always be done. The finding of any appreciable number of leucocytes or red blood cells in the urine of any patient should lead to the careful consideration of pyelitis. In this connection pain and tenderness over the kidney should be sought for. Tenderness can best be brought out by the "fist percussion" of Dr. J. B. Murphy, but this should be done with caution.

Leukocytosis is present in the severe acute cases. Of course the accurate diagnosis and localization of the infection depends upon cystoscopic examination, ureteral catheterization, pyelography and separate function and cultural examinations of the divided specimens of the urine which can only be done by a competent urologist, and these cases should be referred to him reasonably early under two conditions, namely: first, in all cases not responding to medical treatment in which no focal infections or other extraneous etiological factors can be found, and second, most cases where such extraneous etiological factors have been demonstrated and some major procedure is contemplated.

Treatment—All acute cases should be put to bed, mild catharsis given and a full but low protein diet allowed. During the very acute stage six to eight glasses of fluid should be taken every twenty-four hours and as soon as improvement begins increase this to ten to twelve glasses per day. Focal infections should be sought for and dealt with, and very important is the question of intestinal stasis. Keep the body warm when a urinary tract infection exists and this also applies prophylactically in all other diseases.

Usually the drug treatment is determined by the reaction of the urine, the rule being—to acidify an alkaline urine and alkalinize an acid urine. To accomplish this we use sodium bicarbonate or citrate either alone or combined to alkalinize an acid urine and sodium benzoate or acid sodium phosphate to acidify an alkaline urine.

Hexamethylenamine enjoys considerable reputation but I have come to doubt its value largely. It is only of value in acid urine and some advise that it be combined with acid sodium phosphate to increase the intensity of the acidity of the urine. It should never be combined with alkalies. Hexamethylenamine is given in doses of 30 to 50 grains for twenty-four hours (divided) for not over five or six days when it should be supplanted by some other urinary antiseptic for a few days. During the past two or three years it has been used intravenously (that precocious and often pernicious method of administering many drugs). In a personal communication from Dr. Preece (Waterloo, Iowa), he reports a case of a girl twelve years old who had been given hexamethylenamine intravenously, in an out patient clinic, for pyelitis. Within ten minutes alarming symptoms of shock with gastrointestinal upset came on and also severe skin symptoms. The girl was in serious condition for two or three days but made a good recovery.

A peculiar form of urinary infection is seen in infants and young children in which there is ammoniacal decomposition of the urine with more or less severe excoriation of the skin about the gen-

itals and thighs. This is due to the bacillus ammoniagenes found abundantly in the intestinal tract, especially of those artificially fed. It grows best in alkaline medium. The condition is quickly relieved by acidifying the urine by administering sufficient acid sodium phosphate and rinsing the diapers (after washing) in 1 to 5000 bichloride and allowing these to dry impregnated with the bichloride.

Porges (Necker)[6] first observed the clearing up of a urinary infection after the injection of neosalvarsan and Gross of Vienna introduced the method of treating pyelitis by intravenous injections of neosalvarsan with apparent strikingly successful effect.[7] The technic is the usual method employed, namely, freshly prepared solution in recently boiled with distilled water. The average dose is 0.15 gram of the drug. Subsequent dosage according to effect and response, as low as 0.05 gram and up to 0.3 gram—total number of injections usually four, intervals from three to five days. Its value has been compared with the treatments by pelvic lavage of the same condition, the merits of which are variously estimated. Old salvarsan does not work.[7]

Late in 1924 apeared the report of Leonard's work[8] with the alkyl group of resorcinols of which normal hexylresorcinol seems to exert the maximum effect. In his study he enumerates six qualifications for the ideal urinary antiseptic which were formulated by himself and other prominent urologists. These qualifications are as follows:

1. It should be chemically stable.
2. It should be non-toxic.
3. It should be non-irritating to the urinary tract.
4. It should exert an antiseptic action in high dilution in urine of any reaction.
5. It should be eliminated in the urine in sufficient concentration to exert a local antiseptic action and at a rate by which continuous antiseptic action may be attained.
6. It should be administered by mouth.

Hexylresorcinol fulfills all of these requirements but of course does not cure cases which have unremoved foci of infection or where mechanical obstruction exists. I have had a patient just recently who has a badly prolapsed and retroverted uterus, who came to me with an acute pyelo-cystitis with alkaline urine. She improved under sodium benzoate but the pus did not entirely disappear. After two weeks, when the urine was acid, hexamethylenamine was tried. Five days later the pus was found increased and the urine had returned to an alkaline reaction. At this time hexylresorcinol (0.3 gram t.i.d.p.c.) was given. In five days the urine was clear and all urinary symptoms, except slight frequency were absent. This condition is maintained so long as she takes the hexylresorcinol. She has no foci of infection demonstrable and what I think she needs is a restoration to normal of her pelvic organs.

In closing may I say that whether we consider this condition as a primary or as an associated disease the fact remains that we have a clinical condition that has a definite and distinct entity in the exhibition of symptoms. These patients should be examined carefully. We must remember that this thing may come to any one. It is no respecter of persons nor of age hence our vigilance should never tire of seeking for this class of urinary tract infections.

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CHEROKEE HOSPITAL FOR THE INSANE
(Iowa Medical History)

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The Twenty-fifth General Assembly decided to build a hospital for the insane in northwestern Iowa and appointed a commission to visit and report on the sites proposed at Cherokee, Le Mars, Sheldon, Storm Lake and Ft. Dodge. Drs. Gilman, Hoyt, Hill and F. McClelland of Cedar Rapids were named the commission by an agreement, in the finding, in joint session, the report of the commission was heard and by ballot, Cherokee was chosen. At this same session of the legislature the City of Cherokee promised to have a side track made by the Illinois Central R. R. to the farm where the buildings were to be erected, so that brick and stone could be delivered with a locomotive, and coal and fuel in abundance in mid-winter and in rainy weather, and the building committee thought the Burroughs land near town suitable for the patients to cultivate and bought it at $45 per acre. Red or light colored jasper was used for the first buildings erected. They have slate roofs. The Cherokee Hospital as it now stands shows the good materials that have been used, the advantages of the railroad for the transportation first of building

materials, then of coal, and of various kinds of supplies.

In August, 1902 the board of control elected Dr. Voldeng as the first superintendent. He had served the state at Independence as assistant physician. Matthew Nelson Voldeng was born on the farm of his father, Nels Lars, and his mother, Anna Mathis Voldeng near Decorah, Iowa, January 21, 1863. He attended Luther College at Decorah receiving A.B., 1883. He graduated in medicine from what is now the University of Illinois in 1887. Post-graduate work was done in Berlin, Paris and London in 1855-56. He wears the honorary degree of L.L.D. given by Buena Vista College, Iowa, in 1914. He was the assistant physician in the State Hospital at Independence seven years until his resignation in 1895. While engaged in private practice in Des Moines he was professor of pathology 1897-98, and in charge of neurology and psychistry 1899-1902, Drake University School of Medicine. He was then elected by the board of control to prepare, open and take charge of the new State Hospital at Cherokee. After thirteen years he was transferred from Cherokee to Woodward, where as superintendent and medical director of the State Hospital and Colony for Epileptics, he again has demonstrated his ability to establish, organize and put in operation an up-to-date institution with suitable equipment.

Dr. George Donohoe, the second superintendent of the Cherokee Insane Hospital, was born in Massachusetts in 1876; his early education was acquired in his native state; he graduated from the Boston State Hospital. Became the second assistant physician and acting pathologist in the State Hospital at Independence. When a superintendent was needed to take charge of the Iowa Inebriate Hospital at Knoxville, Dr. Donohoe was appointed there. When Dr. Voldeng left Cherokee Dr. Donohoe was immediately elected by the board of control to become the second superintendent at Cherokee.

PSYCHOPATHIC HOSPITAL, IOWA CITY
(Iowa Medical History)

Cershom H. Hill, A.M., M.D., Des Moines

In August, 1921, when Dr. Lowrey was assistant director and associate professor of psychiacrist he gave the following history of this specialty in the United States:

The law establishing a State Psychopathic Hospital was enacted in 1919, Ch. 235 of the Thirty-eighth General Assembly. It provides for the establishment of a hospital, especially designed, equipped and administered for the care, observation and treatment of persons who are afflicted with abnormal mental conditions. The hospital is put under the management of the State Board of Education to be located at Iowa City and connected with the College of Medicine of the State University. The board appoints the medical director who shall serve as professor of psychiatry in the College of Medicine. The director in addition to having charge of the hospital shall seek to bring about systematic cooperation between the several State Hospitals for Insane and the State Psychopathic Hospital. Provision is made for him to visit and advise the hospitals, on request. The law carries the first provision made in the state for admission of voluntary patients to a state hospital for mental diseases. It provides that they may come voluntarily, either as public or private cases. Patients may also be committed by judges of the district court or superior courts as suffering from an abnormal mental condition which can probably be remedied by observation, treatment and hospital care. The expense to be borne by the family or the county as the county may decide. It will be noted that this form of commitment does not carry with it the idea of judging the person insane which many people don't like, preferring to think that the patient is sick, as indeed he is. We have then four legal classes of patients, viz.: Voluntary, private coming, voluntary public, committed private and committed public. Of these, the second, an order of the judge that support be paid from public funds, the third, an order of the commitment by the judge; the fourth, an order of commitment and an order for public support. Ample power is given the director to insure that the hospital may select its cases and transfer to the district state hospitals cases not regarded as suitable for the psychopathic, or cases which prove to be chronic or incurable. The original provisions were somewhat modified at the last General Assembly, but the same ends are each preserved and subserved. The total appropriation of $272,000 was granted by the Thirty-eighth and Thirty-ninth General Assemblies for the building and equipment. The plans were drawn by the director, Dr. S. T. Orton. It contains sixty beds with ample day space, so arranged, that a classification of the patients may easily be arranged with respect to their therapeutic needs. There is an ample and well arranged out-patient department, offices and needed rooms for the medical and social service, laboratories for chemistry, serology, pathology, psychology and experimental work; library class room and teaching laboratory. It is in my opin-

ion the best plant in this country for the particular work.

The first psychopathic hospital in this country was established at the University of Michigan in 1906. The Boston Psychopathic was opened as a department of the Boston State Hospital in 1912. The Henry Phipps Psychiatric Clinic was opened in Baltimore in 1913. The New York Psychiatric Institute was re-organized in connection with the Manhattan State Hospital in 1902.

The first psychopathic hospital in this country was established at the University of Michigan in 1906 and the State Psychopathic Hospital in Iowa located at Iowa City in the second one of the kind in the United States, and it is to be observed by the physicians who read this Journal that the four state hospitals already described are wholly under the management of the State Board of Control while this one according to the law of Iowa and to the practical management of the institution is in the care of the State Board of Education. The Board of Education visits the Psychiatric Hospital somewhat as it does the other hospitals under and managed by the state at Iowa City and provides by-laws as it does to the other hospitals at Iowa City and directs Dr. Orton as it does the other doctors working for the state at Iowa City.

We learn from the American men of science that Dr. Samuel Torrey Orton was born at Columbus, Ohio, on October 15, 1879; that he received the B.S. degree at the Ohio State University in 1901, and his M.D. diploma from Pennsylvania in 1905. His A.M. degree came from Harvard in 1906. He was pathologist and clinical director of Worcester State Hospital, Massachusetts, from 1910 to 1914; he was instructor in neuropathology at Harvard in 1913. He was a scientific director in Pennsylvania Hospital at Philadelphia before he had the professorship which he has occupied at Iowa City. As professor of psychiatry and director of the State Psychopathic Hospital since he came to Iowa.

MATERNITY MORTALITY STATISTICS

The maternity statistics collected by Ramsbotham in 1855 showed a maternal mortality in 50,000 cases, of less than one-half of one per cent, about the same as it is today—12,000 in the United States yearly—toxemias cause 20 per cent, sepsis 33 per cent of these deaths.

If mothers could be made to understand the great importance of competent medical supervision during the nine months prior to delivery, the results would be quite different.

WORLD CONFERENCE ON NARCOTIC EDUCATION

Resolutions presented by the International Narcotic Educational Association:

Resolved: That a World Conference on Narcotic Education shall be held in the City of Philadelphia about the third week in June, 1926.

Resolved: That the League of Nations be requested to call a conference of the Opium Committee, the Mixed Sub-Committee of the Health Committee, and the Advisory Committee on the Traffic in Opium, and such other organizations as our president shall deem proper, to meet at the same time and place with educational agenda only.

Resolved: That the president of the United States be requested to invite the governments of the world to join with our government in participation.

Resolved: That Congress be requested to make an appropriation for a fitting participation of the government of the United States.

Resolved: That the press, the pulpit, the motion pictures, the radio, educational officials, federal, state, local, civil, religious, educational, patriotic and other constructive organizations and institutions be requested to cooperate.

Be It Further Resolved: That the president of the International Narcotic Education Association, with the advice and consent of the executive committee, is hereby authorized to appoint committees and take other steps deemed necessary or advisable to carry out the provisions of this resolution.

"STOP CROSSINGS"

Those interested in efforts to reduce casualties at railroad crossings will be glad to learn that the State of Michigan has taken a notable step in that direction. Michigan has recently passed a law known as "House Enrolled Act No. 51", which provides:

"Whenever, in the opinion of the State Administrative Board, the safety of the public demands the stopping of every vehicle, whether motor, horse-drawn, or otherwise, upon approaching and before passing over any crossing at grade of railroads, interurban, and suburban railways with public streets, highways, alleys, private roads, private ways and crossings, the said State Administrative Board shall designate such crossing a 'stop crossing'."

As Milwaukee Railroad records show that more than one-third of the auto accidents on railroad crossings are due to drivers running into trains, it is plain that the observance of this law would altogether eliminate such accidents and, of course, it would bring about a gratifying reduction in other cases.

The state of Michigan is to be congratulated upon its initiative in adopting this practical measure to save life and limb.

The Journal of the Iowa State Medical Society

David S. Fairchild, Editor ..... Clinton, Iowa

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Office of Publication, Des Moines, Iowa

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DANGERS IN X-RAY AND RADIUM WORK

The danger of x-ray work has been brought to our attention in a most emphatic way in considering ten cases of claims for damages prosecuted against members of our Society during the past few years, which it has become our duty to aid in defending, and we have in an unusual degree become impressed with the difficulties of convincing the court and jury that every possible means have been employed to lessen the dangers to the patient. No question can be raised as to the value, and even the necessity, of x-ray and radium treatment in many cases, and that the physician is warranted in taking certain chances, even in the presence of the possible dangers. Admitting the dangers, no physician is warranted in criticizing any given case, even in the presence of an admitted unfortunate result.

To bring it home to every one who uses these agents, and particularly, because of the great number of physicians who have installed powerful x-ray apparatus, with but little training in its use and dangers, we are printing an editorial which appeared in the May number, 1925, of the Atlantic Medical Journal—Editor.

The importance of x-ray diagnosis and x-ray treatment and radium treatment has grown so tremendously since their earliest use that the members of the profession, in many instances, have lost sight of the dangers involved. Many safety devices have been developed, and if all the knowledge is employed today that is available, the use of these agents is practically without danger, except, possibly in rare instances where there is an idiosyncrasy or some combination of complications which make a damaging effect unpreventable.

All of the present generation of physicians can still remember the injurious results occasionally obtained in x-ray examinations in the early days, when the exposures were as long as one or two hours in order to get a picture. We have still with us some of the physicians who have suffered from the early consequences of continued and repeated exposure to the rays in the diagnosis, and especially fluoroscopic examinations, but many of these have given their lives to the cause of science in the process of investigation of this agent, which at first was thought to be entirely harmless.

It seems to be the impression today that the roentgen rays have now been made safe. As a matter of fact, the x-rays are a hundred times more dangerous than they were in the early days, because their power and intensity have been increased at least a hundredfold. Our safety lies, not in the agent itself, but in the knowledge that is available for protection. No one should undertake the use of the x-rays or radium without being fully informed of the dangers involved and of the protection necessary to guard against them.

Part of the dangers are electrical. In the early days, when we were using coils, the electrical charges amounted to practically nothing. Many of us have taken the full output of the machine in a single spark and the next instant went on with our usual work. Today, however, with the modern high-power autotransformers, a spark of this kind, especially if there is a ground established, means instant death to either the patient or the doctor, if such a condition develops. Therefore every possible precaution to guard against this occurrence must be taken.

There is danger from the effects of radiation either improperly applied or excessively applied. A mere statement of duration means nothing. The intensity of the radiation depends upon the voltage used and the milliamperage, influenced by the amount of filtration, of course; also upon the time. The variation of any of these factors will make a tremendous difference in the effect. No one should be allowed to use the roentgen rays unless he is acquainted with these factors, knows how to control them, and is familiar with their indications. These dangers are present both in diagnosis and treatment with the x-rays, and the danger from the radiation, when not properly

guarded, may affect either the patient or the operator.

There is a false impression that the man who does only a little x-ray work in conjunction with his many other duties is not involved in any risk. Such a physician is much more of a menace to himself and his patient than any of the others, because he is less liable to have a complete equipment and not so apt to take the proper precautions. With all the multitudinous problems associated with general practice, it is almost impossible for him to keep sufficiently informed to guard against all of the dangers. Small amounts of exposure continued over a long period of time have been the greatest peril to the operator. Formerly these dangers involved only the skin, but today, with the more powerful equipment, they involve the blood and other essential organs.

Much has been written upon all of these subjects. Recently a book of four hundred and seventy-six pages has been written upon the "Dangers in General Roentgen Diagnosis and Treatment and Their Avoidance", which will give some idea of how extensively this subject has been discussed.

It would seem advisable, in this advanced stage of roentgenology, that each state should require a special license to permit any physician to use or direct the use of roentgen rays and radium in diagnosis and treatment, and such a license should, of course, be issued only after determining that the applicant is familiar with the dangers involved and the methods of guarding against them.

MALIGNANT TUMORS OF THE BLADDER

Doctor Robert C. Coffey of Portland, Oregon, published an exceedingly interesting paper in the May issue of Northwest Medicine under the title of "A Technique of Simultaneous Implantation of the Right and Left Ureters Into the Pelvic Colon Which Does Not Obstruct the Ureters or Disturb Kidney Function."

The implantation of the ureters direct into the colon has in the past been disappointing because of the dilatation of the ureter, with ascending infection of the kidney. In some experimental work Dr. Coffey found that if the ureter was made to run for some distance beneath the mucus membrane before entering the lumen of the intestine the ureter did not dilate. The first observation was made on the bile duct and from this Dr. Coffey was lead to extend the principle to the ureter.

In the paper referred to Dr. Coffey presents the technique by which the ureter is made to pass underneath the mucosa thus preventing dilatation and consequent ascending infection of the kidney.

We are informed that Dr. C. H. Mayo has used this method of transplantation in exstrophy of the bladder. Dr. Coffey brings this principle to bear in cancer of the bladder. In extensive cancer of the bladder the only course to follow is a complete extirpation of the bladder, but until the investigations of Dr. Coffey there were the ureters, and the deplorable condition of the patient, from the diversion of the urine to the surface.

Bardenheur first introduced the radical operation of complete extirpation of the bladder in treating tumors of this organ in 1887 but did not meet with favor on account of the pitiable condition of the patient.

The technique worked out by Dr. Coffey in dealing with ureters will overcome the objection to the Bardenheur operation, not only in the complete extirpation of the bladder, but in other conditions in which the ureters are involved and may be transplanted into the intestine without dilatation and consequent involvement of the kidney by ascending infection.

The sixteen years of successful work convinces Dr. Coffey that he has finally found a safe method of transplantation.

LEGAL OPINION ON SECTION 2447

Iowa City, Iowa, July 29, 1925.

D. S. Fairchild, M.D.,

Dear Doctor:—

I have your favor of July 24th, requesting an opinion upon the question "Whether Section 2447 should apply to physicians who had received licenses to practice medicine prior to the passage of this law, and if it should apply, what remedy has the medical profession, short of a repeal of the law"? You also ask me to include in my answer the "theory of the act, what was its purpose".

Answering the questions propounded, will say that the language of Section 2447 is unambiguous and clearly revokes all licenses theretofore issued as of date June 30th, following the date of the issuance of such license. This means that every license that was issued to practice medicine in this state, prior to June 30, 1925, expired on that date, and that before such licensee could lawfully practice after June 30, 1925, he must have had such license renewed.

There is no doubt of the power of the legislature to revoke licenses granted. The power to license occupations or privileges, and to impose and collect license fees or taxes thereon, is found in the generic law and is an exercise of the police power of the state. Statutes passed pursuant to this power confer no property or vested right, and the license granted

pursuant to the statutes passed in the exercise of this police power is merely a permit or privilege, and is not a contract between the state granting it and the person to whom it is granted.

This being true, the legislature undoubtedly had the power to terminate all licenses theretofore granted, and to require new licenses to be procured as a condition precedent to the right to practice medicine in this state.

It is customary to charge a fee for the granting of a license. These fees may be imposed either in the exercise of the police power, or in the exercise of the power to tax. Where the amount of the license fee is not greatly in excess of the expense of regulating the business and of issuing the license, it is not interpreted as an exercise of the taxing power. In my opinion, the purpose of imposing a license fee of one dollar was not primarily to raise revenue, but as a method of exercising supervision and control over the practice of the profession.

The medical profession certainly has no remedy short of a repeal or modification of the law.

I think I have sufficiently indicated already that the purpose of the act was not to raise revenue through the exercise of the power to tax, but rather to regulate the practice of the profession and impose a fee designed primarily to defray the expense of the regulation.

If this information does not clearly answer the questions you had in mind, I should be glad to hear from you and to submit further answers.

Yours very truly,
Charles M. Dutcher.

PROFESSIONAL INSURANCE CORPORATION

For the information of the members of our Society, we have investigated the Professional Insurance Corporation, which has its home office in Des Moines.

It is a commercial malpractice insurance company and offers indemnity in case of judgment.

The Iowa State Medical Society maintains a department of defense against malpractice which has been in operation for eighteen years and has considered three hundred and seventy-five cases, but we cannot pay indemnity; we can only pay attorney fees, under the law. A full statement of our work will be found in the July number of the Journal of the Iowa State Medical Society.

If a member is apprehensive of a judgment or is in doubt as to the merits of his case, we would suggest that he carry commercial insurance. There are several of these companies, and if there is a suit for malpractice, we co-operate with them in the defense of our member under certain conditions. We have no direct business relations with commercial insurance, and offer no advice to our members, or carry advertisements in our Journal. It is entirely a matter of safety to be determined by members themselves.

We are publishing in this connection a statement of responsible officers of the "Professional Insurance Corporation."—Editor.

Des Moines, Iowa, July 31, 1925.
J. H. Sams, M.D.,
Clarion, Iowa.
Dear Dr. Sams:

In accordance with your letter I have investigated the Professional Insurance Corporation and find the following:

The Professional Insurance Corporation is a mutual company and assessments other than the premiums can be made accordingly on those carrying its insurance.

W. A. Guild, M.D., Des Moines, and Jean Du Plessis, M.D., Chicago, are the medical members of the Board of Trustees. Dr. Striker, D.O., Iowa City; Dr. Marshall, D.O., Des Moines, and Dr. McManus, D.O., Kirksville, are the remaining directors. Sampson & Dillon, Des Moines, are the attorneys.

This company is operating under the laws of Iowa and certainly must have complied with them. I desire to call your attention to two facts—neither Dr. Guild or Dr. Du Plessis belong to their county or state society, and three osteopaths are on the board of directors.

Fraternally, yours,
C. G. THROCKMORTON,
Executive Secretary.

Des Moines, Iowa, July 18, 1925.
C. G. Throckmorton, Exc. Sec'y,
Iowa State Medical Society.
902 Bankers Trust Building,
Des Moines, Iowa.
Dear Mr. Throckmorton:

Following our conversation of this morning, I am enclosing herewith a specimen policy of our company, together with the several premium rates.

As I stated to you in our conversation, we are seeking to protect all licensed practitioners who are operating under and by virtue of the laws of the state in which they are located. The only difference we make is in the difference in premium, as you will notice, which has been worked out by our actuaries.

It is the policy of this company to write this class of insurance at the lowest possible rate, giving adequate protection to our policyholders. We, of course, are operating under the laws of our state, which you know are very strict, and which are enforced very strenuously by the insurance department.

We want to suggest too that this is an Iowa concern and its assets and surplus will be invested in Iowa securities. Its overhead expenses will be spent by employes of this organization in Iowa, and, of course, at the present time, mostly in Des Moines.

Iowa physicians would not like it if we went to Chicago and New York for medical assistance. We think that this applies equally to insurance—that Iowa practitioners should patronize an Iowa concern.

Thanking you for the courtesy of the interview

and for any help or assistance that you can lend us, I am

Very truly yours,
HOMER H. SPARKS,
General Sales Manager.

Des Moines, Iowa, July 18, 1925.

Dear Doctor McGuire:

The Iowa medical profession has expressed its appreciation of the Professional Insurance Corporation so heartily by inquiries and applications for professional insurance that we feel encouraged to again call its special features to your notice.

First of all the purpose of the Professional Insurance Corporation is to guide you away from malpractice entanglements.

Second—to guard your practice, which is your chief asset, in case intimidating or malicious threats or actions are contemplated against you.

Third—to consult continually with you in regard to professional business matters such as collecting of disputed accounts, contracts, notes, case records, etc., in an endeavor to train you so that successful malpractice suits against you will be impossible.

Fourth—to endeavor to suppress undesirable publicity in regard to your professional practice.

The Professional Insurance Corporation is your home company. In a few minutes, by phone or wire, we are at your immediate service; and within a few hours our legal department, which specializes in professional defense, has taken your case under advisement and has told you exactly what steps to take for your complete protection.

No point in Iowa is so far distant but that if a case comes to trial our general counsel can personally be present to assist and guide your local attorneys.

The Professional Insurance Corporation has constantly on hand trained, expert witnesses for use in any and all emergencies.

The Professional Insurance Corporation is a mutual legal reserve company furnishing professional defense and protection insurance at cost. It is an Iowa company under the scrutinizing supervision of the insurance department, which you know to be the most exacting and careful of all state insurance departments.

The Professional Insurance Corporation is nonsectarian, non-political, shows no favoritism. It is, instead, based on sound business principles, and is a business organization for the benefit and protection of professional men and women.

We feel sure you will appreciate the above facts and at once make use of the enclosed application for membership.

For your convenience we are enclosing a premium rate sheet. Make an "X" in front of the policy desired and send it with your remittance and application. Yours for competent, common sense protection and reasonable rates.

PROFESSIONAL INSURANCE CORPORATION
W. A. Guild, President.

Des Moines, Iowa, June 18, 1925.

Dr. C. F. Cashman,
Hartley, Iowa.

Dear Doctor Cashman:

For answer to your letter of June 16th, will say that the Professional Insurance Corporation was the outgrowth of a clearly defined notion among medical practitioners that they should have an insurance company which was sympathetically interested in the profession; a company which would try to educate its policyholders as to how to avoid malpractice suits; a company which is concerned first with keeping out of trouble and at the same time able, ready, and willing to defend them in litigation if same became necessary.

If you become a member you may feel free at any time to consult with our legal department on all legal matters affecting your professional business; and, in this connection we are pleased to advise that our general counsel was at one time assistant attorney general of the state, during which time he acted as special counsel for the insurance department of Iowa.

The officers and directors responsible for directing the policy of this corporation along the lines indicated above are medical men, of wide experience who know the needs of the practitioner. These men have secured experienced and competent people to look after the underwriting and technical part of the business.

As you know, our company is at all times under the closest supervision of the insurance department of Iowa, which state has an enviable reputation for the producing of a large number of successful insurance companies.

Trusting that the foregoing answers your inquiry and awaiting your early application, we beg to remain

Very truly yours,
PROFESSIONAL INSURANCE CORPORATION
K. D. Casey, Acting Secretary.

PREMIUM RATES

PROFESSIONAL INSURANCE CORPORATION

Insurance Exchange Building, Des Moines, Iowa

MEMBERSHIP PRIVILEGES

All policyholders of the Professional Insurance Corporation are alike entitled to all membership privileges.

The contract also provides all our members with the following special services:

1. Leaflets issued frequently on how to avoid legal complications.
2. Consultation regarding professional business matters.
3. Guarding against unfavorable publicity.
4. Complete defense in malpractice cases and threats.

In addition to the foregoing, we furnish indemnity in the amount and at the rates shown below:

GENERAL PREMIUM RATES

[] No. I—Premium charge—$12.50.
Maximum indemnity for the policy year is $5,000.00, whether for one or more cases.

[] No. II—Premium charge—$17.50.
Maximum indemnity for the policy year is $10,000.00, whether for one or more cases.

[] No. III—Premium charge—$17.50.
Maximum indemnity for any one case is $5,000.00, with a total indemnity for the policy year of $15,000.00.
[] No. IV—Premium charge—$20.00.
Maximum indemnity for any one case is $10,000.00, with a total coverage for the policy year of $15,000.00.

Study each of the above classifications and then mark the square in front of the one best suited for your needs, and return the marked card with your signed application.

PREMIUM RATES

PROFESSIONAL INSURANCE CORPORATION
Insurance Exchange Building, Des Moines, Iowa

All policyholders of the Professional Insurance Corporation are alike entitled to membership privileges. These include instruction, consultation regarding professional business matters, protection against unfavorable publicity, and a complete defense in all malpractice cases and threats. Policyholders are indemnified against loss in addition to the above.

There is no discrimination between members as to amounts of insurance or premium rates. All are treated alike. The various rates are for varying amounts of indemnity coverage and for differing classifications of risks, according to hazard.

OSTEOPATHIC PREMIUM RATES

[] No. I—Premium charge—$12.50.
Maximum indemnity for the policy year is $5,000.00, whether for one or more cases.
[] No. II—Premium charge—$17.50.
Maximum indemnity for the policy year is $10,000.00, whether for one or more cases.
[] No. III—Premium charge—$17.50.
Maximum indemnity for any one case is $5,000.00, with a total indemnity for the policy year of $15,000.00.
[] No. IV—Premium charge—$20.00.
Maximum indemnity for any one case is $10,000.00, with a total coverage for the policy year of $15,000.00.
[] No. V—Additional Premium charge—$5.00.
Any one of the above policies made to cover and indemnify Osteopathic Surgeons and those practicing under Physicians' and Surgeons' licenses by the addition of this premium charge.

Study each of the above classifications and then mark the square in front of the one best suited for your needs, and return the marked card with your signed application.

NOTED CHEMISTS WILL GIVE AID TO HOOVER

The appointment of an advisory committee composed of outstanding members of the chemical industry to co-operate with the Department of Commerce has been announced by Secretary Hoover.

The purpose of this committee is to assist the chemical division of the department in mapping out a program of work which will be of the most practical and immediate benefit to the industry.

The membership of the committee, as announced by Secretary Hoover, includes Dr. Leo Bakeland, president, American Chemical Society and inventor of bakelight; Dr. A. S. Burdick, president of the Abbott Laboratories of Chicago, and formerly president of the American Drug Manufacturers' Association; Dr. H. E. Howe, editor of the Journal of Industrial and Engineering Chemistry; Dr. Charles H. Herty, president of the Synthetic Organic Chemical Manufacturers' Association; Henry Howard, chairman of the board of governors of the Manufacturing Chemists' Association; G. Ober, president of G. Ober & Sons, Baltimore, and past president of the National Fertilizer Association; E. O. Trigg, president of John Lucas & Co., Philadelphia, and president of the Agricultural Insecticide and Fungicide Association; A. Cressy Morrison, president of the Acetylene Gas Manufacturers' Association, and S. W. Wilder, secretary of the Manufacturing Chemists' Association.

ZINC STEARATE DUSTING POWDERS FOR INFANTS

The second report of the Committee on Accidents from Zinc Stearate Dusting Powders appointed by the Board of Trustees of the American Medical Association has recently been published. Copies of this report, with an appendix showing the opinions of thirty-four representative pediatricians on the therapeutic value of such powders, can be obtained on request. Address, Committee on Zinc Stearate Dusting Powders, American Medical Association, 535 North Dearborn Street, Chicago, Illinois, enclosing a self-addressed, stamped envelope.

There were reported to the committee 131 accidents from the inspiration of zinc stearate dusting powders by infants. Twenty-eight of the victims died. The committee conferred with representatives of certain distributors concerning the dangers incident to the use of such powders on infants. Following a meeting held at the headquarters of the American Medical Association, these distributors agreed to co-operate by adopting self-closing containers for the powders they distribute and agreed that cautionary labels are desirable. Opinions were secured from thirty-four representative pediatricians concerning the therapeutic value of zinc stearate dusting powders. Thirty-one believe that such powders have no advantage over other dusting powders, that they constitute a hazard to infant life, and that their use should be discouraged.

"THE OLD COUNTRY DOCTOR"

Thomas R. Shipp of Washington, D. C., writes to the Secretary of the American Medical Association suggesting a statue to the "old country doctor." The letter was printed in the American Medical Association Bulletin for April, 1925.

To the Editor:

Among many and varied equestrian statues in the national capital, there is one deserving type of pioneer American missing. That is the old country doctor.

There are statues of generals, admirals, inventors, educators and statesmen. There is one of the old Methodist circuit rider. Why shouldn't the old country doctor be honored? He filled a distinct and indispensable place in the history of our country. In my judgment he ought to be honored with a statue in Washington, and I think it would be a graceful thing if the American Medical Association would start the movement. Its success would thus be assured.

I have no ulterior motive whatsoever in making this suggestion. I represent no sculptor or organization that might be benefited from it in the least. I simply write as one who is acquainted with the type back in Indiana.

I have suggested this in conversations with newspapers and magazine men, and they have taken to it. I shouldn't wonder if some of them would write something about it. What do you think of the idea, and do you think the American Medical Association would care to back it?

Knowing the general live policy of the A. M. A., I feel free to make this suggestion to you.

Thomas R. Shipp, Washington, D. C.

CITY AND COUNTY MEDICAL SOCIETY HOMES

The American Medical Association Bulletin in a recent number advocated the plan of building homes for their medical societies in cities and counties large enough to maintain such homes and states that the city of Toledo and Lucas County, Ohio, has just completed a society building.

The Toledo Academy of Medicine has 245 active members who pay $35.00 annual dues, 53 junior members who have been in practice less than one year and pay $15.00, and 10 "privileged" members pay $10.00 annually. There can be no doubt of the advantages of such a home. The building with two stories and a spacious basement, houses the library and the executive offices of the Academy, has an auditorium with a seating capacity of 600 and a smaller one of 75 or 100, a committee room, offices, etc.

Polk County Medical Society with a membership of 250 should take up the discussion of some plan to provide a home, at no distant day. The medical activities of our chief city are steadily increasing and a building housing all these activities centered at one place, is becoming a necessity. We all appreciate the fact that present conditions are becoming intolerable and that we are placed at a serious disadvantage in our medical work.

INCREASE OF RABIES

There were seven deaths from rabies caused by the bites of dogs in 1924 in Oklahoma, and this year to date there have been three. During January, 1925, there were fifty-three specimens sent to the state laboratory for examination for rabies, of which twenty-two were positive; in February, fifty-four with twenty-one positive; in March, eighty-three with twenty-six positive, and in April, seventy-nine with twenty-nine positive. During these four months, the state laboratory has sent out 539 Pasteur treatments, which cost the state about $10,000. Heretofore these treatments have been furnished free to all indigents, but their free distribution was discontinued May 1, owing to lack of appropriation by the legislature. The state department of health considers it necessary, therefore, for every municipality in the state to pass an ordinance requiring dogs to be immunized against rabies, and has had such an ordinance compiled for distribution to all towns.—Journal American Medical Association.

DEATH RATE FROM ALCOHOLISM

The Statistical Bulletin of the Metropolitan Insurance Company presents some statistics in relation to death from alcoholism.

In 1924—443 deaths are reported; in 1923 there were reported 436. The death rate per 100,000, however, declined from 3.0 in 1924 to 2.8 in 1923. In 1922, 293 deaths were recorded, with a rate of 2.1; in 1921, 122 deaths, with a rate of 0.9, while in 1920 there were only 77 deaths with a rate of 0.6 per 100,000.

During 1922, 1923, 1924, 1,172 deaths were recorded from alcoholism among industrial policyholders of which 1,160 occurred in the United States and 12 in Canada.

THE OWNERSHIP OF THE ROENTGENOGRAM

In relation to the ownership of the x-ray plate, while there has never been a decision by any court of last resort, it is generally held that the plate belongs to the x-ray laboratory, or the operator who makes the plate. This opinion is based on ethical grounds and has been accepted by resolutions adopted by x-ray societies.

The plate is made for the information of the physician or surgeon. There can be no doubt that the patient for whose benefit the plate is made and pays for it, has a right to know what the x-ray reveals, but should not be the owner who interprets it, for obvious reasons; the interpretation should be made by the physician who causes the plate to be made.

DIAMOND JUBILEE

The current issue of the Quincy Medical Bulletin is dedicated to the diamond jubilee celebration of the Illinois State Medical Society and the Adams County Society, both of which were founded in 1850, held in Quincy May 19-21. It contains the program in detail, the list of exhibitors, a descriptive directory of the city of Quincy, and a brief history of Adams County Medical Society and the state medical society, with short bibliographies and half tones of the early officials. There is also a hitherto unpublished paper on the cholera epidemic in 1849-1851 by the late Dr. Francis Drude, who was president of the Adams County Medical Society in 1881 and 1882, besides a list of members of the society and descriptive pages of hospitals and laboratories in Adams County.—Journal American Medical Association.

FLORENCE NIGHTINGALE MEMORIAL SERVICES

Elaborate services, attended by two thousand nurses, representing all nursing organizations of the city, was held May 17 at the Cathedral of St. John the Divine, New York, to commemorate the memory of Florence Nightingale, and also nurses who died during the war.

NEBRASKA STATE SOCIETY BUDGET FOR 1925

Journal Fund, per member	$ 1.75
Councilor District Meetings	360.00
Campaign Committee	500.00
Secretary-Treasurer's Office	800.00
Secretary-Treasurer's Salary	600.00
Librarian	25.00
Salary of Chairman of Defense Committee	600.00
Expense of Medico-Legal Defense Committee	200.00
Councilors' Expense	305.36
Official Reporter	150.00
Librarian, Miss Hillis	100.00

SOCIETY PROCEEDINGS

Audubon County Medical Society

The Audubon County Medical Society met in regular session Thursday evening at the office of Dr. R. F. Childs. The meeting was called to order by Dr. L. E. Jensen. Lunch was served at 6 o'clock at the Curtis cafe, after which the society repaired to the Memorial building, where a paper was read by Dr. Jack Trainor of Council Bluffs and discussed by members of the society.

Later Dr. Dean of Council Bluffs gave a demonstration of diseases of the eye with beautiful pictures of that organ and description of several diseases with which the eye is afflicted. We all enjoyed this meeting very much and those out of town doctors felt they had received enough benefit to pay for their trouble in getting here.—J. M. Fulton, Secretary.

Davis County Medical Society

The Davis County Medical Society held their annual picnic and program at the Bloomfield Country Club at 12 o'clock Thursday, June 25.

A picnic basket dinner was enjoyed at noon. In the afternoon an exceptionally interesting program was enjoyed by the doctors and their better halves.

One of the interesting addresses was that delivered by the dean of the Davis county bar, Dillon H. Payne, who spoke on Sanitary Conditions in South America. Other interesting addresses and papers were given by Dr. S. A. Spilman of Ottumwa, president of the Iowa State Medical Society, and Dr. W. E. Anthony of Ottumwa, who spoke on Cardiac Disorders.

Among the doctors present were the above named, Dr. Spilman, Jr., of Ottumwa, Dr. Replogle of Udell, Dr. Williams of Unionville, Dr. Finch of Pulaski, Dr. Newland of Drakesville, Dr. Parker of Floris, and all of the local physicians.

Lee County and Van Buren County Medical Societies

The Lee County and Van Buren County Medical Societies held a joint annual meeting at Anderson Park on the Des Moines river near Keosauqua on July 16.

The program consisted of papers; Some Diagnosis, by Dr. H. C. Young of Bloomfield; Phases of Hyperthyroidism, by Dr. E. T. Edgerly, Ottumwa; The Clinical Features and Management of Cardiac Failure, by Dr. Verne Graber, Iowa City; Conserving Middle Age, by Dr. E. E. Sherman, Keosauqua, and a paper by Dr. Thomas Bess of Fort Madison.

About one hundred doctors were present at this meeting.

Wayne County Medical Society

The Wayne County Medical Society held an interesting meeting at Seymour, Tuesday evening, June 30. Dinner was served in the basement of the M. E. church at 7:30, after which the evening's program was continued in the Masonic Temple building.

Talks on the following subjects were included in the program:

A practical talk on the Management of Diabetes, by Dr. Edwin B. Winnett, Des Moines.

A practical talk on The Management of Nephritis, by Dr. Daniel J. Glomset, Des Moines.

Discussion of Diabetes was opened by Dr. J. S. Coontz, Garden Grove.

Discussion of Nephritis was opened by Dr. B. L. Eiker of Leon.

Dr. W. G. Walker, Dr. G. H. Sollenbarger and Dr. B. S. Walker of Corydon attended the meeting.

Twin Lakes District Medical Society

The doctors of the Twin Lakes District Medical Society held a most successful diagnostic clinic at Brownlee's Resort on the west side of the North Twin Lake July 16, beginning at 9:50, with the call to order by President W. J. Findley. Over 100 doctors from all over Iowa registered for the sessions, which were held in the large pavilion of the resort.

In the forenoon Harold Gifford of the University of Nebraska, Omaha, discussed diseases of the eye, and Samuel T. Orton, chief of the psychopathic hospital, University of Iowa, had work on psychopathic states.

At noon a picnic dinner was served at the cottage of Dr. A. C. Norton of Rockwell City at the Country Club grounds. The visiting physicians' families were welcomed by a reception committee composed of the wives of Calhoun county physicians with Dr. Eleanor Hutchinson as chairman and furnished entertainment of golf, bathing and boating.

At 1:30 the clinic sessions were resumed. Philip C. Jeans, head of the Children's hospital, University of Iowa, had charge of the work on children's diseases; Charles S. McVicar of the Mayo Clinic, Rochester, the work on internal medicine; Jennings

C. Litzenberg, University of Minnesota, Minneapolis, the work on obstetrics and gynecology; and Edward A. Oliver, Rush Medical College, Chicago, the work on diseases of the skin. Merril M. Myers, president of the Iowa Heart Society, Des Moines, gave a talk on the work of that organization.

INTER-STATE POST GRADUATE ASSEMBLY OF AMERICA

St. Paul, Minnesota
October 12, 13, 14, 15 and 16, 1925

General headquarters for all scientific sessions and exhibits: St. Paul Auditorium.

Hotel headquarters: St. Paul Hotel.

PROGRAM

First Day
Monday, October 12
7 a. m.

1. Diagnostic Clinic (Medical). Diseases of the blood or heart cases. Dr. Charles S. Williamson, Prof. of Medicine, University of Illinois College of Medicine, Chicago, Illinois.

2. Diagnostic Clinic (Surgical). Dr. William S. Baer, Associate Prof. of Orthopedic Surgery, Johns Hopkins University Medical Dept., Baltimore, Maryland.

3. Diagnostic Clinic (Oto-laryngology). Dr. Hanau W. Loeb, Dean and Prof. of Ear, Nose and Throat Diseases, St. Louis University School of Medicine, St. Louis, Missouri.

Intermission—Review Exhibits

4. Diagnostic Clinic (Surgical). Gall bladder cases. Dr. E. Starr Judd, Prof. of Surgery, Minnesota Graduate School of Medicine, Mayo Foundation, Rochester, Minnesota.

5. Diagnostic Clinic (Surgical).

(a) Non-specific lung suppuration, such as bronchiectasis or bronchectatic abscess of the lung in combination with a patient suffering from pulmonary tuberculosis.

(b) Cancer of the esophagus, breast, thromboangitis obliterans, cholecystitis with or without stones. Dr. Willy Meyer, Prof. of Surgery, New York Post-Graduate School of Medicine, New York, New York.

Afternoon Session
1 p. m.

6. Diagnostic Clinic (Medical). Arterial Hypertension, diseases of the heart and kidney. Dr. Elsworth S. Smith, Prof. of Clinical Medicine, Washington University School of Medicine, St. Louis, Missouri.

7. Diagnostic Clinic (Surgical). General surgical cases. Dr. Arthur M. Shipley, Prof. of Surgery, University of Maryland, School of Medicine, Baltimore, Maryland.

8. Diagnostic Clinic (Surgical). Dr. George J. Heuer, Prof. of Surgery, University of Cincinnati, College of Medicine, Cincinnati, Ohio.

8. Diagnostic Clinic (Medical). Dr. William J. Kerr, Associate Prof. of Medicine, University of California, San Francisco, California.

9. "Chronic Infections of the Skull". Dr. Charles B. Lyman, Prof. of Clinical Surgery, University of Colorado, School of Medicine, Denver, Colorado.

10. "The Management of the Ordinary Anemias". Dr. Charles S. Williamson, Prof. of Medicine, University of Illinois College of Medicine, Chicago, Illinois.

Intermission—Review Exhibits

11. Subject later. Dr. William S. Baer, Associate Prof. of Orthopedic Surgery, Johns Hopkins University Medical Department, Baltimore, Maryland.

12. "Bone Sarcoma" (slides). Dr. C. J. MacGuire, Jr., New York, New York.

13. "The Anatomic Relation of the Optic Nerve to the Para-Nasal Sinuses". (Slides.) Dr. Hanau W. Loeb, Dean and Prof. of Ear, Nose and Throat Diseases, St. Louis University School of Medicine, St. Louis, Missouri.

Evening Session
7 p. m.

14. "Pernicious Anemia". Dr. Edward W. Montgomery, Prof. of Medicine and Clinical Medicine, University of Manitoba Faculty of Medicine, Winnipeg, Canada.

15. "The Treatment of Cicatricial Contractures of the Neck". Dr. Charles N. Dowd, Prof. of Clinical Surgery, Columbia University School of Medicine, New York, New York.

16. "The Diagnosis and Treatment of Heart Disease". Dr. William J. Kerr, Associate Prof. of Medicine, University of California, San Francisco, California.

17. "Results of Operations for Chronic Cholecystitis". Dr. E. Starr Judd, Prof. of Surgery, Minnesota Graduate School of Medicine, Mayo Foundation, Rochester, Minnesota.

Intermission—Review Exhibits

18. "Examination of Para-Nasal Sinuses with Clinical Demonstrations and Radiographs". Dr. Cornelius G. Coakley, Prof. of Laryngology and Otology, Columbia University School of Medicine, New York, New York.

19. "Newer Methods of Preliminary Medication and General Anesthesia" (slides). Dr. James T. Gwathmey, New York, New York.

20. "The Preparation and Use of Thick Skin Grafts" (slides). Dr. Harry P. Ritchie, Associate Prof. of Surgery, University of Minnesota Graduate School of Medicine, St. Paul, Minnesota.

Second Day
Tuesday, October 13
7 a. m.

1. Diagnostic Clinic (Laryngology). Dr. Cornelius G. Coakley, Prof. of Laryngology and Otology, Columbia University School of Medicine, New York, New York.

2. Diagnostic Clinic (Surgical). Neck Cases, es-

DR. ADDISON C. PAGE
Des Moines
President Inter-State Post Graduate Assembly of America

pecially T. B., bronchial cysts or fistulae thyroglossal cysts, or fistulae hygromas. Dr. Charles N. Dowd, Prof. of Clinical Surgery, Columbia University School of Medicine, New York, New York.

3. Diagnostic Clinic (Medical). Bone, cardiovascular, blood or gastrointestinal cases. Dr. Joseph Sailer, Prof. of Clinical Medicine, University of Pennsylvania, School of Medicine, Philadelphia, Pennsylvania.

Intermission—Review Exhibits

4. Diagnostic Clinic (Surgical). Cranial and general surgical cases. Dr. Samuel Clark Harvey, Associate Prof. of Surgery, Yale University School of Medicine, New Haven, Connecticut.

5. Diagnostic Clinic (Surgical). Upper abdominal cases. Dr. John B. Deaver, Emeritus Prof. of Surgery, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania.

Afternoon Session
1 p. m.

6. Diagnostic Clinic (Diabetic). Dr. Rollin T. Woodyatt, Clinical Prof. of Medicine, Rush Medical College, Chicago, Illinois.

7. Diagnostic Clinic (Surgical). Surgery of the face and various parts of the body. Dr. Allen B. Kanavel, Prof. of Surgery, Northwestern University School of Medicine, Chicago, Illinois.

8. Diagnostic Clinic (Medical). Heart and lung cases. Dr. Edward J. Beardsley, Associate Prof. of Medicine, Jefferson Medical College, Philadelphia, Pennsylvania.

9. "The Role of Operative Surgery in the Treatment of Pulmonary Tuberculosis" (slides). Dr. Willy Meyer, Prof. of Surgery, New York Post-Graduate School of Medicine, New York, New York.

Intermission—Review Exhibits

10. "Hypertension". Dr. James H. Means, Prof. of Clinical Medicine, Harvard University School of Medicine, Boston, Massachusetts.

11. "Observations on the Gall-Bladder". Dr. Frank Boland, Prof. of Surgery, Emory University School of Medicine, Atlanta, Georgia.

12. "Thoracic Suppurations". Dr. Arthur M. Shipley, Prof. of Surgery, University of Maryland, School of Medicine, Baltimore, Maryland.

13. "Pyloric Stenosis". Dr. E. E. Francis, Prof.

of Surgery, University of Tennessee, School of Medicine, Memphis, Tennessee.

Evening Session
7 p. m.

14. "The Treatment of Cardiac Syphilis". Dr. Harlow Brooks, Prof. of Clinical Medicine, University and Bellevue Hospital Medical College, New York, N. Y.

15. "Plastic Surgery". Dr. Allen B. Kanavel, Prof. of Surgery, Northwestern University School of Medicine, Chicago, Illinois.

16. "Heliotherapy as an Adjunct in the Treatment of Chronic Surgical Conditions". Dr. George J. Heuer, Prof. of Surgery, University of Cincinnati College of Medicine, Cincinnati, Ohio.

17. "Further Studies Concerning the Injurious Effects of Arterial Hypertension on the Cardio-Vascular Renal Apparatus". Dr. Elsworth S. Smith, Prof. of Clinical Medicine, Washington University School of Medicine, St. Louis, Missouri.

Intermission—Review Exhibits

18. "The Relation of the Human Constitution to Disease". Dr. George Draper, New York, New York.

19. Subject later. Dr. Milton J. Rosenau, Prof. of Preventive Medicine and Hygiene, Harvard University School of Medicine, Brookline, Boston, Massachusetts.

20. "Drainage as a Factor in Renal Disease" (slides). Dr. Guy L. Hunner, Associate Prof. of Gynecology, Johns Hopkins University School of Medicine, Baltimore, Maryland.

Third Day
Wednesday, October 14
7 a. m.

1. Diagnostic Clinic (Medical). Cases of cardiac syphilis, cardiac decompensation, lung tumor or abscess, acute rheumatic fever, angina pectoris, chronic nephritis. Dr. Harlow Brooks, Prof. of Clinical Medicine, University and Bellevue Hospital Medical College, New York, New York.

2. Diagnostic Clinic (Gynecology). Dr. Guy L. Hunner, Associate Prof. of Gynecology, Johns Hopkins University School of Medicine, Baltimore, Maryland.

3. Diagnostic Clinic (Psychiatry). Dr. Thomas W. Salmon, Prof. of Psychiatry, Columbia University School of Medicine, New York, New York.

Intermission—Review Exhibits

4. Diagnostic Clinic (Medical). Hypertensive diseases. Dr. James H. Means, Prof. of Clinical Medicine, Harvard University School of Medicine, Boston, Massachusetts.

5. Diagnostic Clinic (Surgical). Cases of rheumatism or rheumatoid arthritis. Dr. Charles H. Mayo, Mayo Clinic, Rochester, Minnesota.

Afternoon Session
1 p. m.

6. Pathological Conference supervised by Dr. H. E. Robertson, Prof. of Pathology, University of Minnesota (Mayo Foundation), Rochester, Minnesota.

7. Diagnostic Clinic (Medical). Cardiovascular Diseases or diseases of the blood. Dr. Maurice C. Pincoffs, Prof. of Medicine, University of Maryland School of Medicine, Baltimore, Maryland.

8. "Familiar Problems in Gynecology". Dr. William P. Graves, Prof. of Gynecology, Harvard University School of Medicine, Boston, Massachusetts.

9. "Diphtheria and Its After Effects". Dr. H. B. Cushing, Clinical Prof. of Pediatrics, McGill University Faculty of Medicine, Montreal, Canada.

Intermission—Review Exhibits

10. "Duodenal Ulcer Versus Cholecystitis". Dr. John B. Deaver, Emeritus Prof. of Surgery, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania.

11. "Some Recent Revelations of the Denervated Heart". Dr. Walter B. Cannon, Prof. of Physiology, Harvard University School of Medicine, Boston, Massachusetts.

12. "The Significance of Arterial Hypertension". Dr. Wilder Tileston, Clinical Prof. of Medicine, Yale University School of Medicine, New Haven, Connecticut.

13. "Carcinoma of the Rectum". Dr. Alfred T. Bazin, Prof. of Surgery, McGill University Faculty of Medicine, Montreal, Canada.

Evening Session
7 p. m.

14. "The Diagnosis of Abdominal Tumors" (slides). Dr. Joseph Sailer, Prof. of Clinical Medicine, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania.

15. "The Liver and its Function in Relation to its Surgical Diseases". Dr. Samuel Clark Harvey, Associate Prof. of Surgery, Yale University School of Medicine, New Haven, Connecticut.

16. "Renal and Ureteral Stones". Dr. Edward L. Keyes, Prof. of Clinical Surgery, Department of Urology, Cornell University School of Medicine, New York, New York.

17. "Post-Graduate Instruction in our own Offices". Dr. Edward J. Beardsley, Associate Prof. of Medicine, Jefferson Medical College, Philadelphia, Pennsylvania.

Intermission—Review Exhibits

18. "Osteotomy of the Os Calcis for extreme cases of Flat Feet" (slides). Dr. John P. Lord, Prof. of Orthopedic Surgery, University of Nebraska School of Medicine, Omaha, Nebraska.

19. "Treatment and Prognosis in Pericarditis". Dr. Maurice C. Pincoffs, Prof. of Medicine, University of Maryland School of Medicine, Baltimore, Maryland.

20. "Modern Medical Education—Progress or Retrogression". Dr. Eugene E. Murphey, Prof. of Medicine, University of Georgia School of Medicine, Augusta, Georgia.

President's Reception and Entertainment.

Fourth Day
Thursday, October 15
7 a. m.

1. Diagnostic Clinic (Surgical). Renal and ureteral stone cases. Dr. Edward L. Keyes, Prof. of Clinical Surgery, Department of Urology, Cornell University School of Medicine, New York, New York.

2. Diagnostic Clinic (Pediatric). Rheumatic fever and after effects in children of school age. Dr. H. B. Cushing, Clinical Prof. of Pediatrics, McGill University Faculty of Medicine, Montreal, Canada.

3. Diagnostic Clinic (Surgical). Acute abdominal lesion cases. Dr. Alfred T. Bazin, Prof. of Surgery, McGill University Faculty of Medicine, Montreal, Canada.

Intermission—Review Exhibits

4. Diagnostic Clinic (Surgical). Dr. Arthur Dean Bevan, Prof. of Surgery Rush Medical College, Chicago, Illinois.

5. "The Five Most Important Obstetrical Mistakes". Dr. Joseph B. DeLee, Prof. of Obstetrics, Northwestern University School of Medicine, Chicago, Illinois.

Afternoon Session
1 p. m.

6. Diagnostic Clinic (Medical). Abdominal Discases, especially of the liver. Dr. Wilder Tileston, Clinical Prof. of Medicine, Yale University School of Medicine, New Haven, Connecticut.

7. Diagnostic Clinic (Surgical). Management of cases of prostatic obstruction. Dr. Hugh Cabot, Prof. of Surgery, University of Michigan School of Medicine, Ann Arbor, Michigan.

8. "Pneumococcus Peritonitis". Dr. Charles L. Gibson, Prof. of Surgery, Cornell University School of Medicine, New York, New York.

9. Subject later. Rt. Hon. Lord Dawson of Penn. G. C. V. O.; C. B., London, England.

10. "Focal Infection". Dr. Charles H. Mayo, Mayo Clinic, Rochester, Minnesota.

Intermission—Review Exhibits

11. "The Aetiology of Anaemia and its Importance in Diagnosis and Treatment". Dr. Duncan A. L. Graham, Prof. of Medicine, University of Toronto, Faculty of Medicine, Toronto, Canada.

12. "A Re-Study of Operations for Radical Cure of Hernia, including Inguinal, Femoral, Umbilical, Post-operative hernias associated with undescended Testis and Diaphragmatic Hernia". Dr. Arthur Dean Bevan, Prof. of Surgery, Rush Medical College, Chicago, Illinois.

13. Subject later. Mr. Philip Franklin, F.R.C.S., London, England.

14. Subject later. Dr. Thomas W. Salmon, Prof. of Psychiatry, Columbia University School of Medicine, New York, New York.

Evening Session
7 p. m.

15. "The Relative Roles of Surgery and of Radiation in the Treatment of Tumors of the Breast".

(a) Dr. F. E. Bunts, Prof. of Principals of Surgery and Clinical Surgery, Western Reserve University School of Medicine, Cleveland, Ohio.

(b) Dr. U. V. Portmann, Cleveland Clinic, Cleveland, Ohio.

16. "Joint Ankylosis—Surgical Measures for its Prevention and Relief". Dr. Nathaniel Allison, Prof. of Orthopedic Surgery, Harvard University School of Medicine, Boston, Massachusetts.

17. "The Physiology of the Female Pelvic Floor". Dr. Ernest F. Tucker, Prof. of Gynecology, University of Oregon School of Medicine, Portland, Oregon.

18. "Syphilis and its Relation to Eye Diseases." (Dr. Joseph Schneider's Foundation address.) Dr. William H. Wilder, Prof. of Ophthalmology, Rush Medical College, Chicago, Illinois.

Intermission—Review Exhibits

19. "Diagnosis of Diseases of the Rectum". Dr. L. J. Austin, Prof. of Surgery, Queen's University Faculty of Medicine, Kingston, Canada.

20. "The Use of Septal Flaps in the Treatment of Unilateral Clefts of the Hard Palate". Dr. James E. Thompson, Prof. of Surgery, University of Texas School of Medicine, Galveston, Texas.

21. Subject later. Dr. Arthur A. Law, Associate Prof. of Surgery, University of Minnesota Graduate School of Medicine, Minneapolis, Minnesota.

Fifth Day
Friday, October 16
7 a. m.

1. Diagnostic Clinic (Surgical). Abdominal and gastrointestinal cases. Dr. Charles L. Gibson, Prof. of Surgery, Cornell University School of Medicine, New York, New York.

2. Diagnostic Clinic (Surgical). Joint involvement, particularly cases of suspected tuberculosis of either the knee, hip or other joints. Dr. Nathaniel Allison, Prof. of Orthopedic Surgery, Harvard University School of Medicine, Boston, Massachusetts.

3. Diagnostic Clinic (Medical). Cases of cardiac lesions or signs of interference with cardiac function. Dr. J. C. Meakins, Prof. of Medicine and Director of the Department, McGill University Faculty of Medicine, Montreal, Canada.

Intermission—Review Exhibits

4. Diagnostic Clinic (Medical). Rt. Hon. Lord Dawson of Penn, G. C. V. O.; C. B., London, England.

5. Diagnostic Clinic (Surgical). Dr. George W. Crile, Prof. of Surgery, Western Reserve University School of Medicine, Cleveland, Ohio.

6. Diagnostic Clinic (Medical). Cases of anemia and mediastinal tumour. Dr. Duncan A. L. Graham, Prof. of Medicine, University of Toronto Faculty of Medicine, Toronto, Canada.

Afternoon Session
1 p. m.

7. Diagnostic Clinic (Surgical). Cases of anemia. Dr. William J. Mayo, Mayo Clinic, Rochester, Minnesota.

8. Diagnostic Clinic (Surgical). Sir William Arbuthnot Lane, Bt., London, England.

9. Pathological Conference supervised by Dr. H. E. Robertson, Prof. of Pathology, University of Minnesota (Mayo Foundation), Rochester, Minnesota.

10. "Circulatory Failure in Heart Disease". Dr. J. C. Meakins, Prof. of Medicine and Director of the Department, McGill University Faculty of Medicine, Montreal, Canada.

Intermission

11. "The Cause and Prevention of So-called Catheter Cystitis and Retention of the Urine". Dr. Hugh Cabot, Dean and Prof. of Surgery, University of Michigan School of Medicine, Ann Arbor, Michigan.

12. "The Treatment of Gastric Ulcer".

(a) "Indications for and the Technique of Dissection of the Stomach for Ulcer". Dr. George W. Crile, Prof. of Surgery, Western Reserve University School of Medicine, Cleveland, Ohio.

(b) "The Medical Treatment of Peptic Ulcer". Dr. John Phillips, Assistant Prof. of Therapeutics, Western Reserve University School of Medicine, Cleveland, Ohio.

(c) "The Patient Versus His Lesion". Dr George W. Crile, Cleveland, Ohio.

13. "The Association of Lesions of the Bone Marrow, the Liver and the Spleen in Certain Blood Dyscrasias". Dr. William J. Mayo, Mayo Clinic, Rochester, Minnesota.

Foreign Guests

Lord Dawson of Penn, G. C. V. O.; C. B., London, England.

Sir William Arbuthnot Lane, London, England.

Mr. William Blair Bell, F.R.C.S., Prof. of Obstetrics and Gynecology, University of Liverpool Medical Department, Liverpool, England.

Professor Vittorio Putti, Bologna, Italy.

Mr. Philip Franklin, F.R.C.S., London, England.

Dr. H. L. McKisack, Consulting physician, Royal Victoria Hospital, Belfast, Ireland.

Dr. W. H. Parkes, C.M.G., C.B.E., Auckland, New Zealand.

Banquet

Addresses by distinguished citizens from America and foreign countries.

MEDICAL SOCIETY OF THE MISSOURI VALLEY AT ST. JOSEPH

Plans are rapidly maturing for the annual meeting of the Medical Society of the Missouri Valley, in St. Joseph, September 30-October 1 and 2, 1925, under the presidency of Dr. J. W. Martin, of Des Moines, Iowa. The St. Joseph Clinical Society will hold a two-days session at the various hospitals on Monday and Tuesday preceding the meeting. The sessions will be held in the Crystal room of Hotel Robidoux and the exhibits will occupy both the office lobby and the mezzanine balcony.

Diagnostic clinics will occupy the morning hours, while a series of symposia, cintributed by the various state universities, will fill the afternoons. The annual dinner will be given at the Robidoux on Thursday evening when speakers of national prominence will be present. A "get together" smoker will be held on Wednesday evening, when the members will be the guests of the Buchanan County Medical Society and the St. Joseph Clinical Society.

Preliminary Program for Missouri Valley Medical Society, September 30, October 1 and 2

UNIVERSITY OF NEBRASKA, MEDICAL COLLEGE

1. "Complications of Brain Surgery"—Dr. J. J. Keegan, Dean of University College of Medicine.

2. "The Technique of Cervical Sympathectomy" (Illustrated)—Dr. John Summers, Professor of Surgery.

3. (Title not yet received)—Dr. W. O. Bridges.

4. "Study of a Case of Membranous Bone, with Autopsy" (Slide)—Dr. A. D. Dunn, Professor of Experimental Medicine.

5. "Cancer"—By Dr. H. E. Eggers, Professor of Pathology.

KANSAS UNIVERSITY, MEDICAL DEPARTMENT

1. "Relation of Food Infection to Myocardial Degeneration"—Dr. P. T. Bohan, Professor of Clinical Medicine.

2. "The Present Status of Hypertension"—Dr. R. H. Major, Professor of Medicine.

3. "Kidney Function Test"—Dr. N. F. Ockerblad, Assistant Professor of Genito-Urinary Diseases.

UNIVERSITY OF MISSOURI, COLUMBIA

Symposiums on Internal Secretions

1. "Oxygen Supply and Metabolic Level"—Chas. W. Greene, Ph.D., Columbia, Mo.

2. "Factors Affecting the Action of the Pancreatic Hormone"—Max. M. Ellis, Ph.D., Columbia, Mo.

3. "Internal Secretion of Ovaries"—Edgar Allen, Ph.D., Columbia, Mo.

4. "Thyroid and Metabolic Perversions"—Dr. Walter M. Boothby, Mayo Foundation, Rochester, Minn.

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1. "The Periodic Medical Meeting"—Dr. E. H. Skinner, Kansas City.

ATTENDING STAFF, WASHINGTON BOULEVARD HOSPITAL, CHICAGO, ILL.

1. "Urological Findings in 100 Cases of Obscure Abdominal and Pelvic Pain"—Dr. V. J. O'Connor.

2. "X-Ray Interpretations"—Dr. A. R. Metz.

3. "Electro-cardiograph Interpretations"—Dr. S. R. Slaymaker.

4. "Fracture of Femurs With Special Reference to Neck"—Dr. H. F. Lounsbury.

5. "Angina Pectoris"—Dr. Robt. H. Babcock.

DES MOINES, IOWA

1. "Heredity"—Dr. Julius S. Weingart.

2. "Group of Papers on Anesthesia"—Dr. John Russell and Dr. John Connell.

3. "Goitre Clinic"—Dr. Charles Ryan.
4. "Clinic on Dermatology"—Dr. J. F. Auner.
5. "(Not received)—Dr. W. O. King.

SYMPOSIUM ON FRACTURES

1. "Conservative Treatment of Fractures of Long Bones in Children"—Dr. Thos. Orr, Kansas City.
2. "Fracture of the Carpal Bones"—Dr. P. A. Bendixen, Davenport.
3. "Fracture of Elbow"—Dr. J. A. Weinberg, Omaha, Neb.
4. "General Discussion of the Fracture Problem"—Dr. D. Z. Dunett, Baltimore, Md.

Mornings—Dry Clinics by St. Joseph Clinicians.
Afternoons—Symposia.

Complete program will be issued early next month. A copy may be obtained by addressing the secretary, Dr. Chas. Wood Fassett, 115 East 31st street, Kansas City, Mo.

PHYSIOTHERAPEUTIC CONVENTION

Physicians are invited to attend the Fourth Annual Physiotherapeutic Convention to be held at the Drake Hotel, Chicago, October 12 to 16, 1925. Papers will be read and discussed by leading physicians of national and international reputation in this field. For particulars see page program in this issue. Demonstrations and exhibits of the latest apparatus and methods employed in physiotherapy will be given. Physicians who are in good standing with their state medical association and can give evidence of that fact are invited. Reservations may be made and programs obtained by addressing the Educational Department of H. G. Fischer & Company, 2335 Wabansia Ave., Chicago, Illinois.

THE TREATMENT OF SYPHILIS

A working monograph on the treatment of syphilis has been prepared for the medical profession by the Dermatological Research Laboratories which will be sent with the compliments of the publishers to any physician requesting a copy. This booklet discusses the following in separate chapters: Introduction, syphilis today. Arsphenamine vs. neoarsphenamine. Sulpharsphenamine. Bismuth in syphilis. Mixed treatment. Methods of treatment: The primary stage, the secondary stage, the tertiary stage, neurosyphilis. Intraspinal injections. Technic of preparing: arsphenamine, neoarsphenamine, sulpharsphenamine, bismuth. Possible reactions. Sodium Thiosulphate. References. Requests for this monograph should be addressed either to The Abbott Laboratories, Chicago, or the Dermatological Research Laboratories, Philadelphia.

NEW ADVERTISER

Dr. E. A. Nash, the only doctor in Iowa to publish poems, has an interesting announcement in the Classified Columns.

MEDICAL NEWS NOTES

The Royal Spanish Academy of Medicine recently conferred a degree on Doctor C. H. Mayo of Rochester at a meeting in Madrid.

According to the Journal of the Indiana State Medical Association for June, the legislature of Indiana has made it possible to write insurance policies in that state for two thousand five hundred dollars or less without a medical examination. The editor observes as follows:

"We note that some insurance companies are taking advantage of this law and agents are industriously at work attempting to increase the amount of insurance writen by securing applications for insurance from a large number of people many of whom undoubtedly are poor risks. It does not require one of very astute observation to note that the poor risks are the ones who will jump at the chance to secure insurance, and the expense of carrying those risks must be borne by the better risks. Therefore, the poor risks are the ones who get practically all of the benefit, and the good risks are the ones who are 'stung'."

HOSPITAL NOTES

St. Joseph's Mercy Hospital, Webster City, is to receive a gift of some $30,000 from the estate of C. J. Pitcher who recently died.

PERSONAL NOTES

Dr. Jennie Ghrist and Mrs. Orrie Ghrist have gone to Chicago, where they were joined by Dr. Orrie Ghrist who has been in Rochester taking up special work. They will attend the wedding of Dr. David Ghrist to Miss Winifred Brown of Chicago. Dr. and Mrs. Ghrist will stop in Ames and Nevada on their return to their home in Glendale, Cal., July 1. Following their marriage Dr. David Ghrist and his bride will motor to California, where he will serve a year's interneship in the Los Angeles county hospital. after which they will go abroad for a year before permanently locating.

Dr. C. Wirth of Davenport has left for New York, where he will take the steamship Majestic on July 3 for Cherbourg, France. After spending a few days in Paris, he expects to go to Switzerland to visit the birthplace of his parents, near St. Gall. He will visit at the homes of his three cousins who live in that vicinity. Before returning to this country, Dr. Wirth also expects to spend some time at the University of Basel in Switzerland, where his father, the late J. C. Wirth, studied medicine nearly a century ago. This is Dr. Wirth's first trip abroad. He will return to Davenport to resume his practice about September 1.

THE STANDARD CHEMICAL COMPANY IN NEW QUARTERS

New Pharmaceutical Building Just Completed

The new home of The Standard Chemical Company, shown on page 000, under construction since early spring, has just been completed, and the large stock is being rapidly assigned and placed on the shelves.

The Standard Chemical Company is not a new firm. From a small beginning, it has grown steadily until it has become one of the leading manufacturing and commercial institutions of the Middle West, doing a wholesale business that aggregates upwards to a half million dollars yearly. A complete and well selected line of medical specialities, considered to be among the best on the market, is manufactured by the Company. In addition to their specialty lines, they manufacture a complete assortment of pharmaceutical items comprising liquids, ointments, tablets and other medicinal products now in general use.

Although the business is primarily devoted to the manufacture of pharmaceutical products, a complete line of surgical instruments and allied supplies for physicians and hospitals is carried. The Standard Chemical Company is, therefore, a medical depot from which physicians or hospitals can order everything they need thus saving time and transportation costs which are rapidly becoming important factors in modern merchandising.

The physician may buy or secure for his patient, everything in the way of emergency equipment and sick room supplies, ranging from hospital furniture to fever thermometers, as well as many other articles which add to the comfort of the sick and the convenience of the doctor.

The Standard Chemical Company also maintain a special department devoted exclusively to the selection and fitting of surgical appliances. Those in charge of the fittings are specially trained for this work. All fittings are made subject to the approval of the physician.

Quality has always been the first consideration of The Standard Chemical Company and in their new home, with its increased facilities for manufacture and improvement of service, their business will, no doubt, show a rapid increase.

PERSONAL NOTES

Dr. Herman Goodman of New York City has moved his office to 18 East 89th street.

Doctor E. C. Sage has entered into partnership with Doctor C. H. Morse of Eagle Grove. Doctor Sage is a graduate of the College of Medicine, Iowa State University.

Doctor R. A. Culbertson, a graduate of the Medical School, Iowa State University, has located in DeWitt.

Dr. Charles S. Hickman and family, of Centerville, have returned from a two months auto trip through the west, traveling nine thousand miles and visiting six national parks.

MARRIED

Doctor Clarence Lu Verne Smith of Iowa City and Miss Marion MacKenzie of Muscatine were married at Muscatine July 11, 1925.

Doctor Lloyd Peckenschneider of Davenport and Miss Helen Marie Fellner, also of Davenport, were married June 30, 1925. Doctor Pechenschneider is a graduate of the Medical School, Iowa University.

OBITUARY

Doctor Thomas J. Andre died at his home in Schaller, July 1, 1925, at the age of 68 years, of heart disease.

Dr. Andre was born near Hanover, Columbiana County, Ohio, May 10, 1857, and graduated from Rush Medical College, Chicago, in 1882. Soon after graduation he came to Schaller as the first physician to locate in this community.

The Andre family came to Iowa in 1865 and located on a farm in Scott County, where Thomas attended the common schools and later the Iowa State College at Ames.

During his student days at Ames the writer came to know him and after Doctor Andre had entered upon the practice of medicine to follow his work as a physician and as a member of various medical societies. Dr. Andre was a devoted physician, and as he was the first physician to practice in Schaller had his full share of the hardships of a pioneer doctor. He is succeeded in practice by his son, Dr. Thomas J. Andre.

On December 28, 1884, Doctor Andre married Miss Cora Petit of Storm Lake. To them were born three children, who together with Mrs. Andre survive him.

Dr. Thomas G. Taylor of Green Mountain died at the Deaconess Hospital, Marshalltown, of cancer, July 13, 1925.

Dr. Taylor was born in Pawpaw, Illinois, September 9, 1862. Practiced in Waterlo twenty-five years before coming to Green Mountain a few years ago

Dr. J. R. Buffington, formerly of Derby, died at his home in Nelson, Nebraska, June 15, 1925, at the age of 85 years.

Dr. Buffington was born in Columbus City, January 5, 1840. He began the study of medicine under Dr. J. M. Robertson of Columbus City. At the breaking out of the Civil War, he enlisted in Company F, Twenty-fifth Iowa Infantry, and served through the war. He was discharged on June 7, 1865, and resumed the study of medicine in the office of Dr. S. H. Stutsman of Derby and graduated from the College of Physicians and Surgeons, Keokuk, in 1876. Dr. Buffington practiced in Derby until March, 1880, when he moved to Nebraska.

Dr. T. B. Kent, who had been a practicing physician in Marion for about five years, died at the family residence, 1027 Thirteenth street, following an extended illness.

Dr. Kent was born at Plaino, Illinois, June 3, 1849, and was married in Cedar county, December 27, 1887, to Mary Cassie. They lived many years at Center Junction, Jones county, Iowa, where Dr. Kent practiced before coming to Marion. His wife died twenty-five years ago.

Dr. Ellis E. Mathews died suddenly at his home in Des Moines, May 18, 1925.

Dr. Mathews was born in Ohio, graduated from the State University and practiced medicine a short time in that state. Dr. Mathews came to Des Moines in 1911, where he has practiced since that time.

As death takes one after another of the men who have contributed to the progress of medicine, we cannot do less than speak of their work in the brief space allotted them in the plan of life.

Dr. Thomas J. Watkins is one of the men who should be remembered for his valuable work in gynecology. Dr. Watkins was born near Utica, New York, in 1863, graduated in medicine from Bellevue Hospital Medical College and located in Chicago in 1889. He became a member of the Northwestern University Medical School and at the time of his death, April 1, 1925, was chief of the department of gynecology.

In 1896 Dr. Watkins was elected a member of the American Gynecological Society, and in 1915 its president. He was a member of the editorial board of Surgery, Gynecology and Obstetrics and also of the American Journal of Obstetrics and Gynecology. He was a frequent contributor to the literature of his special branch of medicine. Dr. Watkins was best known as the originator of the transposition operation, known as the Watkins-Wertheim operation, for cystocele and uterine prolapse.

BOOK REVIEWS

THE SURGICAL CLINICS OF NORTH AMERICA

Volume IV, No. 5. 265 Pages, With 112 Illustrations. Price Per Clinic Year (Feb., 1924, to Dec., 1924), Paper $12.00; Cloth $16.00, Net. W. B. Saunders Company.

This number (October, 1924) is a Portland-Seattle production. We have traveled with Saunders Company from one surgical clinic to another until at last we have reached Portland and Seattle.

At the Virginia Mason Hospital at Seattle we met a full clinic. The first case is a Carcinoma of the Lower Lip, by Dr. J. Tate Mason, which is treated in a most thorough surgical manner. Followed by four cases of Exophthalmic Goiter with a presentation of some Interesting Medical Phases, by Dr. John M. Blackford. This form of presentation seems the ideal way of considering a clinic of this character.

At this hospital is a Urological Clinic, by Dr. Alexander H. Peacock. A prostatectomy in a man of advanced years (85). A case of Hydropyelonephrosis. A case of Adenofibroma of the Prostate. A case of Diverticulum of the Urethra Containing a Large Calculus.

At the University of Oregon Medical School we have an interesting discussion of Atypical Toxic Goiter, by Dr. J. Earl Else.

At the Swedish Hospital, Seattle, Dr. Everett O. Jones presents a case of Persistent Thyroglossal Duct. Dr. A. E. Rockey at the Good Samaritan Hospital, Portland, presents cases of Acute Appendicitis, which he considers in considerable detail.

At the Swedish Hospital, Seattle, Dr. Otis Floyd Lamson considers Adhesions of the Upper Abdomen, also Chronic Perforating Duodenal Ulcer. Drs. W. B. Holden and K. P. Moran present a rather extensive and interesting clinic. The Physics of Some of the Deformities of Rickets is an especially interesting clinic by Dr. Casper W. Sharples, of the Children's Orthopedic Hospital, Seattle, and Dr. George W. Swift, at the same hospital, considers Variations in Cerebroventricular Studies. Other interesting clinics were presented.

The particular merit of this western clinic is, that the clinical material presented is of the kind to interest the general surgeon.

MANUAL OF PSYCHIATRY

For the Medical Student and General Practitioner. By Paul E. Bowers, M. D., Examiner in Lunacy, State of California; Lecturer in Neuropsychiatry, Post-Graduate Medical School of the University of California, Los Angeles. Octavo Volume of 365 Pages. Philadelphia and London: W. B. Saunders Company, 1924. Cloth, $3.50 net. W. B. Saunders Company, Philadelphia, London.

The purpose of the author in writing this book is stated as being that of providing a manual of reference to which the medical man in general practice may turn for quick and ready information concerning mental disease. This purpose, it would seem, has been achieved, as the information is certainly condensed and also appears to be in line with the approved modern conception of mental disorders. The book contains no discussion or exposition of the anatomy or physiology of the central nervous system, but does very properly touch upon certain essential points as to psychology and as to what is that mind, which we consider at times as being "unsound" as contrasted with "sound" or well minds. The author mentions three definite functions of the mind, thinking, feeling and willing; and shows how any or all of these functions may be deranged to greater or less extent, thereby producing changes from the usual manner of reaction as regards those functions. He further shows that these derangments may be merely temporary in their nature and that it is only when such departures from the normal

ways of the particular individual involved, become prolonged, that a legal status of insanity may be said to exist. Further, the law is not so much concerned with the mere academic question as to the complete or incomplete normality of acts as related to the individual exhibiting them, but is greatly concerned with the question of the responsibility of that person for his behavior, and as to whether or not such acts bring him into conflict with the rights or safety of the community at large.

Another point brought out by the author, is the need for the worker in general practice to recognize, and to promptly and properly interpret the early indications of mental disorder, to the end that prompt and correct treatment may be instituted with the hope of either correcting the improperly functioning mental processes or of taking steps toward the safeguarding of the individual and the community against actions which cause injury, disgrace, or financial loss. Such a case might be cited when the early manifestations of general paresis, promptly diagnosed and treated, may be modified or controlled, to the benefit of the patient, his family, and society in general.

Attention is called to the generally recognized classification of mental diseases, to be used as a more or less necessary labelling of the patient for statistical purposes, but with the warning that such labelling is not the goal to be sought, but rather such careful analysis of the individual in all his aspects, to ascertain so far as possible the starting point and cause of his departure from normal mentality and by study of the nature of the deviation, endeavor to redirect his forces into normal channels.

The book gives a brief and clear outline of the different classes of mental disorders and is naturally of less interest to the psychiatrist than to the general practitioner for whom it was written.—Reynolds.

INTERNATIONAL CLINICS

A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Medicine and Surgery and Their Related Branches. Edited by Henry W. Cattell, A.M., M.D., with the Collaboration of Dr. Chas. H. Mayo. Vol. 1-35, Series 1925. Published by J. B. Lippincott Co., 1925.

The papers selected for this volume are by men of high rank in the profession. The first by Professor Barker on Recovery from Staphylococcus Septicemia with Meningitis, Thrombophlebitis, Embolic Pneumonia and Nephritis. Also a lecture on the Treatment of Psychoncurosis.

Dr. C. Judson Herrick contributes a paper on Some Relationships of the Visceral Nervous System. Drs. Thomas M. Dorsey and Rudolph Monoco present Some Urologic Problems in Daily Practice. Dr. Frederick Christopher contributes a paper on the Surgical Diseases of Meckels' Diverticulum.

Under the head of Mental Disturbances, is a paper by Edourd Retif of Rhone, France, on The Psychology of Parnanoia, Amnesia and Pathological Stealing, by Dr. Ralph C. Hammill and Psychoneurosis in Relation to General Medicine, by Dr. Alfred Gordon.

Under the head of Surgery are several papers, one by Dr. Max Thorek on A New and Effective Method of Treatment of Chronic Suppurations, Especially the Bones.

Drs. Henry W. Cattell and James F. Coupel present The Progress of Medicine for 1924.

There are other papers of equal merit, by distinguished authors, which we are unable to note for lack of space.

MOBILIZATION OF ANKYLOSED JOINTS

By W. Russell MacAnsland, M.D., Surgeon-in-Chief, Orthopedic Department Carney Hospital, Boston, Mass. Printed by Brussels Imprimerie Medical and Scientifique (S. A.), 1924.

This book is a resume of the progress in the treatment of ankylosed joints by operative procedure. The author enters a plea of Arthroplasty, not Resection. His argument is for mobilization in ankylosed joints by arthroplasty, and presents ankylosis from infection, non-tubercular, traumatic, causes and extent of ankylosis in Relation to Mobilization, Indications and Contra-Indications.

In reviewing treatment the author refers to the facts, that previous to 1860 the general method employed was brisement force and is still used in certain cases, and refers to the first operation by Dr. J. Rhea Barton of Philadelphia in 1826, and chronologically to the methods used today, introduced by Dr. John B. Murphy of Chicago. He describes in detail the work of many other surgeons, including his own method and the various joints in which arthropathy may be employed.

One-half of the book is occupied with excellent plates to show the operative details of the various methods employed. The book is of great value to surgeons who do this work and to those who are interested in the history of the development of arthroplasty and the bibliographic record.

REPORT ON SECOND INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY, ROME, MAY-JUNE, 1923

By William Seaman Bainbridge, Commander Medical Corps, United States Naval Reserve Forces. Washington, D. C., 1925.

This book of 148 pages is a report of the International Congress of Military Medicine reported by Commander William Seaman Bainbridge and reprinted from the Military Surgeon, December, 1924, January and February, 1925. It contains an outline of the organization of the Congress and the papers prepared by the delegates of the different countries represented, on subjects of especial interest to military surgeons. The book contains several interesting illustrations; pictures of King Victor Emanuele III, of Premier Mussolini, of several Italian Generals, of hospital wards and types of ambulances and stretchers and conditions of use.

Jane McIntosh Wright, M.D.
President
State Society Iowa Medical Women
1924-1925

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PIONEERS IN PREVENTIVE MEDICINE*

Jane McIntosh Wright, M.D., Clear Lake

The making of pilgrimages to religious shrines and the tombs of saints and noted personages is an ancient custom. The pilgrims were earnest zealots who pledged themselves to a life of purity, at least while on their journey. They were treated with great consideration and helped by gifts of food and clothing to reach their "Mecca". Later, however, this custom fell into disrepute, owing to the fact that adventurers and bad men attached themselves to these pilgrims. The custom has been revived and is gaining in this country. A shining example was the pilgrimage to the tomb of Lincoln by some 1800 children from the southwestern part of this state, sponsored by the Kiwanis Club. And these pilgrims, too, as of yore, were fed by people along the way.

Today we will make a mental pilgrimage to the tombs of the pioneers in preventive medicine: Edward Jenner, who conquered the greatest scourge of the race, small-pox; Louis Pasteur, who unlocked the door into the realm of microorganisms; Walter Reed, whose investigations in yellow fever settled its mode of transmission and made possible its eradication. In paying homage to these masters of science we are not unmindful of the brilliant work accomplished by Robert Koch, who in 1882 discovered the bacillus of tuberculosis; Edward Klebs, who was the first to see the typhoid bacillus and that of diphtheria and, next to Pasteur, did most to establish the germ theory; Loeffler, who demonstrated the bacillus of glanders and that of swine erysipelas and devoted much study to the diphtheria bacillus; Laveran, who discovered the plasmodium malariae, and Sir Ronald Ross, who demonstrated that the anopheles mosquito is the vector and by his mosquito brigades was able to rid infested places of this disease-bearing pest and make them habitable. The deadly female of this musical insect has been the chief inoculator of the race for ages, and may have been a powerful factor in the decline of Greece and Rome.

*Presidential Address, State Society Iowa Medical Women, May 12, 1925, Des Moines, Iowa.

Edward Jenner

In order to appreciate the work of Edward Jenner we must consider the conditions existing in his day. It was an era of fear and dread, for small-pox, the greatest scourge of the race, stalked like a grim specter beside everyone; it entered palace and hovel alike, taking toll of king and peasant. It has been said that sixty million people in Europe alone perished of small-pox during the eighteenth century. Voltaire said: "Three score persons in every hundred have small-pox; of this three score, twenty die in the most favorable season of life, and many more bear the disagreeable remains on their faces as long as they live." It was carried to this country in 1507 and took a fearful toll of the Indians. Cotton Mather said: "The Indians in those parts has newly, even about a year or two before, been visited with a prodigious pestilence as carried away not a tenth but nine parts of ten (yes 'tis said nineteen of twenty) among them so that the woods were almost clean of these pernicious creatures to make room for a better growth." Later, when small-pox visited Boston, Mather did not consider it in the same light as when it cleared the woods of the poor Indian. Today we rarely see a face disfigured by small-pox but in those days nearly every other one was so marked. Washington was a victim of small-pox in early life. We are accustomed to think of him as painted by Gilbert Stuart, and one receives an unpleasant shock when shown the pastel portrait in the Masonic Museum at Alexandria, showing the marked pitting of his face.

The idea of inoculation against small-pox is an ancient one. The Chinese claim to have used it as early as 59 A. D.; the Welsh practiced it for many years and called it "buying small-pox". Lady Mary Wortley Montagu while living in Constantinople noted the good results following inoculation against small-pox as practiced by the Turks, and had her small son inoculated. On her return to England in 1721 she made public her

observations. James Gregory Mumford says of her part played in the extension of this practice to England: "Inoculation for small-pox, a practice older than history, was carried by Lady Mary Wortley Montagu and taught to Englishmen—the bravest and worthiest thing ever yet done by women teaching medicine." The clergy preached against it, as "subverting the decrees of Providence and resisting the punishment of God." To test the efficacy of this method Princess Caroline persuaded the king to permit the inoculation of a number of criminals and pauper children. Why not follow this suggestion of the princess and use for research desperate criminals? I would favor this mode of punishment for those two fiends who, at the age of nineteen having exhausted their capacity to respond to any normal stimulus, for a thrill murdered a defenseless boy.

The introduction of inoculation in this country was due to the efforts of Cotton Mather. Here we have an interesting situation: the clergy, led by the doughty Mather, waging a bitter fight for this life-saving measure, and the doctors as bitterly opposing it. Mather, failing in his efforts to have the work taken up by the Boston doctors, went to Brookline and finally persuaded Dr. Zabdiel Boylston, a man of ability and learning, to take it up. Boylston at once inoculated his young son and two slaves, all of whom recovered in a short time. He made many inoculations, and was severely persecuted; and barely escaped hanging by a mob, it is said. Later, when the practice became popular, he was honored by both friends and enemies. His method of inoculation was as follows: With a sharp quill toothpick he pricked a pustule of a person suffering with small-pox, and then used it to inoculate the well. At first the virus was taken from a mild case contracted in the usual way, but later only from inoculated cases.

Inoculation merely mitigated the severity of the attack. One had small-pox, and was a source of contagion; but the death rate was much reduced —one in forty-eight, while in those not inoculated it was one in less than seven. Washington, while in winter quarters, had his army inoculated in squads. He knew that his soldiers would be attacked by small-pox sometime during the campaign, and preferred to choose the time.

In 1774 Benjamin Jesty, a Dorset farmer, made inoculations with cowpox, but not until Jenner had labored on it for sixteen years was it placed on a scientific basis. He was the first to vision a world free from this scourge. While still a student under his master his attention was called to the immunity from small-pox secured by an attack of cowpox. He heard the answer of a young country woman who, on being asked if she had ever had small-pox, said, "I can not have small-pox, for I have had cowpox". Later he went to London to finish his studies, where he lived in the home of John Hunter for two years. How much of his success he owed to this remarkable man it would be hard to estimate. Under his direction he made many investigations in natural history and performed many experiments. The friendship formed at this time lasted through life. Jenner told Hunter one day that he thought he had discovered a means of ridding the world of small-pox. Hunter replied, "Do not think; try; be patient, be accurate".

Lack of sympathy of his fellow physicians and fear of failure made him loath to publish his work until he was sure of success. In 1789 he inoculated his son of eighteen months with swine-pox, and two and three years later inoculated him with small-pox, but he remained well. On May 14, 1796, he made his first inoculation from one human being to another. In reporting it he says: "Taking matter from a sore on the hand of Sarah Nelmes, who had contracted cowpox in the usual way, inserted it into the arm of James Phipps, a healthy country boy aged eight and one-half years. Six weeks later inoculated him with matter from a small-pox pustule, but he remained well". Two years later, having published the "Inquiry", he went to London to demonstrate his discovery to his friends, but receiving no encouragement he returned home without doing a single inoculation. He left the virus with his friend Dr. Cline of St. Thomas Hospital, who later inoculated some children with good results.

Like all pioneers, Jenner traveled a rugged road. Writing to a friend he said, "Brickbats and hostile weapons of every sort are flying thick around me, I am beset on all sides by snarling fellows". "When he applied to the Royal Society of London for permission to present his conclusions to that august body, that body replied that he should be cautious and prudent, that he had already gained some credit by his communications to the Royal Society and ought not to risk his reputation by presenting to that learned body anything which appears so much at variance with established knowledge and withal so incredible." A year later his book reached the continent and was received with great joy. The French government offered to vaccinate all without pay. "In Geneva a priest exhorted the members of his congregation to be vaccinated, and had a physician present to do it after the service. An English clergyman preached a sermon advocating it, and whenever he baptized a child gave the parents a tract urging vaccination." Spain fitted out an

expedition to carry the practice to her dependencies throughout the world. Under Dr. Balmis they sailed in November, 1803. "On board there were twenty-two children who had never had small-pox, selected for the preservation of the vaccine fluid by transmitting it successively from one to another during the voyage. They returned in three years, having circumnavigated the globe and successfully introduced vaccination to Central and South American countries and many other places." Spain had accomplished one of the most humanitarian acts in history. When we remember the suffering and lives saved by this voyage, let us grant that she has in a measure atoned for some of the cruelties practiced by her in the new world.

Jenner sent his book to the Indians, and the chiefs met and sent the following reply: "We shall not fail to teach our children to speak the name of Jenner, and to thank the Great Spirit for bestowing upon him so much wisdom and so much benevolence. We send this belt and string of wampum in token of our acceptance of your precious gift; and we beseech the Great Spirit to take care of you in this world and in the land of spirits." His work spread over the whole world and he was loved and honored by all. "Two political prisoners, Dr. Wickman and Mr. Williams, were detained in Geneva by Napoleon. All efforts to obtain their release had been fruitless. Jenner wrote to Napoleon asking that they should be set free, and they were, Napoleon saying, "Jenner! Ah, we can refuse nothing to that man". Persons traveling abroad could do so without passport if they had a letter from Jenner. He received a letter of appreciation and a diamond ring from the Empress of Russia. She named the first child vaccinated, a girl, Vaccinoff in his honor and pensioned her for life. "His first official recognition in England occurred in 1803, when the Royal Jennerian Society was formed, having the King and Queen as patrons. The purpose of the society was to vaccinate the poor gratis and supply virus to the world. It was short-lived, however, owing to dissentions among its members."

The practice of vaccination was introduced in this country by the efforts of Dr. Benjamin Waterhouse, who in 1800 sent to England for virus to vaccinate his four children. He said that before vaccination was introduced "the fear of small-pox compelled the New Englanders, the most democratic people on the face of the earth, to endure restrictions of liberty such as no absolute monarch could have enforced".

Jenner spent so much time in vaccinating people free and in teaching his method to others that his practice was virtually ruined and his financial condition embarrassing. The government gave him 10,000 pounds, which hardly reimbursed him for his time and money spent on virus. Later he was given 20,000 pounds, and other countries made substantial gifts of money.

Edward Jenner was born at Berkeley, Gloucestershire, England, in 1749. His father was a clergyman and his mother belonged to one of the best families in the county. He was well educated, a musician, wrote clever verses, and was a fine conversationalist; often when he made a professional call some member of the family would return with him merely to hear him talk. After the death of his wife he returned to Berkeley and spent a large share of his leisure time vaccinating free the poor of the country. He died of apoplexy January 26, 1823.

What of our stewardship of this great gift to humanity? In 1870 France lost 20,000 soldiers from small-pox; Germany less than 300, as all her soldiers had been vaccinated within two years. In 1918, 50,000 people died of small-pox in the Philippine Islands. In our own state, with its boasted literacy and splendid health laws, we have a most disgraceful record, due to carelessness, ignorance, and the pernicious teaching of various cults. Here is a fertile field in which to labor, to teach the beneficent action of vaccination and to combat false ideas and fallacious theories concerning it. Let us ask the question Voltaire asked the French, "But are not the French fond of life, and is beauty so inconsiderable an advantage as to be disregarded by the ladies"?

Louis Pasteur

A few weeks before the death of Jenner there was born in Dole, France, a boy, Louis Pasteur, destined to be the greatest benefactor the world has known. He came from a long line of humble folk unmarked by genius. Perhaps "The Giver of Gifts" was jealously guarding the fountain of genius that none of its waters should be diverted, but all bestowed on this boy who was to bring imperishable fame to the name of Pasteur and great honor to his country, France.

His early life differed little from that of the average boy of his class. A fair student, with a talent for drawing, at the age of thirteen we find him making a portrait of his mother, insisting that she wear her Sunday bonnet and shawl. A few months before he was sixteen he was sent to Paris to school; he became ill from sheer homesickness and his father brought him home. The next year he went to college. Early in his college course he was attracted to the study of chemistry, and to this science he made many brilliant contri-

butions. Ever an enthusiastic worker with the microscope, he soon demonstrated that fermentation was due to microorganisms. In writing of his work he said, "It is very desirable to carry these researches sufficiently far to prepare the way for a serious inquiry into the origin of disease".

The then common belief in spontaneous generation was attacked by him. Van Helmont believed that mice could be generated spontaneously —place a small piece of cheese in a box, cover it, and soon mice would appear. This was not meant for humor, but was serious science. Pasteur's method of investigation was simple. He placed putrescrible fluid in glass flasks and boiled it, and, while still boiling, sealed them. Later he placed some of the fluid under the microscope and found no germs; took a flask and forced air into it through soiled cotton and it soon became putrid. He exploded the theory of spontaneous generation and opened the door into the field of microorganisms and their relation to disease. At the centenary of his birth held in New York City one speaker paused long enough in his address to show a flask of fluid as clear as the day it was sealed by Pasteur over sixty years before. Recently Columbia University received a gift of three pieces of apparatus used by Pasteur in his investigations at Lille. In speaking of this gift Dr. Ellwood Hendrick said: "The apparatus is such as any tyro in chemistry might use—and break. But consider to what mighty effect the man of vision used them. * * * Whoever looks upon these little tubes and bulbs will also read the words of their erstwhile owner. 'In the field of observation, chance only favors the mind prepared.' They may induce somebody to follow the dictum of Lafcadio Hearn, 'play God, and breathe the breath of life into his work.' "

In 1863 he was called to investigate a disease of wine which was playing havoc with that industry. He found it due to a vegetable parasite, and recommended heating the wine to a temperature of 55 or 60 C. (pasteurization). This does not change the taste nor bouquet. We all appreciate this method in our feeding of infants. His services were again required to discover the cause and suggest a remedy for a disease of silkworms which was threatening the silk industry After spending several years at this work he was successful, but at fearful cost. Overwork, worry over harsh criticism, and grief over the loss of his eldest daughter brought on a cerebral hemorrhage. Only after a long convalescence was he able to return to his work. When we recall that a large part of his work was done after this attack, we may carry hope to those who are thus afflicted.

His investigations in chicken cholera and anthrax convinced him that his theory of immunization by serums was correct. He was severely criticised for his conclusions, and he determined to demonstrate his theory. He was given fifty sheep for his experiment. He inoculated twenty-five with his serum and later inoculated the fifty with virulent anthrax cultures. After a sufficient time had passed he returned and was shown twenty-five dead sheep. He counted them and then asked about the other twenty-five. On being shown them calmly grazing in the pasture he turned to the crowd and, with a little gesture, said, "You see, gentlemen".

He now turned his attention to hydrophobia, that age-old disease. Three hundred and fifty years before Christ Aristotle said: "Dogs suffer from a condition of madness which puts them in a state of fury, and all animals they bite when in this condition are attacked by rabies." An attack of hydrophobia was fatal. The liver of a mad dog, suggested by Pliny the Elder, or crawfish eyes, by Galen, were as effective as any other treatment. A prize offered by the French government in 1780 for the best treatment for hydrophobia was won by Le Roux, a surgeon, who recommended cauterization of all wounds from known or suspected rabid animals. Superstition concerning this disease was rampant, and people believed to be suffering from it were killed like animals. In 1810 the French government was asked to enact a law prohibiting, under penalty of death, the strangling, suffocating, or bleeding to death of persons suffering from hydrophobia. Pasteur's investigations and mode of treatment, which has never been improved upon, are familiar to us all. Thus far his treatment had been confined to animals. To a letter from the Emperor of Brazil asking when this treatment could be given to man he answered, "but even when I have mutiplied examples of the prophylaxis of rabies in dogs, I think my hand will tremble when I go on to mankind". In this answer he suggested that criminals condemned to death be given the opportunity of choosing between certain death and inoculation to test this method, which he believed to be without danger.

Not until 1885 did he treat a human being. He consented then with great reluctance and only after counseling with two physicians, both of whom felt justified in advising the treatment. The patient, Joseph Meister, nine years old, two days before had been attacked by a mad dog and bitten in fourteen places on body and limbs. A local physician cauterized the wounds and advised

that he be taken to Pasteur. He was inoculated at once, and received twelve inoculations in ten days. The boy was cured, and later became the janitor of the Pasteur Institute. The fears of Pasteur in this case are touchingly expressed in a letter to the children by Madame Pasteur: "Your father had another bad night. He is dreading the last inoculation of the boy. And yet there is no turning back. The boy is in perfect health." The brilliant results in this case and many others which soon followed led to the building of the Pasteur Institute in Paris, made possible by contributions from rich and poor alike, and later followed by others all over the world.

Among other honors Pasteur was elected to the Academy of Medicine, an event which pleased him greatly. In his answer to the address of welcome he said: "I do not forget that medicine and veterinary practice are foreign to me. I welcome judgment and criticism. * * * I welcome with open arms the militant attack which has a method in doubting and whose rule of conduct is, 'More Light.'" In 1879 he presented before that body his germ theory in his name and those of his collaborators. He examined pus from boils and found the staphylococcus, which he claimed caused osteomyelitis. Said the streptococcus caused puerperal fever. A year later he interrupted a prominent man who was lecturing on the nature and cause of puerperal fever, with, "None of the things you mention cause the epidemic. It is the nursing and medical staff who carry the microbes from the infected woman to the healthy". The physician replied, "I fear that microbe may never be found". Pasteur arose and walked to the blackboard and drew a picture of the streptococcus, saying, "That is what it looks like".

In an address before the Academy of Science he said: "If I had the honor of being a surgeon, convinced as I am by the dangers caused by germs scattered on the surface of every object, particularly in the hospitals, not only would I use absolutely clean instruments, but, after cleansing my hands with the greatest care and putting them quickly through a flame (an easy thing to do with a little practice), I would make use of charpie, bandages, and sponges which had previously been raised to a temperature of 130 to 150 C.; I would employ only water which had been heated to a temperature of 110 to 120 C." In order to appreciate the significance of his suggestion we must recall the surgical technique of the day of "laudable pus". Lister, impressed by the discoveries of Pasteur, was using his antiseptic measures with remarkable success.

Let us pause and pay tribute to Madame Pasteur, a woman of intelligence and rare understanding; never jealous of his beloved mistress, science; giving material aid by taking notes of his day's work and by intelligent questioning enabling him to express himself clearly. Someone has said that "The Gods smiled on us when he married Madame Pasteur".

Pasteur died in September, 1895, and his body lies in a beautiful tomb in the Pasteur Institute, the place he loved so well and where he spent so great a part of his time even when not able to work. Above the door of his tomb the artist has engraved, "Happy is he who bears in his heart the ideal of beauty and follows it—the ideal of art, the ideal of science, the ideal of one's country, the ideal of the virtues of the Gospel".

Here we will leave this greatest citizen of France and, we may add, of the world.

In this day when a few lawmakers are trying to restrict the teaching of science for fear of its effect on religion, it is a pleasure to recall that this great scientist, a man unafraid to delve into the secrets of nature, was a devout Christian.

Walter Reed

We have paid our humble tribute to Jenner of England and Pasteur of France. We will now visit that simple grave in Arlington cemetery where lies the body of Virginia's illustrious son, Walter Reed, and join with Victor C. Vaughn in his tribute: "His investigations on the etiology of yellow fever demonstrated he was one of the truly great scientists who have contributed to preventive medicine, and his name has been written along with those of Jenner and Pasteur, among those who have blessed the race by placing in man's hands the means of self-protection from the most deadly diseases."

After finishing his medical course and spending several years in hospital work Reed was appointed assistant surgeon in the United States Army in 1875. While stationed for a year in Baltimore in 1890 he studied bacteriology under Professor Wm. Welsh of Johns Hopkins. Three years later he established a laboratory where he gave instruction in bacteriology to the young officers who were studying in the newly organized Army Medical School. He did much original work in bacteriology and made many investigations in sanitation.

In the summer of 1898 the government appointed Major Walter Reed of the United States Army, and Victor C. Vaughn and Edward O. Shakespeare, both surgeons in the United States volunteers, to investigate conditions and report on the epidemic of typhoid fever which was rag-

ing in our military camps in the South. After a careful survey of all the camps they reported the water supply good, but the sanitary conditions deplorable. Toilet vaults were shallow and unscreened, with flies swarming over the contents and then over the food in kitchens and mess-rooms. If the simple sanitary measure of covering their excreta, as Moses commanded the Israelites, had been observed we would not have this shameful record in our military history. Reed ordered a wholesale cleaning of all camps and screening of all kitchens and mess-rooms; and all vaults were made deeper and screened. The epidemic soon abated, and the ubiquitous house-fly was proved the carrier.

In 1900 he, with three associates, was sent to Cuba to investigate the yellow fever situation, as some of our troops were still stationed there. The theory of the transmission of yellow fever by mosquitoes had been advanced by Carlos Finley as early as 1881. Reed and his followers set to work at once to test this theory. In order to do so someone must act as host to a supposedly infected mosquito. Dr. James Carroll was the first to submit to the bite of such a mosquito; he contracted the fever and recovered. Twenty-two cases were induced experimentally, fourteen by the bites of infected mosquitoes, six by injection of blood from a person suffering from the fever, two by filtered blood serum, proving conclusively that the mosquito is the vector. One more great victory was won for science by the great moral courage of these young men. Their names should appear well toward the top of the roster of heroes. Let us salute them as did Major Reed the two privates who presented themselves in answer to a call for volunteers for this experiment. After explaining the dangers incident to the disease he said they would be well paid, but they answered that they would accept the risk only "in the interest of humanity and the cause of science". Major Reed touched his cap and said, "Gentlemen, I salute you".

Major William Gorgas in 1901, by destroying the mosquitoes and screening the rooms of all patients suffering from yellow fever, was able to free Havana from this plague for the first time in one hundred and fifty years. He was able, by knowledge of the part played by mosquitoes in yellow fever and malaria, to make possible the Panama Canal and convert the Canal Zone, long known as "The White Man's Grave", into one of the most healthful places in the world.

Walter Reed died, at the age of fifty-one years, in 1902, following an operation for appendicitis. The government hospital in Washington, named in his honor The Walter Reed Memorial Hospital, is a splendid monument to his memory.

A century and a quarter have passed since Jenner made the first great gift in preventive medicine to the world. Sixty years later Pasteur opened the door into the domain of microorganisms and elaborated his theory of serum therapy which has revolutionized the treatment of many diseases. Many conquests have been made and there are many more to make. We have a foe which, with ever-increasing strength, strikes at those who have weathered the storms of infancy and youth and entered the quiet waters of middle life—Cancer. Let us hope that the mantle of one of these great men soon may fall on one who will conquer this foe.

Although we may not hope to reach the heights from which these pioneers looked down upon a land of promise freed from the bondage of preventable disease, but, like Moses of old, were not privileged to enter, their achievements will inspire us to labor for its realization.

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BRANCHIAL CYSTS*

IRA NELSON CROW, M.D., Fairfield

Instead of generalizing on our past achievements, or prophesying as to our future opportunities and accomplishments, I believe that it will be far more interesting to review a case which I find after searching the literature to be very rare.

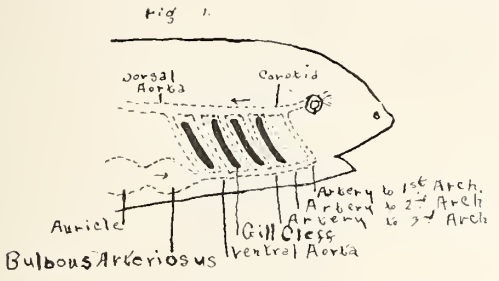
Many pathological conditions about the head and neck, as well as elsewhere, are due to defective development. Therefore in order to understand more fully some of these malformations, let us review briefly, some of the embryology. To illustrate this case, I shall limit this review to the embryology developed about the so-called branchial clefts.

In the mammals these are not clefts but rather grooves, and have great morphological significance in further development, in as much as they determine to a large extent the arrangement of various organs of the head and neck.

The grooves represent the clefts which exist in fishes (Fig. 1) through which, water taken into the mouth passes, bathing the gill fila-

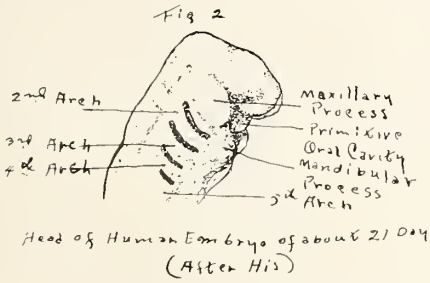
*Chairman's Address—Presented before the Seventy-fourth Annual Session, Iowa State Medical Society, Des Moines, Iowa, May 13, 14, 15, 1925, Section Ophthalmology, Otology and Rhino-Laryngology.

ments, which are attached to the arches separating the clefts. It is due to this respiratory function in the fishes which gives them the name of branchial clefts. In the mammals, if



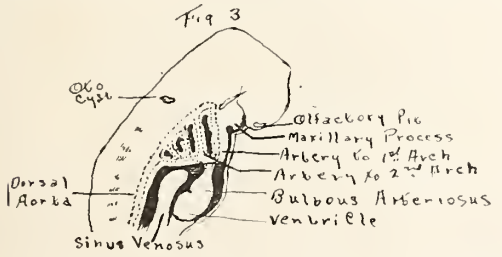
development be normal, they only appear for a short time and then disappear, or are applied to some entirely different purpose. Opposite each groove of the ectoderm there is one in the entoderm, there being only a thin layer of mesoderm between (Fig. 4). However in the region of the arches there is considerable more mesoderm.

In the human embryo there are four grooves and five arches in the pharyngeal region of the

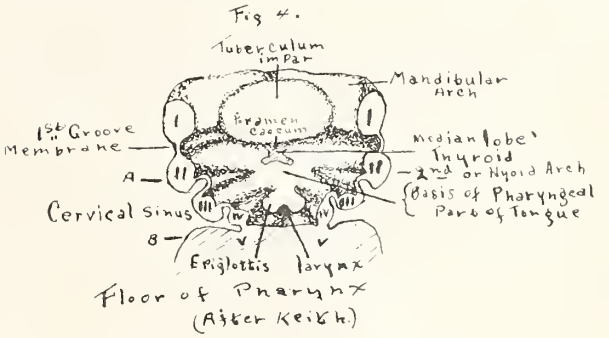


digestive tract (Fig. 2). The fifth arch is not very definitely outlined.

At first the mesoderm pushes in between the ectoderm and the entoderm much more rapidly in the region of the first and second arches, than in the others, which are apparently arrested for a time. Therefore the first or mandibular and the second or hyoid arches overgrow the

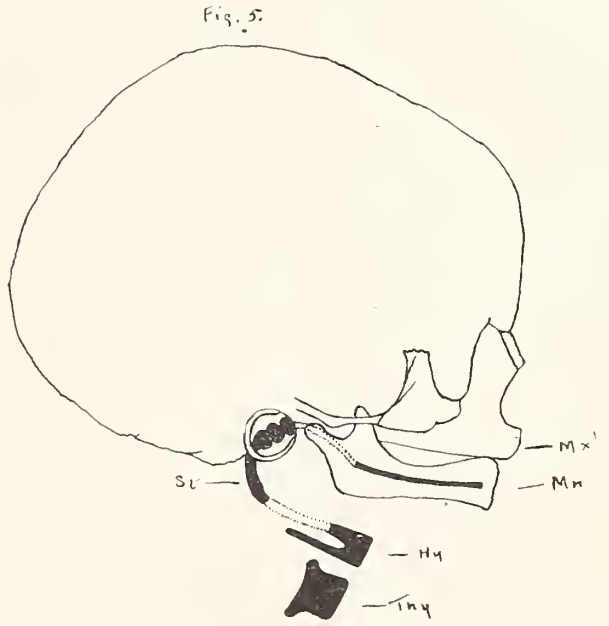


others caudally. This forms the precervical sinus (Fig. 4). About the fourth week the anterior border of this sinus, which is the posterior edge of the hyoid or second arch, growing backwards meets the posterior border of the sinus, which is the throasic wall, and closes in over this sinus forming, for a short time a duct. This is called the cervical duct. Finally fusion takes place, thus enclosing a nest of ectodermal cells or sac called the vesicula pericervicalis. All of which finally disappears, providing development is normal. However, if this retrogression is not complete, we have this nest of



ectodermal cells left behind to break down into cysts, tumors, or if the duct persists, a sinus or fistula.

Now let us consider some of the structures developed from these arches and grooves (Fig. 5).

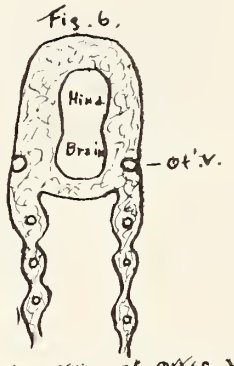


The first or mandibular arch early becomes differentiated into a short upper or maxillary process, and a longer lower mandibular process. Briefly then from the first arch we have developed the maxilla, palatine, malleus, incus, spheno-mandibular ligament and mandible.

From the second arch, the styloid process of the temporal bone, stylo-hyoid ligament and the lesser cornu of the hyoid bone. Also this carti-

lage of the second arch is concerned in the formation of the crura of the stapes. The base of the stapes is contributed by the general cartilaginous capsule of the labyrinth. Its peculiar shape is secondary and is due to the perforation of this triangular plate, the early representative of this bone, by a small branch of the internal carotid artery, the perforating stapedial artery, which later disappears.

From the third arch we have the greater cornu of the hyoid bone developed, while from the



Showing Invagination of Otic Vesicle
(After Prentiss)

fourth and fifth arches the thyroid cartilage of the larynx.

What about the structures developed in and about the grooves?

Around the dorsal end of the first groove the auricle develops from a series of tubercules of the first and second arches. Defects in this region produces anomiles of the external ear. It is interesting to note that McKenty after an exhaustive study of tumors of the head and neck, suggests that those tumors developed in

Showing First Branchial Groove Pushing upwards and backwards between ectoderm and Otic vesicle.
(After Prentiss)

and about the parotid gland and ear should be reclassified, as he believes that most of them are developed from embryological defects about this region.

The ottic vesicle is an invagination of the ectoderm in the region of the hind brain toward which it migrates (Figs. 6 and 7). The first branchial groove pushes upwards and backwards between the ottic vesicle and the ectoderm (Fig. 8), thus developing the eustachian tube, tympanic cavity and the antrum (Fig. 12). The

Groove between Otic vesicle and ectoderm
(After Prentiss)

external auditory canal being developed from the outer part of the first groove leaves the drum membrane developed as the thin layer between. If the inner portion of this first groove did not push upwards and backwards we would not have the middle ear, and the petrous and squamous bones would be one. But as this

Showing Relation of 1st Groove to 7th Nerve
(After Prentiss)

groove pushes upwards and backwards the petrosa is separated from the squamosa and the anulus. The antrum exists probably because of the position of the seventh cranial nerve as it passes through the temporal bone. In the development this nerve passes downwards and for-

1st Groove Pushing upwards and backwards deflecting 7th Nerve Backwards.
(After Prentiss)

wards to the second or hyoid arch. However in the higher forms, the musculature cells of this arch migrate to the head forming some of the face muscles, consequently the seventh nerve migrates also (Fig. 9). But the backward and

upward development of the first groove causes the seventh nerve to deflect backwards. However as this nerve goes to the second or hyoid arch, and also as there is a limit to its posterior displacement, therefore the first groove pushing onward slips over this nerve and forms the antrum (Figs. 10 and 11). Keeping this in mind

Fig. 11.

1st Groove has pushed over the 7th nerve to form the Antrum (After Prenzis)

enables us to understand the peculiar course of the seventh cranial nerve through the temporal bone.

At about the fourth month the tonsils are formed from the epithelium of the second groove. They may grow to fill entirely this groove, or frequently a depression exists above the tonsils, which represents a portion of the original second groove. This is called the fascia supratonsillaris. It is in the second groove,

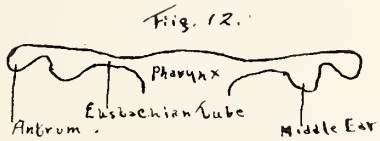


Fig. 12.

Semi-diagrammatic Drawing to show how the Eustachian Tube, Middle Ear, and Antrum are formed from the 1st Branchial Groove (After Prenzis)

usually, that we find the internal opening of the cervical fistula, and usually about the tonsil. These fistulæ are congenital. Their external opening is generally in the region of the lower portion of the sterno-cleido-mastoid muscle. They occur most frequently on the right side. This fistulous tract may be incomplete, in which event it would have a sinus opening either internally or externally. The cervical fistulæ are very difficult to remove, for if the development be regular, their course lies between the external and the internal carotid arteries (Fig. 15). While the course of a fistula of the third groove would lie between the common carotid and the vagus nerve. However fistulæ of the third and fourth grooves are very unlikely to occur. Only those of the second have been recognized.

Very important structures, one or more of the ductless glands, develop from the epithelium of the ventral ends of the last three grooves (Fig. 14). The thymus from the third, also thymus rudiments from the fourth. These latter were formally called the lateral thyroids. The parathyroids from the third and fourth; the ultimobranchial bodies from the fifth. These latter probably undergo degeneration early, though they may persist as cysts in the substance of the thyroid gland.

In the floor of the mouth of the embryo (Fig. 4), one finds a rhomboidal depression in the

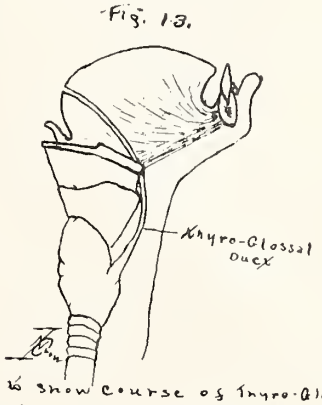


Fig. 13.

Sketch to show course of Thyro-Glossal Duct when persisting

median line between the ventral ends of the first and second branchial arches. Here arises a rounded body known as the tuber impar. Behind this is the thyroid invagination, a pit lined by hypoblastic epithelium, the thyroid analage. This grows in all directions and as it deepens it becomes bilobed at its extremity. At about the time the embryo becomes six m. m. in length it

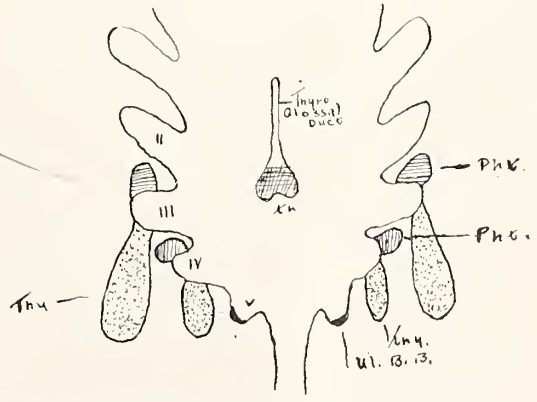
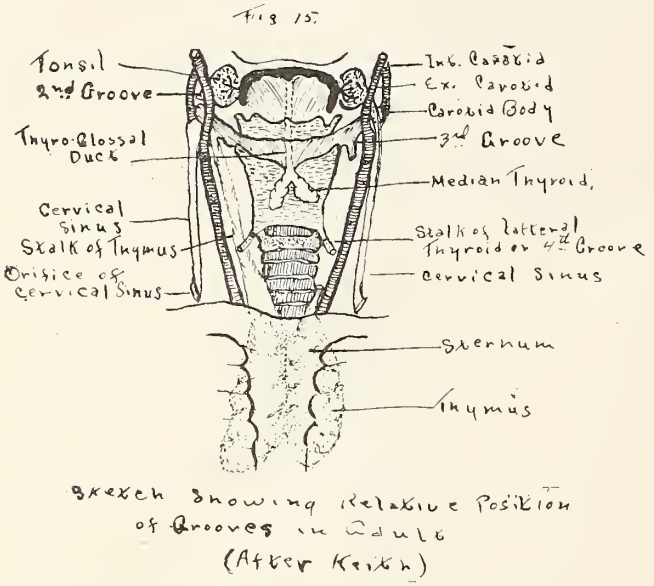


Fig. 14.

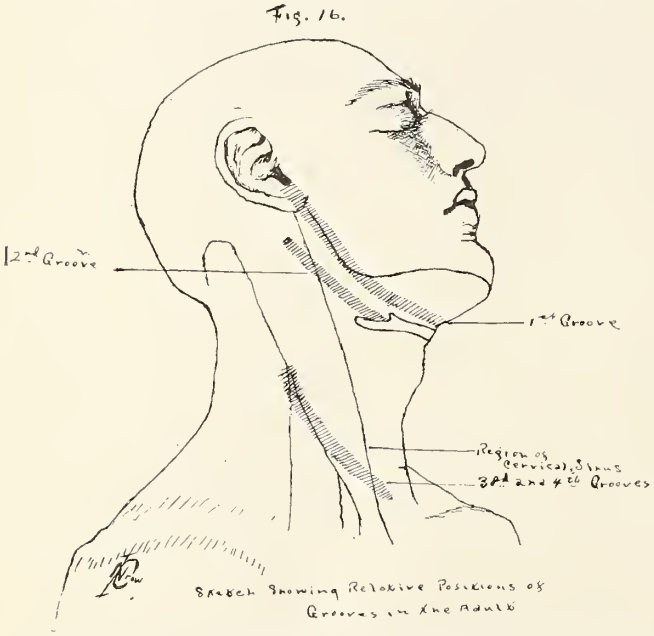
Diagram Showing the Origin of the Various Branchial Epithelial Bodies (Kohn)

becomes completely separated from the floor of the pharynx, if development be regular, and all that remains to mark the point of its origin is the foramen cæcum on the tongue. If this development be arrested, and the duct persists, it is known as the thyro-glossal duct. In the

development of the thyroid it migrates caudally and becomes a solid transverse elongated mass, into which trabeculæ of connective tissue develop, separating it into follicles. The thyro-



glossal duct may pass posterior to the body of the hyoid or through it, in which latter event it becomes very difficult to remove. This position is due to the migration caudally of the thyroid gland. It is interesting to note that Bertwistle and Frazer of England in an exhaustive study



of the development of the thyroid and the thryoglossal duct, put forward the thought that, para passu with the salivary glands the activity of the thyroid is increased during digestion.

Case Report.—9-13-21. Mr. F. K., white, male, single, 48 years old, French descent, family history negative. Past medical history: He has had ordinary diseases of childhood, otherwise well except for considerable throat trouble all his life. No malformations. No deformities in the family. He had his tonsils removed two years previous. This helped his throat condition considerable, but a soreness persisted on the right side. There was no post nasal discharge. But he cleared white particles from his throat at times.

Examination: Nose showed no special pathology. Tonsillular fascia clean as to tonsil tissue. In fact at first glance I thought that there was very little wrong with the upper part of the pharynx; but on closer examination at the upper posterior part of the right tonsillular fascia, there was seen an inflamed area about 2 or 3 m. m. across which appeared like an opening. Extending down from this was a streak of inflammation, 3 or 4 centimeters long. Pressure about this opening brought out pus, and debris. On exploration with a blunt probe the cavity seemed to be about 1½ to 2 centimeters across and extending down about 2 or 3 centimeters in length.

Diagnosis: Probable cyst or sinus. Remains of second branchial groove.

9-25-21. After injecting the cavity with a weak solution of methylene blue, and under local anesthesia the sac was dissected out with considerable hesitancy, some bleeding and more difficulty. The wound healed up promptly, and with no complications.

Pathological Report: Grossly the specimen appeared to be a small sacual, with a few muscle fibers on the back, and lined by a smooth epithelium. If distended with fluid it would contain about three c. c. It is lined by stratified squamous epithelim. Quite a number of mucous glands, and considerable of lymphoid cells near the basement membrane.

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PORTO RICO ISSUES NEW HEALTH BULLETIN

The Department of Health of Porto Rico has just announced the establishment of a monthly periodical known as the "Porto Rico Health Review". The first issue contains articles describing the work of the department in combating hookworm, tuberculosis, plague and venereal diseases. The Bureau of Venereal Disease Control was organized within the last year but considerable progress has been made. The Bureau confined its attention chiefly to syphilis.

LARYNGEAL TUBERCULOSIS*

Cecil C. Jones, M.D., Des Moines

This subject has been chosen because, of specific laryngeal lesions, it is the most common; and because next to syphilis, pulmonary tuberculosis is the most common specific chronic disease with which we come in contact.

In the consideration of this subject, we are discussing the most frequent complication of pulmonary tuberculosis rather than a disease entity itself. Laryngeal tuberculosis is always secondary to pulmonary tuberculosis, whether or not the primary lesion in the lungs is clinically demonstrable. This has been shown by post-mortem examination of the lungs.

The incidence of specific laryngeal involvement in tuberculous persons is directly proportionate to the degree of pulmonary involvement and activity. Sir St. Clair Thomson[1] recently summarized his observations which cover a period of ten years. He examined 2541 cases of pulmonary tuberculosis in sanatoria; 5 per cent of the incipient cases, 20 per cent of the moderately involved cases, and 32 per cent of the advanced cases, or an average of 19 per cent of all cases, presented a tuberculous laryngeal complication. At the Iowa State Sanatorium[2] at Oakdale the results of the examination of more than 2000 cases of pulmonary tuberculosis reveals that 10 per cent of the incipient cases, 21 per cent of the moderately involved cases, and 42 per cent of the advanced cases, or an average of 25 per cent of all cases had tuberculous laryngitis. Necropsy records[3] show however, that from 48 per cent to 83 per cent of persons dying from pulmonary tuberculosis have laryngeal tuberculosis. The incidence of laryngeal tuberculosis in relation to sex does not show a predisposition for either. In relation to age, it occurs at all ages that pulmonary tuberculosis does, but is most frequent between the ages of twenty and forty years.

There are two theories as to why and how the larynx is so frequently secondarily involved in this specific chronic infection. The accepted explanation for the greater proportion of cases is based upon the assumption that the larynx is a focus of minor resistance, resulting from trauma during cough, or from a pre-existing simple laryngitis secondary to a chronic post-nasal discharge, or upper respiratory tract infection, the bacilli-laden sputum infecting the larynx through the surface. The fact that the posterior commissure, against which the sputum strikes and lodges, is the most frequent site of the initial lesion lends support to this theory. They who dispute this explanation maintain that the larynx is infected submucously through the lymphatic and blood streams. Otherwise how can the former theorists account for tuberculous submucous deposits with intact surface epithelium? They also contend that it is not probable that the larynx is infected by direct continuity of tissue in those cases not raising bacilli-laden sputum. However, it has been shown that tubercle bacilli can pass between normal intact epithelial cells. Then too, it is doubtful if one ever has pulmonary tuberculosis without raising bacilli at some stage of the disease. It is probable, however, that some cases are infected in one way, some in the other, and some in both. Since upper respiratory tract infections lower the local resistance of the larynx, we should expect a greater percentage of laryngeal involvement among tuberculous persons in the upper Mississippi Valley, than in the more favorable climates, and such is the case.

The symptoms of tuberculous laryngitis are not pathognomonic. They vary to some extent according to the degree of local involvement. The majority of tuberculous lesions are low grade and chronic in type, therefore have a slow insidious onset. The two most common symptoms suggestive of laryngeal involvement are huskiness of the voice, and a sense of discomfort referred to the hypopharynx. The huskiness of the voice is slight but persistently recurs, usually becoming manifest in the afternoon, being induced by vocal or general fatigue. The paresthesia complained of may consist of a dryness, a tickling, or a burning sensation in the lower part of the throat. It may simulate a mild attack of globus hystericus. Actual pain and dysphagia are late complaints resulting from ulceration or perichondritis. The laryngeal condition may be a prominent factor in the production of cough. It must be remembered that tuberculous laryngitis exists without causing any alteration in voice or localizing symptoms. Twelve per cent of Thomson's[1] cases were symptomless.

In the larynx, the favorite site for early tuberculous lesions is in the posterior commissure which is in contrast to syphilitic lesions which are prone to attack the anterior commissure. There are three clinical types of lesions, the acute, subacute, and chronic. The line of demarcation between these stages is often indefinite. If the onset is acute, which is the exception, the clinical picture is one of a diffuse hyperemia, like that of laryngitis simplex from which it cannot be differentiated by the appearance of the local le-

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sion. In the subacute stage are classified those cases characterized by progressive proliferation of granulomata and ulceration. Chronic laryngeal phthisis is the most frequent and benign type of lesion observed. The lesion may be of this type from the onset, or either of the other two types may recede in activity becoming chronic.

Clinically the larynx as a whole presents an anemic or patchy anemic and hyperemic appearance. In the interarytenoid space, where the mucous glands abound, there is first a wrinkling or rough granular appearance of the surface which subsequently develops into a mound of round cell infiltration. As the lesion advances the arytenoids become infiltrated giving them a bulbous appearance. At the same time the true cords become reddened on their median edges at their posterior insertion. Later, they lose their luster, becoming thickened and reddened throughout, which is most evident in the posterior third of one or both cords. If the lesion advances further it becomes subacute in type with the formation of tuberculomata. Their most common site is the apex of the interarytenoid infiltration or the edges of the true cords. Further advance results in caseation necrosis of the tuberculomata resulting in ulcers, which may extend to such a depth as to produce a perichondritis. Aside from the anterior commissure the epiglottis is the least frequently attacked part of the larynx. Like the anterior commissure, if involved, it usually occurs at a late stage of a progressive lesion. It is first manifested by a pale granular appearance of the upper edge of the tip, which often subsequently becomes reddened, thickened, and later ulcerates. Ulceration of the epiglottis is the most frequent cause of dysphagia in tuberculous patients. Tuberculous lesions in the esophagus are relatively rare. One of the outstanding clinical pictures of a tuberculous larynx is the wide posterior commissure, even if healed. Once involved it never returns to normal due to fibrosis and loss of elasticity.

Pulmonary tuberculosis produces another laryngeal condition, namely, unilateral recurrent laryngeal paresis or paralysis of the right cord, due to the recurrent laryngeal nerve being caught in an apical fibrosis as it loops around the innominate artery.

In differentiating laryngeal lesions, it is of inestimable value to first elicit a history relative to frequency of upper respiratory tract infections, venereal history, family history, and whether or not there has been any loss of weight, strength, cough, sputum, hemoptysis, fever, and when the symptoms are most evident. The use of old tuberculin for diagnostic purposes is not justifiable in laryngeal cases. Tuberculous laryngitis in the acute stage cannot be differentiated from acute laryngitis simplex by the appearance of the local lesion. The differentiation is made by the exclusion of causes in the upper respiratory tract, the pulmonary findings, and the subsequent course and duration of the lesion. The voice changes may be suggestive of one or the other. The huskiness of the voice in simple laryngitis is more marked in the morning, and usually improves during the day, while in tuberculous laryngitis it becomes manifest in the afternoon following fatigue. Secondary syphilitic lesions consisting of mucous patches occur in the larynx but are not apt to be confusing, for if found in the larynx, will also be found in the oropharynx.

The greatest difficulty is encountered in differentiating subacute tuberculous laryngitis and tertiary syphilitic lesions, both being characterized by granulomata and ulceration. First the voice of the tuberculous is usually weak and husky, and more so in the afternoon, while that of the syphilitic is characteristically raucous and present throughout the day. Syphilis is prone to attack the anterior commissure, while tuberculosis favors the posterior commissure. The color of a syphilitic lesion is maroon, while that of a tuberculous lesion is a paler shade of red. The syphilitic ulcer is punched out, has regular edges, a dirty grey base, is deep, tends to extend in depth rather than in surface area, and is surrounded by a ring of maroon-colored induration. On the contrary tuberculous ulcers are paler and sluggish looking, with irregular edges, a yellowish base, are shallow, and tend to extend in surface area rather than in depth. Perichondritis occurs much earlier and more frequently in syphilitic lesions than in tuberculous, due to the mode of extension of the ulcers. Cervical glandular involvement is more frequent in syphilis than in tuberculosis. In an individual with syphilitic laryngitis the laryngeal symptoms will predominate, but with the same degree of tuberculous involvement the systemic and pulmonary symptoms usually predominate A syphilitic larynx will respond favorably to the administration of potassium iodide internally, but a tuberculous lesion is often aggravated by its administration. The Wassermann reaction should be determined in all laryngeal cases, but it must be remembered that a negative report does not necessarily exclude syphilis, and that tuberculous and syphilitic lesions may coexist in the larynx.

Chronic laryngeal phthisis and chronic laryngitis simplex may easily be confused inasmuch as both often present an area of interarytenoid infil-

tration, and color changes are always relative and only suggestive. In this type, as in the acute, the differentiation depends upon the exclusion of causes in the upper respiratory tract, the pulmonary findings, and the subsequent course of the lesion.

The differentiation from early intrinsic carcinoma of the larynx in persons beyond the age of forty requires a biopsy. In such lesions it is not advisable to procrastinate, permitting the lesion to become extrinsic should it be carcinomatous. The usual site of carcinoma of the larynx is in the posterior third with a predisposition for the cords, resulting in an early fixation or limitation of the cord involved.

A just criticism of the literature relative to the treatment of laryngeal tuberculosis is, that the comparative progress or retrogression of the laryngeal and pulmonary lesions is either omitted or not compared, therefore it is difficult to judge the value of the various methods of treatment. To regard the pulmonary and laryngeal conditions together is essential because the former is a primary lesion and the latter a direct complication and the two most often run a parallel course. That is, if the lungs are progressively becoming more involved, the laryngeal condition will follow suit in spite of any and all forms of treatment. No one has ever recorded having seen a larynx becoming worse while the pulmonary lesion was improving. However, it is not unusual to see a larynx become cicatrized during a period when the pulmonary lesion is stationary, and remain so, although the patient subsequently succumbs to the pulmonary infection. Therefore this parallelism is not absolute. If the lung lesion temporarily remains stationary, during which period the laryngeal lesion does not tend to resolve, it will only be a short time before the lungs will show evidence of renewed activity. This shows that either the pulmonary lesion is influenced by the laryngeal lesion, or that the failure of the laryngeal condition to resolve is a manifestation of the poor resisting powers of the patient. Having established the fact that there is a marked parallelism between the two lesions, it therefore seems rational that the treatment of this complication is the same as the basic treatment of the primary lesion, namely, absolute rest under a sanatorium regime.

Rest of the larynx means exclusive use of a pad and pencil. Whispering will not suffice because but few know how to whisper using only their lips, and undoubtedly a forced whisper requires more vocal energy than ordinary conversational use of the voice. A sanatorium is the only suitable place to endeavor to enforce silence, and even then it is a problem because it should be rigidly observed over a relatively long period of time. Moreover, sanatorium life itself is a prophylactic measure against laryngeal invasion as only occasionally does it develop after the patient's entrance. Between 30 per cent and 34 per cent of tuberculous laryngeal lesions will become arrested under a sanatorium regime and absolute rest of voice, because their pulmonary and systemic conditions improve. The percentage of improvement is inversely proportionate to the degree of pulmonary involvement. Swabbing and painting the larynx with various astringents or antiseptics, such as argyrol, silver nitrate, formalin, chromic or lactic acid is contraindicated because it traumatizes the larynx, induces coughing and gagging which fatigues the patient and is contrary to the rest regime.

There are two groups of cases which will not respond to conservative treatment. One group includes certain cases presenting a sluggish low-grade interarytenoid infiltration, ulceration, or tuberculoma with a stationary pulmonary condition. These lesions respond remarkably well to electric cauterization under local anesthesia by the indirect method of laryngoscopy. Improvement in the laryngeal, pulmonary, and general conditions usually follow this procedure. The selection of these cases requires the full cooperation of internist and laryngologist. The second group comprises those cases showing a progressive increase in their pulmonary and laryngeal involvement and activity. All that can be done for them is to furnish them some relief. Here again, painting and swabbing are contraindicated. Steam inhalations may afford some relief. If a painful dysphagia develops, the aspiration of orthoform, paresthesin or anesthesin powder prior to swallowing will often alleviate the discomfort of eating. If this fails an alcoholic injection into the neighborhood of the superior laryngeal nerves will furnish relief.

The prognosis as to the laryngeal lesion cannot be predetermined, due to the dependence of the course of the laryngeal lesion upon the course of the pulmonary lesion. However, the determination of whether or not tuberculous laryngitis exists is of definite prognostic value to the internist. In Thomson's[1] series of cases, two of every three patients presenting this complication were dead at the end of one to ten years; and vice versa, two of every three patients with pulmonary tuberculosis and a sound larynx were alive at the end of one to ten years. That is, the mortality is 50 per cent higher among those having the complication, tuberculous laryngitis.

In conclusion there are five points to be emphasized:

1. Tuberculous laryngitis is always secondary to pulmonary tuberculosis.

2. Tuberculous laryngitis is the most common specific lesion of the larynx, and is the most frequent complication of pulmonary tuberculosis.

3. There is a marked parallelism between the courses of the pulmonary and laryngeal lesions.

4. The treatment is basically that of the primary lesion, i. e., sanatorium care and absolute rest of voice. There are definite indications for the use of the cautery. The laryngologist and internist must at all times cooperate in order that these cases be most effectively treated.

5. The knowledge of whether or not tuberculous laryngitis exists is of definite prognostic value to the internist.

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FOREIGN BODIES IN THE AIR AND FOOD PASSAGES: REPORT OF 43 CASES

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For the subject matter of this paper I have chosen to collect and tabulate all available findings in a series of forty-three cases of foreign bodies in the air and food passages. These cases have been under the care of my associate, Dr. J. B. Naftzger and myself. Some of them we have seen together, others have been handled separately by one or the other of us. The records included date from 1918 to the present time. In several instances where the cases were treated in the country, the history and record of findings are very incomplete. During this period of seven years new ideas and instruments, new aids in diagnosis, and different methods of procedure have come forward to enlarge the scope of endoscopic work. We have nothing new or original to report in this review. The desire to know whether what was done or not done in each case would agree with the dictum of authorities has led to a rather detailed review of the literature.

Of the forty-three cases, twenty-four dealt with exploration of the air passages for foreign bodies, fifteen were oesophageal, and in the remaining four, the larynx alone was explored. The group of cases where foreign bodies were searched for in the tonsils or pharynx, or removed from the larynx without endoscopic procedures are not included in this series.

To simplify the study of these cases the tabulations will be grouped in outline form:

I. TYPES OF FOREIGN BODIES

Foreign Bodies in Air Passages		Foreign Bodies in Oesophagus	
Corn Kernels	8	Screw	1
Peanut	4	Penny	3
Sand Burr	4	Piece of brass	1
Lima Bean	1	Dollar	1
Apple Core	1	Nickel	3
Almond	1	Button	1
Prune Pit	1	Straight pin	1
Watermelon seed	2	Iron washer	1
Brazil nut shell	1	Safety pin	2
Hazel nut	1	Prune pit	1
Mucus only	3		
Beef steak	1		
	28		15

It is noted that in numbers, the kernel of corn stands first, and has appeared twice as often in this series as any other type of foreign body. However, the proportion of sandburrs (spurs) would be higher, if we had included in the series the simple cases in which the burr (or spur) was removed while manipulating the throat or attempting to cocainize the larynx. These were not included because no endoscopic procedure was used. In only one case have we been called upon to remove this type of foreign body from the trachea or bronchi. It has been our experience that the sharp projections have almost always been embedded in the vocal cords or tissues above them. In three cases "mucus only" is tabulated. Here, there was typical history of inhalation of a foreign body, and a typical clinical foreign body picture. Yet, at bronchoscopy no foreign body was found large enough to be identified. However, after aspiration of the secretion with the suction catheter through the bronchoscope, small particles of some foreign matter were evident and the symptoms were relieved.

II. LENGTH OF TIME FOREIGN BODIES WERE PRESENT IN PASSAGES

	Air Passages	
Corn kernels	(8)	7 hours to 12 days
Peanut	(4)	1 day to 63 days
Sand Burr	(4)	6 hours
Lima bean	(1)	1 day
Apple core	(1)	6 hours
Almond	(1)	14 days
Prune pit	(1)	105 days
Watermelon seed	(2)	5 days to 7 days

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Brazil nut shell	(1)	6 hours
Hazel nut	(1)	3 days
Mucus	(3)	1 day to 14 days
Beef steak	(1)	10 minutes
	28	

Oesophagus

Screw	(1)	3 days
Penny	(3)	7 hours to 5 days
Piece of brass	(1)	240 days
Dollar	(1)	18 hours
Nickel	(3)	1 day to 3 days
Button	(1)	60 days
Straight pin	(1)	7 hours
Iron washer	(1)	3 days
Safety pin	(2)	8 hours, 10 hours
Prune pit	(1)	8 hours
	15	

These statistics emphasize one very important feature of endoscopic work; that the diagnosis in a great many cases is made long after the symptoms are very definite. It is this delay in bringing the cases for treatment that greatly increases the chances of complications or fatalities. In the tracheal and bronchial group, corn kernels were present from seven hours to twelve days; peanuts from one day to sixty-three days, and a prune pit was in the trachea 105 days. In the oesophageal group a button had been lodged for sixty days and a piece of brass 240 days. The histories of these cases bring out forcibly this one point; that the diagnosis is often arrived at only after a gradual elimination of other diseases while the patient passed from one doctor to another. How many foreign body cases unrecognized as such, go on to serious complications or death, is a matter only for speculation. The study of any group of records leads one to believe that the number is great.

III. LOCATION OF FOREIGN BODIES

Air Passages

Trachea	7
Right bronchus	10
Left bronchus	4
Trachea-Bronchi	3
Larynx	4

Oesophagus

Upper stricture	10
Middle portion	3
Artificial stricture	2
Prune pit in typhoid stricture	
Penny in lye stricture	

A. *Air Passages*—Here it is noted that when a foreign body entered either bronchus, it involved the right ten times and the left four. The anatomy must be responsible for this fact. The right main bronchus is shorter, wider and is practically a vertical continuation of the trachea at a 25 degree angle, while the left deviates at an angle of about 75 degrees, and might be considered as a branch. The carina between the bronchi is situated to the left of the mid-line, thus tending to direct foreign bodies to the right into the almost vertical right bronchus. As a rule a foreign body that remained in the trachea did so because its size and shape prevented it from entering either bronchus. In several cases the foreign body was in the trachea before bronchoscopy, but the forced inspirations during the operative procedure caused it to at least partly enter one or other bronchus. Three (3) sand-burrs were found in the larynx with the sharp projections holding them fast to the vocal cords. As is usual in these cases, there was a very marked reaction in the tissues of the larynx. As has been brought out during the past year, this reaction is due partly to the effect of the projections themselves, but mostly from the poisonous substance present in them. The other laryngeal foreign body was a piece of beefsteak too large to pass through the glottis.

B. *Food Passages*—In the oesophageal cases ten foreign bodies were found in the upper third, three in the middle third, and two in artificial strictures caused by typhoid and lye respectively.

IV. AGE OF PATIENTS

Trachea—Bronchi

1 year or under	2
1 to 2 years	10
2 to 3 years	6
4 years	2
5 years	2
7 years	1
10 years	1
	24

Oesophagus

1 year or under	1
1 to 2 years	2
2 to 3 years	4
3 to 4 years	2
5 years	1
14 years	1
17 years	1
19 years	1
28 years	1
50 years	1
	15

Larynx

14 years	1
19 years	2
36 years	1
	4

Trachea—Bronchi

2 years or under	11 or 47.8%
5 years or under	21 or 91 %
None over ten years	

Oesophagus

2 years or under	3 or 20%
5 years or under	10 or 67%
Adults	4

Larynx

14 years	1
Adults	3

Twenty-five of the forty-three cases here reported were three years of age or under. This, in a small way emphasizes the important point that the tender age of our patients adds greatly to the operative difficulties and risks in endoscopic work.

V. TYPE OF OPERATIVE PROCEDURE

A. Foreign Bodies in Air Passages

Upper bronchoscopy without tracheotomy	21
Lower bronchoscopy with tracheotomy	3
Tracheotomy following bronchoscopy	1

Here, the advisability or not of a preliminary tracheotomy enters the discussion. Especially where we are dealing with infants two or three years of age or under. Certainly some very good men insist that the only safe way to handle a bronchoscopic examination in an infant is with the aid of a preliminary tracheotomy. On the other hand we have our greatest authority, Jackson, disagreeing with this procedure. To quote from his writings:

> Tracheotomy for foreign body is no longer indicated either for the removal of the intruder or for the insertion of the bronchoscope. Tracheotomy may be urgently indicated for foreign body dyspnoea, but not for foreign body removal.

In our little series, cases 1, 2 and 3 seen in 1918, were handled with the aid of a preliminary tracheotomy. The twenty-one cases seen since that time were not. Of these twenty-one, eighteen were three years of age or under and of the eighteen, twelve were two years or under. Possibly the mortality record is our only justification for this procedure. In the twenty-four cases there were two deaths. One fatality occurred in the three cases of tracheotomy with low bronchoscopy; the other in the twenty-one cases of upper bronchoscopy without tracheotomy. We have found it necessary to do one tracheotomy following upper bronchoscopy because of dyspnoea. This happened in the last case reported in this series.

We feel that much valuable time is saved, surgical shock is minimized and convalescence is greatly aided by omitting the tracheotomy from a bronchoscopic procedure. Perhaps our future experience may cause us to change our ideas on this subject.

The length of time consumed certainly plays a great part in the success of these procedures. Prolonged examinations may be and often are, more fatal than the foreign body itself. It is very likely that several cases in this series, especially No. 5 and No. 31 are listed as favorable results rather than fatalities, mainly because the first examination was discontinued on a time schedule and the patient allowed to rest several days before further work was done.

VI. ANESTHESIA

	Ether	Chloroform	Cocaine	No Anesthetic
Bronchoscopy	13	1	1	9
Oesophagoscopy	6	..	4	5
Laryngoscopy	..	..	3	1
	19	1	8	15

Twelve of fifteen cases where no anesthesia was used were children under five years. Here again is an interesting topic for discussion. Some very good endoscopists insist that a general anesthetic is safest. Others say it is very dangerous. No less an authority than Jackson insists that no anesthetic at all should be used in children. He declares that it is not only unnecessary, but dangerous. It is taken for granted that every one agrees that cocaine should not be used in children. In our group of foreign body cases twenty-one were handled with a general anesthetic, eight with cocaine, and fifteen with no anesthesia. These fifteen include our later cases of infants and young children, and it is now our practice, and has been for several years to use no anesthetic in infants or young children. It has been almost three years since we have used a general anesthetic in an endoscopic procedure. Previous to this we chose a happy medium, using ether when we felt that the general condition of the child allowed it, and using no anesthetic when we felt it would be dangerous. Certainly where the dyspnoea is marked and the little patient must bring all muscles possible into play to keep breathing, a general anesthetic is almost sure to hasten a fatal issue by inhibiting the action of these extrinsic muscles.

Is it not likely that some may favor ether too often because of the fear that the struggling of the patient may hinder their work? Do we all weigh the dangers of a general anesthetic as carefully as we should? Certainly we should have but one thought in mind—what method promises most safety to the life of the patient? Of what

value is it to do an easy bronchoscopy on a quiet anesthetized child, removing the foreign body with little difficulty perhaps only to report the case later as a fatality? In the cases reported here, there were three (3) fatalities. Two where ether was used, and one where there was no anesthetic. We feel very sure that the mortality rate would have been much greater, if we had used a general anesthetic more often.

VII. RESULTS

	Cases	Recovery	Complications	Death
Bronchoscopy	24	22	1	2
Oesophagoscopy	15	14	2	1
Laryngoscopy	4	4	..	..
	43	40	3	3

A. *Bronchoscopies*—In this group, as is usually the case, there was but one of two results; death or uneventful recovery. There were two deaths among the twenty-four cases. Among the living the morbidity after a few days, or possibly a week, was very slight. One case, where a preliminary tracheotomy had been done, returned with dyspnoea, caused by granulations in the trachea in the site of the wound. In another case a tracheotomy was necessary to relieve dyspnoea eight hours following an upper bronchoscopy. In analyzing the two deaths, we find that case one, age two and one-half years, died about six hours after removal by lower bronchoscopy, through a tracheotomy wound, of a large portion of lima bean. Case 11, the other fatality, a child of eighteen months, died on the table, while upper bronchoscopy was being done to remove pieces of peanut. The patient was practically in extremis when first seen at the hospital, and died about two minutes after the examination was begun. The x-ray of the chest had been done a few hours previously, and showed a complete blur of the left chest, apparently a very marked case of drowned lung. The possibility of a foreign body in the case was not thought of until the child was practically dead. There was marked swelling of the mucosa of the trachea, and one piece of peanut was removed from the opening of the left bronchus.

B. *Oesophagoscopies*—Of the fifteen cases listed under this heading, fourteen recovered; one died four hours following a two stage examination. We feel sure that this fatality, case No. 22, might have been prevented by discontinuing the examination earlier than we did. It is very likely also, that the ether used in this case, played a part in hastening the fatal result. There was a coin in the oesophagus, apparently a penny or nickel, which seemed to disappear in a pouch in the oesophageal wall and be overridden by the oesophagoscope.

One case, No. 20, returned with a stricture of the oesophagus. The foreign body, a rectangular piece of brass, had been lodged in the oesophagus eight months previous to its removal. There was a marked ulceration of the oesophageal mucosa present at the time of the operation, and a stricture was expected. This stricture has been dilated at intervals during the past three years, and the patient is eating practically all types of food at the present time.

The reports of several of the interesting cases will follow:

Case No. 31—Zilda L., age five years. Peanut in bronchus nine weeks. Bronchoscopy. Recovery. January 29, 1924. Nine weeks ago while eating salted peanuts had a severe choking spell. Much difficulty in breathing immediately followed. The next day temperature 104, dyspnoea and cough. Physician diagnosed "pneumonia, left lung". After ten days in hospital, diagnosis of "empyema" was made, rib resected but no pus found. Patient continued to run septic temperature, had profuse night sweats and gradual loss of weight and strength. Was in bed in the hospital for five weeks. At the end of this period a diagnosis of tuberculosis was made, but was not confirmed by finding the organism. During these weeks no search for foreign body was made. Several x-rays of chest were taken, which were thought to rule out foreign body.

Examination—Patient very much emaciated, very shallow rapid respiration and cough. No expansion of the left chest, very feeble breath sounds over the left apex. No breath sounds over the rest of the left lung. Scar on left back indicating rib resection. Loud tubular breathing over all of right lung. Temperature 99, pulse 86, respiration 32, W. B. C. 21,000. X-ray of chest shows the left side affected, except for small area at the apex. During the first day patient refused all food and during the night perspired profusely. Cough kept the patient awake most of the night. On the morning of January 30, the day after admittance, upper bronchoscopy was done without anesthesia, No. 4 Jackson bronchoscope. In the left bronchus were several pieces of peanut, one quite large. While attempting to remove these there was a gush of thick fluid from the left bronchus. A quantity of this came out through the bronchoscope.

A suction catheter was introduced and considerable more purulent material was aspirated. There were a number of small pieces of peanut in the aspirated fluid. The examination was discontinued after ten minutes and patient returned to bed. There was practically no reaction following the bronchoscopy; in fact the dyspnoea was much less than before. The next day she began to eat, there were breath sounds over all the left lung, the cough was now loose and there was considerable expectoration. Patient improved very rapidly in every way and four days after the first bronchoscopy another upper bronchoscopy

without anesthesia was done; this time there was only thick mucous aspirated from the bronchus. There was no evidence of any foreign body and very little swelling of the mucosa of the bronchus or trachea. There was practically no reaction following this bronchoscopy and child improved rapidly each day. On February 6, temperature was normal, patient eating and sleeping well, no night sweats, breath sounds over all of the left lung, with some moist rales in base. February 7, patient up in wheel chair, temperature normal, appetite good, blood count 14,000. February 9, twelve days after entering hospital, patient was discharged with normal temperature, normal blood count, good expansion of the left chest, good breath sounds, only a few rales in left base. On February 23, two weeks after patient was discharged, a letter from the patient's mother said she was up and around each day and rapidly improving in weight and strength, had no cough and was eating and sleeping well. A few days ago, nine weeks after the first bronchoscopy, another letter from the mother and family physician stated that the child was apparently in normal health, her weight and strength had returned and she was playing and living normally. Physician reports normal breath sounds over entire left lung. A few pleural rubs in area where rib was resected.

Remarks—1. Definite history of aspiration of foreign body, still patient was treated as pneumonia, empyema and tuberculosis by four doctors over a period of nine weeks.

2. Rapid recovery after removal of foreign bodies and aspiration of mucous and pus.

3. Two bronchoscopic examinations four days apart with anesthesia. No reaction, general or local, but rather a rapid improvement.

Case No. 20—Winsom P., age three years. Metallic foreign body in oesophagus eight months.

History—May, 1919. First troubled, choking on solid food. Could swallow liquids well.

August, 1919. Child had lost weight and strength. More difficulty in swallowing. Treated for stomach trouble at this time.

October, 1919. Tonsils and adenoids removed because of difficulty in swallowing and loss of weight and strength.

Later—Patient developed difficulty in breathing and some cough. Treated for bronchitis, and asthma at this time. About four weeks ago, condition became rapidly worse, developed fever, sore throat, cough, dyspnoea, and had difficulty in swallowing even liquids. Was losing weight and strength rapidly. X-ray taken at time, practically eight months after the trouble began, showed a very definite metallic foreign body in the oesophagus. This x-ray was taken by the sixth doctor who had examined the patient. Foreign body had not been considered previous to this time, as a cause of the trouble.

Examination—Very emaciated, slightly cyanotic child about three years of age, rapid shallow respiration, cough, could swallow water with difficulty. Most of it regurgitating. Temperature 101.4, W.B.C. 26,000. Fair expansion each side chest, breath sounds fairly clear each lung. Moist rales at each base. X-ray shows large rectangular metallic foreign body in the oesophagus at the level of the cricoid.

Operation—Without anesthesia. Patient was examined with Jackson laryngoscope. Much swelling and ulceration of mucosa upper end of oesophagus. Epiglottis swollen and larynx pushed forward. Foreign body located in the ulcerated tissues and removed with heavy forceps with difficulty. Some bleeding from the necrotic tissues. Foreign body apparently piece of brass, about 3½ c.m. in length, and 2 to 2½ in width.

Progress—Patient remained in hospital from December 24, 1919, to January 6, 1920. At this time dyspnoea entirely gone. Eating soft diet easily. Has increased rapidly in weight and strength. No cough. Advised to return in two weeks for observation for possible stricture. Returned instead in three months, with difficulty in swallowing semi-solid food. Stricture was found as had been expected. Was dilated with bougies. This stricture has been dilated at intervals since, several times with the heated oesophageal bougie. At present time child eating all types of food without difficulty.

Remarks—Child had difficulty in swallowing for eight months. Diagnosis of stomach trouble, diseased tonsils and adenoids, asthma and bronchitis. No search for foreign body made, not even an x-ray during these months.

Case No. 38—Edward P., age two years. Foreign body—history and symptoms. Post-mortem findings lung abscess and tubular bronchial glands.

History—October 6, 1924. Three days ago patient found choking with several pieces of hazel nut in the mouth. Had been apparently in normal health previous to this. Since the choking spell has had labored respiration, considerable cough and wheezing. Slightly cyanotic at times.

Examination—Temperature 101. Patient very restless. Fighting and crying so that careful examination was impossible. Limited expansion of left chest, moist rales over each lung, more marked over left, loud tubular breathing over entire right lung. Decrease in breath sounds over left lung. Under fluoroscopic examination there was limited expansion of left chest and some clouding of the lower lobe of the left lung. Lower lobe left lung appeared atalectatic. Upper bronchoscopy No. 4 Jackson bronchoscope. Much thick mucous in trachea. Mucosa greatly swollen and reddened at the opening of the left bronchus. No foreign body found. Suction catheter used through bronchoscope to remove secretions. Examination discontinued after ten minutes. About two hours after the examination, dyspnoea became more marked, and some cyanosis. Tracheotomy was done four hours following upper bronchoscopy to relieve dyspnoea. Bronchoscope passed through tracheotomy wound. More mucous aspirated. No foreign body found. Culture taken. Next

day, patient's condition much improved. Less dyspnoea. No cyanosis. Suction catheter used through tracheotomy tube to remove mucous. Condition rapidly improved with an uneventful course. Tracheotomy tube removed on the sixth day. Breath sounds clear each lung, expansion good, general condition good. Discharged from hospital.

Culture Report—Streptococci.

Progress—Was home two weeks, apparently in very good health, with no difficulty in breathing, no cough. Then developed apparently a severe cold with cough and fever. Has been losing weight and strength during these past two weeks. For the past two days marked difficulty in breathing and high temperature with shallow cough.

Examination—November 22, 1924. Seven weeks after first admission, child quite well nourished; acutely ill. Rapid shallow respiration. Hoarse cry. Some cough. Limited expansion lower right chest. Marked dullness to percussion over right base. Breath sounds faint over right base with moist rales. Loud tubular breathing left lung.

Fluoroscopy—Shadow over lower right lung. Left lung clear.

X-ray—Lower half right lung consolidated, extending to fourth rib anteriorly. Upper border shadow straight, which does not indicate fluid. Heart displaced slightly to left. W.B.C. 21,800. Upper bronchoscopy No. 4 Jackson without anesthesia. Much thick purulent discharge in trachea with very foul odor; removed with suction catheter. Specimen taken for culture. Bronchoscope passed into right bronchus. The purulent discharge was coming from this bronchus. No foreign body found. Next day breathing much better. Taking nourishment well. No cyanosis. Report from the laboratory on the culture taken the day before showed streptococci and staphylococci. The second day breathing became labored. Again bronchoscope was passed and much thick muco pus removed with suction catheter. During the next two or three days condition became gradually worse. Rapid weak pulse, high intermittent fever; shallow respiration and some cyanosis. Died on the fourth day after admission.

Post-Mortem—Practically the entire right lower lobe was an abscess cavity, filled with thick pus. Several smaller abscesses in the upper part of right lung. A few small fibrous areas in the left lung. No abscess cavities in left lung. Some adhesions of lung to pleura. Bronchial glands caseous. Some caseous areas in spleen, liver and both kidneys.

Pathological Report—Multiple lung abscesses right lung. Organism streptococci. Caseous bronchial lymph glands tuberculous. Tubercles in spleen, liver and kidneys. Left lung negative except for some small fibrous areas.

Remarks—1. Definite foreign body history and symptoms in a child whose health had been apparently normal previously.

2. After removal of secretions from trachea and bronchi, though no foreign body was found, patient made an uneventful recovery and both lungs were clear when he was discharged from the hospital.

3. Patient apparently in normal health at home for two weeks. Then developed respiratory symptoms, greatly resembling those that were present previously. Examination, four weeks following first admission: No foreign body, but thick pus from the opposite lung than was effected previously.

4. Post-mortem—Left lung entirely clear, except for a few adhesions to pleura. This lung was the site of trouble at first admission and right lung was clear at that time. Right lung filled with abscesses. At previous admission it was clear. Tuberculous bronchial lymph glands and nodules in spleen and liver, accompanying the lung abscess.

A STUDY OF THE NERVOUS SYSTEM WITH A VIEW TO UNDERSTANDING OTITIC PAIN*

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A few words in review of the nervous system might help us to a better understanding of the subject in hand.

The neuron or nerve cell with its prolongations, extending from skin, ear, nose, mouth and all peripheral territory to the brain, makes up the afferent or sensory portion of the nervous system.

The neurons with their prolongations to the muscle cells and other organs activated by the nerves, having their origin in the brain, make up the efferent nervous system.

The neurons which have both their origin and terminus within the brain, connecting the afferent with the efferent and functioning either as afferent or efferent, are known as the internuncial neurons.

These three classes of neurons compose the nervous system and govern action, memory, thought, volition, affection, emotion and all that constitutes individuality or personality.

The sense organs, which are mostly composed of whole groups of peripheral afferent neurons, are called receptors.

The central ends of the afferent neurons, the internuncial neurons and the central ends of the efferent neurons, are called the adjustors or the second class of the neuromuscular mechanism.

In man this second portion of the neuromuscular mechanism includes the brain, spinal cord and sympathetic system.

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The muscles, glands, electric organs and the like, upon which the nervous system acts—producing reactions in accordance with the environment—composes the third and last portion of the neuromuscular mechanism, and are called the effectors.

Viewing the nervous system developmentally—we see that the sponge has effectors but no receptors nor adjustors. In other words it has no special sense organs and no central nervous system.

The sea-anemonies have receptors and effectors but no adjustors—or, again, they have sense organs of a primitive type which diffuse themselves throughout the entire body and activate the entire body, but there is no central nervous system. The angle worm has the rudiments of all three—receptors, adjustors and effectors. Higher in the scale these are more definitely developed until in man these three divisions of the neuromuscular system have reached their highest development. And as a result he reacts to every conceivable environment. In lower vertebrates there are some special senses more highly developed than in man—as for example—the olfactory sense, since the olfactory lobe has been sacrificed in man by the larger development of the neopallium.

The pain sense organs are found in the fine nerve filaments which terminate between the epithelial cells in the skin and mucous membrane. This is probably true throughout the body and is especially true of the drum membrane.

There are three types of pain: somatic, visceral or autonomic and psychic.

In the somatic, the special sense organs at the periphery receive the stimuli—as for example, pressure—and these stimuli are conducted along special nerves through the posterior nerve roots; if spinal, to the optic thalmus which is the pain center. It is the cerebrum, however, which recognizes pain always.

Or the stimuli are conducted along special nerves, if cranial—to the ganglia outside the brain, and through the prolongations from the ganglia to the deep centers in the brain.

An example of somatic pain would be found in pain transmitted along the sensory branches of the fifth, directly communicating with the brain through the Gasserian ganglion.

Visceral or autonomic pain is caused more particularly by tension on the periphery of the viscera—transmitted to the posterior root ganglia of the cord and then to the optic thalmus—but is often not recognized by the cerebrum as being located at the site of the stimulus; but rather, according to the distribution of the somatic ganglia of the cord. Thus the cerebrum may not recognize pain as being located in the appendix or gall-bladder, but rather according to the distribution of the ganglia of the posterior root into which the somatic nerves center.

The appendix pain may be distributed through the upper abdomen, and the gall-bladder pain below the scapula.

As otologists it is not well understood just how much we may have to contend with autonomic pain. The pharynx and eustachian are visceral in origin, and there is a communication of sympathetic nerves through the second and third cervical ganglia by way of the great deep petrosal which is the sympathetic branch of the spheno-palatine ganglion and the great superficial petrosal of the facial, sensory branch.

We do, however, often come into contact with psychic pain. Psychic pain has its origin in the brain. There are no peripheral stimuli. To the patient there is pain, for example, in the sensory branches of the fifth or ninth or vagus. There is no pathology along the course of these nerves—its origin is purely central and not existent in fact.

That there is a vast network of sensory and autonomic nerves which center about and furnish sensation to the ear region—there is no doubt.

It is too complicated to be fully understood. But the larger the knowledge of the distribution that we, as otologists, have, the more satisfaction in the tracing of the origin of these often hidden pain sources, and the consequent opportunity of satisfactory treatment.

As you will recall—a portion of the first division of the fifth and probably all of the second and third divisions are sensory.

You will also recall that the second largest nerve ganglion, the spheno-palatine, has two sensory nerve roots from the second division of the fifth. It also has a sensory nerve root from the sensory branch of the facial through the geniculate ganglion.

The geniculate ganglion is located on the medial side of the tympanic cavity at the first bend of the facial nerve.

From the third division of the fifth is the auriculotemporal branch, a sensory nerve leading to the region of the ear.

The spheno-palatine ganglion also has a sympathetic root—the great deep petrosal—that joins with the great superficial petrosal, which is the facial sensory branch, and these two make up the Vidian nerve entering the ganglion and also sending a branch to the ear.

The ninth, or glossopharyngeal, nerve gives off a tympanic branch.

The vagus has an auricular branch.

The great auricular and the small occipital nerves supply sensation to the posterior ear region.

The sympathetic fibres of the second and third cervical ganglia communicate with the otitic and the spheno-palatine ganglia.

Ganglia

The ganglia which surround this region and communicate with the ear are: spheno-palatine on the fifth, geniculate on the sympathetic and facial, petrous on the glossopharyngeal, jugular on the vagus—and the superior cervical ganglia of the second and third sympathetic.

Thus it is to be seen that the anterior half of the auricle and the superior and anterior walls of the external auditary canal are supplied by the auriculo-temporal branch of the third division of the fifth.

The great auricular and the small occipital from the second and third cervical ganglia supply the posterior surface of the auricle and external mastoid. The vagus supplies the inferior posterior external meatus with sensation through its auricular branch. The auriculo-temporal from the fifth supplies the anterior half of the external drum while the posterior half is supplied by the auricular branch of the vagus. The tympanic branch of the glossopharyngeal supplies the inner drum with sensation, and it, also, supplies the internal mastoid.

The tympanic plexus—which is composed of the tympanic branch of the glossopharyngeal, a sympathetic and a branch from the facial—supplies the middle ear with sensation.

Considering the vast distribution of the trifacial, glossopharyngeal, facial, vagus and sympathetics—all communicating, through the various ganglia, with the ear region—it often demands very definite knowledge, of the otologist, to locate the source of the pain.

But a pain in front of the ear would point to some disturbance of the fifth. Since the inferior dental belongs to the third division of the fifth, it would be necessary in a case of pain of the drum or the anterior half of the ear or in front of the ear proper, to look carefully at the lower teeth, providing of course, that no pathology could be seen in the drum or canal.

The glossopharyngeal has a tympanic branch, and the glossopharyngeal is the sensory nerve of the posterior tongue, to the tonsil and pharynx.

Therefore pain in the middle ear, or in the mastoid, where there is no middle ear or mastoid pathology—may have its origin in an ulcer of the tongue, stone in Wharton's duct, posterior pharyngeal abscess or infected tonsil.

The lingual is a branch of the third division of the fifth, and supplies the anterior half of the tongue. Ulcer or cancer of this portion of tongue may cause pain in the anterior ear region through the auriculo-temporal, either in the canal, drum or in front of ear.

The second division of the fifth, through the spheno-palatine ganglion, furnishes sensation to the turbinals, anterior and posterior ethmoids, part of the sphenoid, septum and palate.

With this vast distribution and the communication of the spheno-palatine ganglion, by way of the sensory branch of the facial, with the acoustic, otitic ganglia, cervical sympathetic, the vagus and the glossopharyngeal—it is easy to surmise what pains may be engendered in the ear region by diseased processes along the course of any of these nerves.

The superior laryngeal branch of the vagus supplies the larynx with sensation. The vagus, through its jugular ganglion, and auricular branch, connects up with the drum. So, it may be, that cancer or tuberculosis in the larynx may cause pain in the ear.

Caries of the cervical vertebræ or any impingement on the great auricular or small occipital, in the cervical region, might transfer the pain to the posterior ear.

Any involvement of the ganglia, such as the otitic, jugular, superior cervical or geniculate, may cause herpes in the region supplied and give pain in the ear territory.

I am not touching upon acute pathology in the tube, ear, mastoid or brain. These are generally sufficiently definite in appearance with changes in structure, that upon examination of the ear, with the history, that a diagnosis is made.

But these distant pains are not so easy to locate as to the source. And, again, I wish to reiterate, that a definite knowledge of the sensory and sympathetic nerve supply is the only hope that the otologist may have of making a diagnosis.

HOSPITALS FOR PERSONS OF MODERATE MEANS

At the recent conference of the British Hospital Association, it was pointed out that an increasingly large number of persons of moderate means are finding it more difficult to secure the advantages of recent advances in medicine on account of the expense, and that large numbers of the middle classes are forced to seek treatment in voluntary hospitals with the result that waiting lists obtain inordinate dimensions.

Among the suggestions proposed for the relief of this condition is the extension of hospital wards to paying patients.

DIATHERMY IN TYPES OF FAULTY HEARING

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Plus temperature, artificially induced by diathermy, in new-formed, partially organized, tympanic catarrhal exudate, with or without possible slight calcareous deposit, will probably exert a more favorable influence toward absorption of exudate and stimulation of function than any other single measure at our command.

This influence will be all the more favorable if there be created a slightly acid saturation of this new-formed tissue or more properly speaking, if the parts involved, be bathed in slightly acid media, and, too, if the plus temperature be maintained at the maximum safely attainable for twenty or twenty-five minutes.

Any method of attack upon the pathology involved should embrace within the influence of the therapy applied, all the structures in any way impaired.

In faulty hearing or in head noises, a core of tissue embracing the tympanic and labyrinthine structures and the eustachian tubes is included directly in the path of any currents we may be using, through the extra-aural and meatal electrodes.

Every one has treated exudative middle ear catarrh when, through the translucent tympanic membrane, could be seen the cloudy fluid partially filling the middle ear.

If not removed, this more or less abundant secretion is absorbed, leaving upon the edematous tympanic lining membrane additional precipitate which, with each succeeding attack, interferes more and more with the hearing and inaugurates a tinnitus of persistent type and of marked degree.

Tubal constriction or collapse is all too common and the lymphoid tissue about the mouth and along the walls of the tubes is a constant menace to the hearing, not evidenced alone at or immediately subsequent to the catarrhal attack, but during later years as well.

The edema of the tympanic membrane, with round cell infiltration and subsequent atrophy; the band like adhesions which more or less securely anchor the ossicles and limit the oscillations of the drumhead; the occlusion of the oval window with fixation of the foot plate of the stirrup; the ankylosis of ossicular articulations; for all these, properly applied diathermy offers the best possible help in the best possible way.

Catarrhal deafness is much more common and oto-sclerosis is much less so, than was formerly believed and tinnitus is an all-too-frequent manifestation of both these conditions. Nor do we so commonly find cases of distinctly the one condition or distinctly the other, as was formerly presumed to exist. In quite a percentage of those applying for relief, the one ailment is found coexistent with the other, and in many of these, where mild otosclerosis is definitely diagnosed, diathermy with other treatment is still permissible to non-suppurative chronic catarrh.

It must be remembered, too, that in course of regular daily treatments it is not rare to have a patient, several hours subsequent to a treatment, complain of a pronounced aggravation, after six or ten treatments have been received and especially is this likely to follow, if the treatment with the extra-aural electrode be prolonged beyond twenty minutes, or with the meatal electrode alone, still continued beyond the five minutes.

This exacerbation however need cause no concern as it is always followed by more marked improvement at the end of forty-eight hours and calls only for less frequent or possibly less intense treatments for a short time.

Case No. 1—Charles O. age sixty-two, had been annoyed with tinnitus for forty years and his hearing began to fail at about the time the tinnitus began, both more noticeable in left ear. Both membranes slightly thick and cloudy, with mild retraction. Unable to hear watch either ear, firm contact. Right ear—C Fork, Rinne +. Left ear—C Fork, Rinne—. Right ear—C Fork, Rinne neutral. Left ear—C Fork, Rinne—. Right ear—C2 Fork, Rinne—. Left ear—C2 Fork, Rinne—. C4 Fork, both ears Rinne—. Gaulton right ear 2.3 to 5.5. Left ear 1.2 down. Low tones lost in left. Prognosis, mild improvement probable in right ear, no improvement in left ear.

Prescription. Diathermy, extra-aural and meatal electrodes, 400 milliamperes for twenty minutes, followed by meatal only at maximum of tolerance for five minutes and by surging sinusoidal at comfortable tolerance for two minutes. Daily treatments.

Twenty-four hours after the sixth treatment patient complained of much stuffiness in the ears and general aggravation of all symptoms; much discouraged. Forty-eight hours later right ear hears watch light contact first time in four years, left ear hears watch firm contact first time in twenty years. Hears clock next room. Voices much better. Tinnitus much less.

This case is cited to show a fairly common aggravation which may result in any instance of maximum dosage or maximum frequency, and that this exacerbation need cause no concern.

On beginning treatments it should be explained to a patient that maximum dosage following any seance may result in a temporary exacerbation; nevertheless maximum dosage, clearly within the borderline of safety, is certainly desirable.

A transient vertigo may follow treatment in any case, wherein the extra-aural and meatal electrodes are in circuit beyond the maximum of twenty minutes or wherein the maximum of 450 milliamperes has been exceeded.

Case No. 2—Mr. R. H., a physically fit man of forty, had received two previous treatments with no annoyance resulting. The amperage was raised to 450. After fifteen minutes he complained of slight vertigo, which passed only after twenty minutes lying down.

This vertigo has been observed to effect equally the middle aged and the elderly, the strong and the less vigorous, but it has never been observed to continue beyond a time when the thermic saturation of the parts would be presumed to have somewhat receded.

The core of tissue which lies directly within the path of current passing between the extra-aural electrodes embraces the entire receiving apparatus concerned in the sense of hearing.

The external meatus, the middle ear, the inner ear and the eustachian tubes all receive the full measure of thermic saturation resulting from tissue resistance to the passing current, and this plus temperature is retained until by convective leakage into proximal tissues and absorption through the stimulated blood stream it is slowly reduced toward the normal.

In no instance has later annoyance resulted from this transient vertigo and in no instance, during subsequent treatments has it recurred, when the amperage has been kept below the maximum of 450 and the duration of the treatment within the maximum time of twenty minutes with both the extra-aural and meatal electrodes in position and five minutes for the meatal only.

Borderline cases wherein there is very definitely middle ear catarrhal deafness and at the same time where there is very probably some otosclerosis, have in many instances shown improvement in so far as the impairment would be regarded as having resulted from the otic catarrh. The tinnitus, too, almost always recedes coincident with the deafness; and patients seem quite as appreciative of relief from the one as from the other.

Case No. 3—March 6th, John T., age forty-nine, reported having had persistent tinnitus for three months. During some years has had some tinnitus following colds. Faulty hearing recent years. Low tones less easily distinguished. Right ear hears watch 22 inches, left ear hears watch 3 inches. C Fork right ear Rinne —. Left ear Rinne —. C2 right ear Rinne +. Left ear Rinne +, all high forks shortened both air and bone. Gaulton full in right. 0.7 in left. Treatments prescribed; at first daily, after one week every second day, after two weeks every third day, but at no time regularly administered.

April 5th, reported improvement in hearing, no tinnitus, right ear hears watch 36 inches, left ear hears watch 22 inches. No annoyance from low voices. Treatments discontinued.

Whether or not further improvement in hearing would have resulted from continued treatments, one can not say. For this case regular daily treatments were prescribed but could not be followed up.

In all treatments it is to be understood that both the extra-aural and meatal electrodes are in circuit for twenty minutes with four hundred milliamperes of current running. The extra-aural electrodes are then removed and approximately 100 milliamperes pass through the meatal electrodes for five minutes. The surging sinusoidal at comfortable tolerance through the meatal electrodes then follows for two minutes.

We have a firm conviction, that diathermy is a very helpful measure in cases of impaired hearing, resulting from any one or more of the forms of middle ear or tubal catarrah, and experience justifies that conviction. Of the considerable number of cases treated, one will here serve to illustrate.

Case No. 4—May 22, 1924. Mrs. G. B., age fifty-five, complained of puffing, purring sounds both ears. Mild deafness. Ossicular movements restricted. Membranes somewhat thick and retracted. Right ear hears watch 20 inches. Left ear hears watch 6 inches. C Fork right ear 35/60 air, 20/60 bone. Left ear 20/60 air, 20/60 bone. C2 Fork right ear 20/50 air, 10/50 bone. Left ear 15/50 air, 10/50 bone. C4 right ear 8/15 air, 0/15 bone. Left ear 6/15 air, 0/15 bone. Gaulton right ear full, left ear full. June 19, 1924, tinnitus much less; hearing not noted. July 13, 1924, no tinnitus for week, ears feel better in every way. July 23, 1924, tinnitus slightly noticeable but not annoying. Right ear hears watch 20 inches, left ear hears watch 14 inches. July 30, 1924, occasional tinnitus as though escape of steam. October 21, 1924, has treatments only occasionally. Right ear hears watch 28 inches, left ear hears watch 20 inches. No tinnitus for three weeks. This purely catarrhal impairment, if treated regularly should have shown more improvement in the hearing.

In the opinion of the writer, any technic depending alone upon contact with only the meatal walls must prove ineffective; especially will this be true should the contact to the ear be unipolar, the indifferent contact being placed in the hands or elsewhere upon the body. The anatomical arrangement of the essential structures placed somewhat distant from such limited meatal contact must convince one that such must be the case; and the placing of the index finger tips in

the outer canals with the two contacts fixed in the palms of the hand is of course even less effective if in reality it possesses any merit at all.

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FURTHER OBSERVATIONS ON THE CLASSIFICATION OF CARDIAC DIAGNOSIS*†

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A paper was published by us in 1921 describing a method of cardiac diagnosis which had proved very practical and helpful in the analysis of patients seen in the cardiac clinic of the Massachusetts General Hospital.[1] Other physicians agreed as to its worth in the clinical study of patients with heart disease. Since publication of the original paper certain advances have been made in the study of cardiac disease, and therefore, it has seemed advisable to revise the classification and to embody in this revision the most pertinent features of the recent contributions. In addition to our own experience, we are indebted to the writings of Mackenzie, Lewis, Cabot, St. Lawrence, Libman, and certain publications from the New York Heart Association. The original form published in 1921 was used by the New York Heart Association as a standard for diagnosis in their clinical charts. Before the publication of our paper Dr. Wyckoff at the Bellevue Hospital Cardiac Clinic in New York had been using a similar method of classification of cardiac diagnosis.

This classification has been found useful not only to specialists and in cardiac clinics but also to the busy general practitioner. With the patient before him the diagnosis will be simplified if the physician will think in the terms herein discussed. He will find that the older ambiguous terms used in cardiac diagnosis will be displaced by those which are more rational and clear.

According to the present conception every complete cardiac diagnosis should include three features. They are first, etiology; second, structural change; and third, the functional condition of the heart. To secure a clear conception of any given case one must determine and state all three features. In this paper we shall give only an outline of the classification. Those who desire to consult a more complete discussion of the subject are referred to our article in an early issue of the new American Heart Journal.[2]

1. ETIOLOGY

1. Congenital heart disease.
2. "Rheumatic" type of heart disease, resulting from:
   - (1) Tonsillitis.
   - (2) Chorea.
   - (3) Rheumatic fever.
   - (4) Scarlet fever.[3]

A. Active.
B. Inactive.

3. Bacterial endocarditis, due to invasion by known organisms.
   - (1) Pneumococcus.
   - (2) Meningococcus.
   - (3) Staphylococcus, aureus or albus.
   - (4) Streptococcus hemolyticus.
   - (5) Influenza bacillus.
   - (6) Gonococcus.
   - (7) Streptococcus viridans.

These kinds of bacterial endocarditis have been grouped sometimes in the past as "malignant endocarditis".

4. Diphtheritic heart disease, usually rapidly fatal.
5. Syphilitic heart disease and aortitis, varying in frequency considerably in different parts of the world and in different groups in society.
6. Other rare types of infectious heart disease, as with the tubercle bacillus and the echinococcus.
7. Thyroid heart disease.

A. Hyperthyroidism resulting eventually in cardiac enlargement, often auricular fibrillation and failure of the congestive type.

B. Hypothyroidism, attended in myxedema by sluggish cardiac action. Fahr[4] states that in myxedema there are certain characteristic changes in the heart justifying the establishment of a "myxedema" type of heart disease. However, Willius and Haines[5] in a study of 162 cases of high grade myxedema state that "none of heart failure and none of organic cardiovascular disease was found that could be justly attributed to the myxedema. There were numerous electrocardiographic abnormalities which disappeared under thyroid medication. The data presented does not justify the establishment of a cardiac syndrome characteristic of myxedema". The type of heart trouble due to hypothyroidism should be considered as a temporary group, further investigation being necessary before accepting or discarding it.

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†From the Cardiac Clinic of the Des Moines Health Center and the Cardiac Clinic of the Massachusetts General Hospital.

*Read before the American Heart Association, Atlantic City, New Jersey, May 26, 1925.

1. J. A. M. A., vol. lxxvii, p. 1414, October 29, 1921.

2. Published by C. V. Mosby, St. Louis. First number, October, 1925.

3. It is possible that further investigation of heart disease resulting from scarlet fever (soon to be undertaken by us) may occasion a separate etiological type of "the scarlet fever heart".

4. Fahr, George—Myxedema Heart, J. A. M. A., vol. lxxxiv, pp. 345-349, January 31, 1925.

5. Willius, F. A. and Haines, Samuel F.—The Status of the Heart in Myxedema. Read before the American Heart Association, Atlantic City, New Jersey, May 26, 1925.

8. Toxic heart conditions as from metallic poisons and uremia, and possibly including the heart made irritable by tobacco, coffee and absorption from local infections such as chronic cholecystitis.

9. Hypertensive heart disease, the result of either "essential hypertension" or of nephritis, much more commonly the former.

10. Emphysema heart, with special strain on the right ventricle.

11. Arteriosclerotic heart disease, or the senile heart or cardiosclerosis, which is the commonest etiologic type of all.

12. Angina pectoris, the cause of which is unknown though the condition itself is usually regarded as a symptom due to some disturbance of function. It is a distinct entity not necessarily associated with aortic or coronary sclerosis.

13. Coronary occlusion due to thrombosis or embolism, also a distinct entity often associated with coronary sclerosis, and causing infarction.

14. The heart is severe anemia, usually with dilatation and various murmurs.

15. The nervous heart, or cardiac neurosis, or the irritable heart of soldiers. This includes "effort syndrome" or "neurocirculatory asthenia", a condition which occurs frequently during convalescence from acute infectious diseases, operations and accidents.

16. Traumatic heart lesions—of valves or of auricular or ventricular walls or of aorta—the results of penetrating wounds, crushes, blows or great strain.

17. Cardiac tumors, primary or secondary.

18. Other rare etiologic types such as the "athlete's" heart, a doubtful entity, generally consisting of "effort syndrome" but rarely of slight cardiac hypertrophy from certain excessive athletic exercise like professional ski-racing or bicycle racing; the "beer heart", and the heart in obesity (an uncertain entity).

19. Unknown. If the cause of heart disease in a given case cannot be determined it should be so expressed for two reasons: first, in order to stimulate further study and longer observation of the patient, and second, to stimulate further investigation of heart disease generally.

The most common etiologic types are the arteriosclerotic, the hypertensive, the "rheumatic", and the syphilitic, but heart trouble due to the "nervous heart" is the commonest disturbance of all.

II. Structural Change

Probably this, the second portion of the diagnosis, will be the first to become clear to the examiner since many structural changes are readily recognized. Oftentimes one cannot be clear as to the etiology until after determination of the type of valve impairment or of the size and shape of the heart.

1. Myocardial. It should be clearly understood that myocardial pathology, whether actual myocarditis (which is relatively rare) or myocardial hypertrophy or atrophy (which are common) is included in this classification in the etiologic type. When the etiologic type of heart disease is stated the myocardial change associated with the type may be taken for granted although the degree of involvement varies greatly.

2. Endocardial. The only portion of the endocardium giving evidence of damage clinically is the valvular endocardium. Therefore, clinical diagnosis of endocardial pathology has perforce to be limited to valve changes.

A. Mitral regurgitation with or without clinical stenosis. This does not mean functional mitral regurgitation.

B. Mitral stenosis, with or without clinical regurgitation.

C. Tricuspid regurgitation with or without clinical stenosis. This does not mean a functional tricuspid leak.

D. Tricuspid stenosis, with or without clinical regurgitation.

E. Aortic regurgitation, with or without stenosis.

F. Aortic stenosis, with or without clinically demonstrable regurgitation.

G. Pulmonary regurgitation.

H. Pulmonary stenosis.

3. Pericardial.

A. Acute fibrinous pericarditis.

B. Pericardial effusion: (a) serofibrinous: (b) purulent, and (c) hydropericardium.

C. Adhesive pericarditis.

D. Pneumopericardium.

4. Cardiac size and position.

A. Enlargement, usually meaning both hypertrophy and dilatation, the exact amount of each being usually indeterminable.

B. Right or left ventricular preponderance; either the left or the right ventricle may be relatively more enlarged than the other. Roentgen-ray evidence is often helpful, but electrocardiograms may be needed to demonstrate this condition by the finding of abnormal axis deviation.

C. Auricular enlargement, sometimes evident by roentgen-ray or by electrocardiogram.

D. Dextrocardia.

5. Coronary vessels.

A. Sclerosis.

B. Embolism.

C. Thrombosis.

6. Cardiac chambers. Rare congenital abnormalities such as the heart with two auricles and one ventricle, two ventricles and one auricle, or one auricle and one ventricle.

7. Septal defects.

A. Interventricular foramen.

B. Foramen ovale.

8. Great vessels.

A. Aortic dilatation: (a) general; (b) saccular aneurysm.

B. Pulmonary artery dilatation.

C. Patent ductus arteriosus.

D. Coarctation of aorta.

E. Dextroposition of aorta.

F. Transposition of aorta and pulmonary artery (and other rare congenital defects).

III. Functional Condition

1. Heart failure.

A. Congestive type, as expressed by dyspnea, edema, cyanosis, engorgement of neck veins, cardiac dilatation, functional mitral and tricuspid regurgitation, and so on. This, of course, may be of any degree.

B. Anginal type, already listed under etiology. It is expressed by paroxysmal heart pain.

An additional functional grouping such as that suggested by the New York Association of Cardiac Clinics is also very useful. It expresses directly the ability to work as follows:

A. Able to carry on the patient's usual activities.

B. Able to carry on slightly to moderately curtailed activity.

C. Able to carry on only greatly diminished activity.

D. Unable to carry on any activity (without distress).

2. Disordered heart action.

A. Sinus irregularities, like gross sinus arrhythmia.

B. Premature contractions (extrasystoles); (a) auricular, (b) ventricular and (c) junctional.

C. Paroxysmal tachycardia: (a) auricular, (b) ventricular, and (c) junctional.

D. Auricular flutter.

E. Auricular fibrillation.

F. Heart block: (a) auriculoventricular; (b) intraventricular, including complete and partial bundle branch block and arborization block; and (c) sinoauricular, including auricular standstill.

G. Atrioventricular rhythm and ventricular escape.

H. Pulsus alternans.

Illustrations

To illustrate this classification and to show how satisfactory it proves to be in an analysis of a cardiac patient the following diagnoses are added:

Case 1. Rheumatic heart disease (inactive) with mitral stenosis (right ventricular preponderance), auricular fibrillation and failure of the congestive type (able to carry on only greatly diminished activity).

Case 2. Arteriosclerotic and hypertensive heart disease with cardiac enlargement, ventricular premature beats, pulsus alternans, and failure of the anginal type (unable to carry on any activity).

Case 3. Cardiac enlargement and auricular flutter, of unknown cause (able to carry on slightly curtailed activity).

Case 4. Syphilitic heart disease with aortitis, aneurysm of ascending aorta, aortic regurgitation (left ventricular preponderance, and normal rhythm), (able to carry on moderately diminished activity).

Conclusion

Every cardiac diagnosis should include three features: first, the cause, or etiology; second, structural change or changes; and third, the functional ability of the heart. All three are essential.

GOITER*

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The invitation to attend this meeting of the Inter-State Post-Graduate Assembly is a compliment which I highly appreciate.

In view of the fact that the goiter situation was recently discussed at the Bloomington meeting of the American Association for the Study of Goiter, it may seem presumptuous for me to bring the subject to your attention, but it is probable that many of your members were not present at that meeting and have not had the opportunity to read the papers.

If one will visualize a map of North America and go back thousands of years to the ice age, he will see that the entire northern three-fourths of it was covered by an ice sheet. Parenthetically, two stages of the glacial period are called the earlier and the later Wisconsin stages, and this city of Milwaukee rests upon soil that was covered for at least twenty thousand years by ice. As a consequence of the prolonged melting of the ice the soil was washed for a long time and the highly soluble iodides were leached out and carried to the ocean.

Now, a map showing the distribution of endemic goiter for the United States presents a striking correspondence to the ice sheet. The same is true of Europe and will probably be found also in Asia, when it has been thoroughly studied. The evidence that iodin deficiency is a prime factor in the causation of endemic goiter

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seems beyond dispute, so much so that it is the duty of every afflicted community to supply iodin in some form to children. Consider the estimate that Lake Superior is so poor in iodin that it would take a person a thousand years to drink enough of its water to acquire as much iodin as the thyroid contains. I am fairly familiar with the measures that are being taken in some communities in the United States and in Switzerland toward supplying iodin to children. This work should be encouraged and extended, for it seems probable that endemic goiter can be stamped out just as effectively as typhoid fever. It is indeed surprising that the ancients should have stumbled upon burnt sponge as a remedy for goiter. Of the various sea flora and fauna which have been analyzed, sea sponge contains more iodin than any of them. Had burnt sponge been used as a preventive measure through all these years, it is reasonable to suppose that goiter would now be a rare disease. So far as exophthalmic goiter is concerned, I look upon it as a cousin of ordinary goiter, and whether the incidence of it will be materially lessened by the administration of iodin in childhood, remains to be seen.

Adolescent goiter is a simple physiologic hypertrophy of the thyroid, responding to iodin therapy. When neglected it may go on to the colloid, the adenomatous or the hyperplastic type.

The most common type of goiter demanding surgery is the adenomatous which is seldom found outside of goiter districts. We usually speak of adenomas as toxic or non-toxic, but potentially they are all toxic. I think it safe to say that, given sufficient time, at least 95 per cent of adenomas will produce toxic symptoms, primarily affecting the sympathetic nervous system and secondarily the heart and other organs. The secretion from adenomas differs from that of the normal thyroid and is probably never physiologic in action but pathologic. Adenomas are simply encapsulated tumors without any useful function. As evidence of this statement, I submit the following: (1) It is not uncommon to find cretinism or myxedema in individuals with adenomas, but without thyroid gland. (2) Toxic adenomas never produce exophthalmos—when that symptom is present with adenomas you may be sure that areas of hyperplasia of the thyroid gland itself will also be found. (3) By employing a complement fixation test, Shepardson has shown that the secretion of adenomas differs from that of the normal thyroid. A brief statement regarding this reaction appeared in the Journal of the American Medical Association, 1923, vol. lxxxi, page 1435, and the completed data are soon to be published.

Adenomas are very prone to degenerative changes, particularly cystic, fibrous and calcifying. These degenerations follow hemorrhages within the capsule of the adenoma, due, as shown by Delamere and myself, to the peculiarities of the blood-vessels. It was found that both the arteries and veins lose their adventitia immediately after penetrating the capsule and that the muscular and inner elastic coats became thinner. The arteries were found capable of withstanding a pressure equivalent to 250 m.m. of mercury, but the veins ruptured at a pressure of about 100 m.m. Such an action as violent coughing might easily raise the venous blood-pressure in the neck vessels to such a degree that the fragile veins in adenomas would rupture. It is seldom that we find adenomas of any considerable size, more than an inch in diameter, that do not show evidence of hemorrhage.

In approximately 2 per cent of my cases of adenomatous goiter, cancer has been found and others have reported an even higher percentage.

Pressure effects from adenomas either in the neck or within the thorax are quite common and may be very serious. Some of the intrathoracic goiters displace the heart to a marked degree and obstruct the venous return to the heart.

Medical treatment of adenomas is so far without curative value and x-ray treatment is distinctly contraindicated because of serious and permanent damage it may inflict on the thyroid gland itself with the production of hypothyroidism.

In view then of the above statements that adenomas are without useful function, that they produce toxic effects after a varying length of time, that they are subject to degenerations both benign and malignant, that they often produce serious pressure symptoms, and that medical treatment is of no avail, I take the stand that they should be removed early before toxic symptoms are manifest. The operation should be thorough, both lobes carefully examined and all adenomas removed. One should not content himself with merely excising the larger ones but should pick out all the small ones, which can be found, in a manner similar to myomectony for fibroids of the uterus. I am in the habit of palpating every part of the thyroid and do not hesitate to cut down on any suspiciously firm area.

The surgical treatment of true exophthalmic goiter—the hyperplastic thyroid—has, in our hands, been distinctly modified by the preliminary use of Lugol's solution. Plummer has made an important contribution to our therapeutic resources. For many years I have given small doses of sodium or potassium iodid previous to

operation for exophthalmic goiter, following the suggestion of Marine, but with only indifferent results in the majority of cases. Lugol's solution supplies iodin as such and it seems to influence the hyperactive thyroid far more than the salts of iodin. Used intensively in doses of ten minims three times a day for two weeks, it converts a very active gland into a resting type, so that one may proceed to a resection of both lobes without preliminary ligations. It is true that the thyroid becomes much firmer and more friable under Lugol's, but the added technical difficulties of the operation are outweighed by the improved condition of the patient and his smooth recovery.

Whether permanent recoveries will result from the administration of Lugol's solution is, in my opinion, very doubtful and my present conviction is to advise operation in every case as soon as the resting stage has been reached. We cannot afford to risk further damage to the nervous system, the heart and other organs that is so often found where dilatory tactics have been pursued. The operation in the hands of any surgeon with good training is relatively safe and the sooner such cases are operated upon, the lower the morbidity and mortality rates will become. The old maxim that "Early operations are safe operations" is well exemplified in exophthalmic goiter.

So far as operations for goiter are concerned, there are only a few minor points in technic that I will bring to your attention. The skin incision two to three fingerbreadths above the clavicle and closely following a transverse crease line—the typical Kocher incision – gives the best cosmetic results. The platysma is also divided in the same line and the flaps reflected above as far as the thyroid cartilage of the larynx and below to the suprasternal notch. The sterno-hyoid and sterno-thyroid muscles are separated in the midline along their complete lengths, so that it is seldom necessary to cut them transversely. After removal of the goiter, the wound is flushed with Ringer's solution to wash out any blood clots or thyroid secretion as well as to emphasize any bleeding points and the wound is closed without drainage, except in deep substernal goiters. The muscles including the platysma are brought back into their proper positions by fine interrupted sutures in separate layers and the skin closed with Michel clips which latter are removed on the third day. Only plain catgut sutures and ligatures of number 0 and double 0 are used. The result in the vast majority of cases is a fine linear scar without adherent muscles.

This paper is based on an experience of fourteen hundred operations for goiter.

INFECTION, AND ITS RELATION TO GENERAL AND LOCAL DISEASE*

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The progress of civilization has been rapid within the last few thousand years of the long period of man's life in the world. Whereas in the past, advances and regressions by reactions required hundreds of years for the cycles they are now made in decades.

Hippocrates mentioned the fact that some recurring diseases affected persons having another chronic disease area, which if removed, also cured the recurrent disease. Benjamin Rush, in 1800, in discussing the same conditions, reported cure of such disease by the extraction of a diseased tooth.

With constantly accumulating knowledge at the command of the many, the mass destroyers of life have been controlled and almost eradicated by the destruction of insect and animal carriers of disease, by the control of human carriers, by quarantine of diseased persons, by vaccination and by serum inoculation to raise the threshold of body resistance to the infective microbe, thus increasing the ordinary quantity required of the infective agent many fold, and usually far above that of ordinary contact exposure or that obtained in food and drink. Our domestic animals are also thus protected, and our country saved from the great economic losses sustained in the past.

Such principles of disease prevention were laid down by Jenner in vaccination against small-pox.

The great world benefactor, Pasteur, showed scientifically why and how disease was transmitted, and the rationale of its prevention in plants and animals as well as in man.

The various disease organisms have nearly all been identified, their action proved, and thus controlled by experimental animal research.

Billings gave a fresh impetus to the study of the diseases which impaired man's usefulness or caused his death, rarely quickly, but slowly and surely, from neglect of small matters pertaining to health. Local infections were known to exist, but considered of little importance by physicians and the public. Often such areas of disease are not recognized because painless and invisible, and they are of such common occurrence that they are not appreciated. It is most difficult to sustain the interest even of those who are suffering during this decade, when a period of reaction is occurring. When this is over advance will again be made beyond proved ground: the ebb and flow of the tide of progress.

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In the field of general medicine the greater dependence on laboratories has reduced the power of observation, while in the field of dentistry there is more to be seen relating to acute and chronic disease than elsewhere. The serious infectious and contagious diseases of the world, destroyers of human life in mass, have now almost disappeared through knowledge of their cause and prevention. By paying more attention to the prevention of diseases which destroyed the lives of babies and children, as well as those of older persons, we have advanced the average lifetime of man to fifty-eight years. Now man is dying an individual death; few of those who should know, and almost none of the public, seem to appreciate the fact that sickness and death from acute or chronic infections (those bacterially caused) account for 87 per cent of all deaths.

One-third of our young men from twenty-one to thirty-one years of age were wholly disabled for war duty, as shown by the draft: 7,000,000 were examined but only 4,500,000 were accepted, and 47 per cent of the latter had defects worthy of recording. The diseases and disabilities of the majority of those rejected were largely owing to the lack of knowledge of parents, or whole communities with regard to disease, its cause, and prevention.

The hardening of blood-vessels; the changes in many chronic brain lesions; disseminated sclerosis of the spinal cord; chronic nephritis; stones in the kidney, ureter and bladder; the recurring rheumatism of muscles and joints, large and small; the chronic recurring diseases of the eye; iritis, retinal and choroidal troubles, and neuritis, are some of the more common diseases which we now know to be due to infection. Investigation has proved that those who suffer from such diseases carry a focus which, with varying degrees of health, exhaustion or even climatic changes, may afford an opportunity for the bacteria to be thrown into the blood stream and create a recurrence of those diseases which, in the past, were treated as entities, primary, not secondary, as we now consider them. The greater percentage of such infective foci are in the mouth; small, closed alveolar marginal pockets, abscesses at the roots of dead teeth, and devitalized and crowned teeth, all afford opportunities for infection leading to an early break in health. They may locate in the heart and thus add to the high and still growing death rate from heart disease: 150 deaths occurring from this cause each year in 100,000 in this country and usually without warning. Fortunate indeed are they who have the secondary foci in a nerve, as neuritis, or in a muscle, as muscular rheumatism, so that time and opportunity may be afforded for investigation.

Only a very few old persons have fully preserved teeth; in fact most of them have lost their teeth and have worn plates since the fifth decade of life. A dead nerve in a tooth will prevent appreciable local reaction, and although possibly enabling its possessor to eat better for a time he is conducting his health on borrowed capital, as he may not have a physician or a dentist who will appreciate that the sickness or broken health which may develop is due to such an apparently trivial cause.

We ask much of the x-ray in the investigation of teeth and jaws. The infecting substance may present a shadow so small that even in a tooth known to be infected it does not show, or it may be lost in the range of the shadow of the tooth itself. By those who understand the reading of plates much may be ascertained from nature's handling of calcium in comparing bone conditions of the two sides of the jaws, and with other infected teeth; the condensing or rarification indicates nature's type of defense against infection by walling off an infected area or increasing its blood supply after the removal of the calcium. Comparatively few physicians understand the reading of such plates. The condition of the teeth then means much to the one who is searching for the focus of infection and type of tissue reaction, also to persons now comparatively well who may in the future develop a variety of diseases which destroy health and happiness, if not life. Because the secondary lesion is not recognized the dangers of focal infection are discredited until too late, in cardiac, renal and vascular diseases.

The tonsils, as a rule, carry the same organism as that which causes the loss of teeth, each individual probably having his own specific organism which may be wholly different from that of his neighbor or other members of his family. For example, mine is the *Streptococcus viridans;* others may have *Streptococcus hemolyticus,* as well as other varieties of the green-producing streptococci. Such organisms may have an affinity for almost any tissue in the body, and by not cleaning up focal infections today persons are neglecting themselves until such time as they are again laid up with troubles of known or unknown cause, and are dependent on the interest dentists and physicians may take in the investigation of the cause. If one case is erroneously considered the result of focal infection due to bad teeth, regardless of the condition of the teeth, and if they are removed without relief of the secondary

disease, it discredits the theory of focal infection and its elimination, with all who know the patient and with the dentists and the physicians concerned. In many cases the tonsils have not been eliminated, or there has been no x-ray examination of the jaws and teeth, local evidence being depended on to instigate special examination.

With regard to infection of the tonsils, consultation with the throat specialist may leave the condition still worse, as he might consider that the small tonsil, size 1 or 2, gave no evidence of disease, even if the history indicated that the patient had had many attacks of tonsillitis in early life. For tonsils graded 3 and 4, large because of reaction against infected pockets within them, the specialist would recommend removal, although their size and reaction then usually confers immunity against their causing focal diseases at a distant point. Small tonsils with small pin-head abscesses carry as much infection as would several teeth with root abscesses.

Besides in the teeth and tonsils, infection should be looked for in the prostate and seminal vesicles, and in the cervi uteri, especially the glandular areas behind the cervical lining. In these areas there are usually various types of streptococci which cause the rheumatism of the small joints, and the myocardial and renal infections. In young men they also account for rheumatism of the large joints, being then due to gonococci and associated bacteria. Why are some persons more susceptible than others? The susceptibility is an inheritance, the result of resistance being due to the mineral content of the blood. There are but fourteen of the ninety-two elements that make up the world which are carried in the blood in almost an exact quantity, sustaining, replenishing and rebuilding in health. At some period in the life of all persons there comes a break in the absolute stability of one or more minerals which changes the resistance of the blood, and makes them susceptible to disease germs. Blood tests will show these changes, and if we desire to know the danger of foci that we carry with us, they may be inoculated into animals, and by their selective affinity for the different tissues of the body will show quite definitely where our danger lies.

A study of the calcium in the world shows that the great bulk of lime and its principal compound are formed by cell life from calcium in solution. A small amount is combined in other ways as by crystalization. Limestone has been formed by bacteria since the Cambrian period of the world's history. Calcium compounds are now being formed in the sea in the same way as in past ages by the most common and numerous sea bacteria known. In 1915 I predicted that it would be found that stones in the kidney and bladder, like pearls in mollusks, were formed by microbic action.

In 1922, Rosenow and Meisser were able to produce stone in the kidneys of dogs by creating root abscesses of their bicuspid teeth with streptococci from the urine, teeth and tonsils of patients with stones in the kidney. Under anesthesia the dogs' teeth were ground to expose the pulp which was removed with the root nerves, the streptococci were then placed in the cavity and the teeth crowned or filled. Calculi, or calcium lesions in the kidney were thus produced in 87 per cent of the dogs infected from nine patients with stone in the kidney. During this research other infections of the kidneys were developed and lesions bacterially produced which simulated the acute and chronic renal diseases of man.

FUNCTIONS OF THE SKIN AND THEIR RELATION TO GENERAL MEDICINE*[1]

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In many general diseases skin manifestations undeniably play an important part. In the past this was frequently utilized for diagnostic purposes, while the modern conception of disease prefers to rely more particularly on the more exact methods of the laboratory. This seems but reasonable.

The evaluation of changes in the skin, which are less pronounced, require more experience, and even then a classification of the differentiations frequently presents difficulties.

The importance and the value of the relation of changes in the skin to general medicine as a scientific problem is quite another matter. In numerous diseases the corresponding changes in the skin are found with such regularity that a connection between the two is evident even though we do not comprehend the reason and the details. Out of the vast number of well known skin manifestations we refer only to (1) the acute exanthematous infectious diseases; (2) the secondary stage of syphilis with its characteristic skin lesions, directly attributable to the excitant; (3) tuberculosis and pernicious anemia, examples of accompanying skin symptoms of a more secondary nature. Thus the clinical observation of

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the skin immediately leads to a study of its relation to general medicine.

I. Clinical Experience

We know that the skin is an organ, perhaps it would be better to say, an organic system, comprising many individual parts which are closely related, and which are subject to a regulatory influence. It is highly probable that this regulation originates in and is exercised by some factors outside the skin. The coordination of the functions of the entire skin is sufficient evidence of such a regulation, a fact which should be kept in mind as being of primary importance.

The knowledge of the physiologic functions of the skin: regulation of body temperature, metabolism of the skin, perspiration, is established beyond doubt. The dependence of these functions upon the involuntary nervous system has been definitely determined. From experiments with pilocarpin and atropin we know that the regulation of these functions does not lie within the skin itself, just as the secretion of gastric juices does not depend solely upon the stomach, and the secretion of saliva is not influenced merely by the salivary glands, but by the involuntary nerves controlling them. Physiologically, the skin is recognized as an organ with individual functions. A normally functioning skin is prerequisite to normal health. As far as the relation of the skin to general pathology is concerned, we are still somewhat nebulous.

We know that in other organs, for instance in the bone marrow, there are reserve forces, the same as in any other tissue of the body. The increase of leukocytes produced by the bone marrow in an acute disease cannot be considered as pathologic; it may represent merely an increase of the physiologic action of this organ. The result is a leukocytosis. This disappears if the body no longer needs it. Leukemia, a tumorlike growth of one certain kind of cells at the expense of another type, manifested by a tremendous production of leukocytes, must be considered a pathologic condition. The question as to whether in case of infection the physiologic function is increased by taking advantage of the reserve forces is immaterial and is in no way connected with the problem as to whether this function merely evidences a healthy store of reserve forces or if it indicates a basic pathologic change. Consideration of the purpose only, and not of the facts themselves, would constitute a violation of the laws of logic. This point of view is important for conclusions as to any condition of the skin. Manifestations of disease require treatment. Any increase of function, however, should be encouraged, otherwise the operation of the normal resources of the body would be curtailed. Answers to the following questions may cover the problem of the skin and its relation to general medicine:

When does a skin manifestation indicate that the skin itself is sick?

When does a skin manifestation indicate that the skin is engaged in helpful resistance to a body enemy?

This subject is so vast that we shall limit discussion to the role of the skin in general infectious diseases.

The original idea of our studies was conceived from clinic experience; thus also this paper is based upon clinic observations.

Three groups among the general infectious diseases required attention: the first comprises those affections in which the skin is only accidentally involved and in which the skin condition appears metastatically; in this group belong such septic conditions as endocarditis, typhus, infection with pneumococci, streptococci and staphylococci, generally caused by a thrombophlebitic process, and some rare forms of a general gonorrheal disease. The excitants circulate in the blood stream. An occasional narrow lumen in one of the smaller vessels entails an embolism of bacteria, either in the skin, the lung, the liver, or in some other organ. Here the involvement of the skin is merely passive, no special functions being affected.

One example of a second group is found in the secondary stage of syphilis. Here the marked skin lesions are caused directly by spirochetes; no like lesions are found in other organs as in the above described septic conditions. In this group of cases a definite and timely limited pathologic condition recurs with absolute regularity, particularly *in* the skin. We are stating facts, knowing nothing of the underlying causes. Nor do we know how many other *so-called* skin diseases are of the same nature. It is highly probable that these also are systemic diseases which at a certain stage of their development are limited partly or entirely to the skin. Surely, a certain relation of the skin to this particular excitant must lead to this affinity. Some authors are of the opinion that the intensity of the skin manifestations, for instance in the secondary stage of syphilis, is indicative of the prognosis; in other words, it is assumed that the skin in comparison to the intensity of such symptoms gradually develops an immunity to those specific toxins.

To the third group belong the acute exanthematous infections, scarlet fever, measles, variola, etc. In these conditions it has never been possible

to determine the presence of excitants in the skin. The epidermis is not the only seat of the disease. In scarlet fever, for example, the bone marrow system is invaded by bacteria (the same as in pneumonia and in typhus), the throat is involved, but the outstanding manifestation of the skin is so typical and striking that for hundreds of years it gave the disease its name. That these diseases, as a rule, leave the patient permanently immune to reinfection is another clinical experience several hundred years old. Typhus infections develop immune bodies, nevertheless the patient is just as liable to contract the disease a second or even a third time. Acute exanthematous infections, therefore, constitute a special group in this particular.

Another point of interest to the subject lies in the following: about 150 years ago Jenner succeeded in preventing the occurrence of small-pox by rubbing the content of a small-pox animal pustule *into the broken skin.* The result was a local infection and then, as a rule, lifelong immunity. A *subdermal* injection of the same vaccine proved to be of no value. It afforded no protection, nor did any symptom of infection develop. The pustule produced by vaccination cannot be regarded as a manifestation of a pathologic condition only—it is merely evidence of the protective activity of the skin.

To a certain extent these conclusions apply equally to scarlet fever and to measles. We do not know whether the virus enters the skin or not, but we do know that the immunity reaction takes place in diseases with such skin involvements, so-called exanthemata. The skin *may* be the seat of the disease; it *certainly* is the seat of a part of the resistance—the cause of immunity acquired.

Clinic experiences justify these conclusions.

The skin as a reflection of a systemic disease and the skin as the seat of immunization, are the issues to be determined. Clinic experiences have proved beyond a doubt the basis for these conclusions; but a great many details have to be studied experimentally and settled before further conclusions can be drawn.

II. Experimental Studies

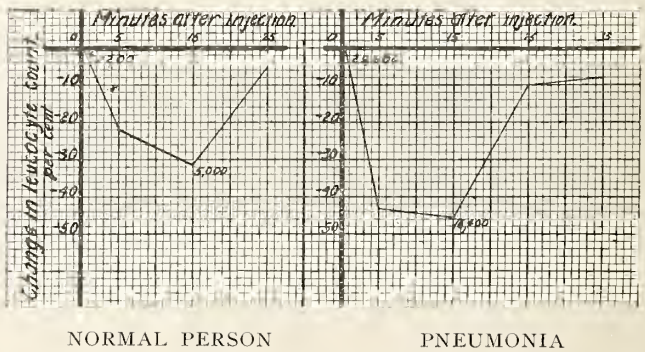
Many physiologic functions of the skin are closely connected with the involuntary nervous system, especially with the vagus, or rather with the entire parasympathetic fibres. Observations of the normal physiologic processes within the body demonstrate this; for instance, small doses of pilocarpin increase perspiration, while small doses of atropin diminish it.

An observation, made in 1918, and but little understood at that time, proved to have far-reaching consequences for the studies of the relation of the skin to general medicine. This observation became the starting point of all these recent investigations in this field.

A patient suffering from chronic gonorrhea with a small discharge containing a few leukocytes, mucous and epithelial cells, was given an intradermal injection of a non-specific, non-tissue irritating protein (Aolan); eighteen to twenty-four hours after the injection a marked increase in excretion was observed. Microscopic study of this excretion showed large numbers of fresh, readily stained leukocytes and greatly resembled the picture presented by a fresh gonorrhea. This reaction was observed in many other like cases by repeating such intradermal injection. Controls were made, and an equal amount of the identical fluid was injected subcutaneously, intramuscularly and intravenously. Nothing happened. The dose had to be increased 50 to 100 times in order to produce a similar reaction via one of the other routes of injection.

This discovery opened a new field of study of the skin. Here was evidence of a relation between the skin and other distant organs, which latter were responsible for the increase of the excretion. As subcutaneous injection proved useless for this purpose, this property, was of necessity, proved to be inherent in the skin.

Continued study of the various factors led to a second finding. Intradermal injection of 0.3 c.c. of Aolan produces peripheric leukopenia of short duration, both in the healthy and in the sick. For a period of from twenty to forty minutes the leukocytes decrease to two-thirds to one-half of the original counts.



NORMAL PERSON PNEUMONIA

Tables I and II present only some examples of the quoted leukocyte findings after intradermal injections of 0.3 Aolan in the human. The curves show the decrease in the number of leukocytes during a period of thirty to forty minutes after the injection, given in per cent of the original count. Absolute numbers will be found additionally at the starting point as well as at the lowest point of the curves. The reaction on the leukocytes is the same in normal persons as in

patients suffering from pneumonia (with usually large numbers) or from pernicious anemia (with its continuous marked leukopenia), and even cases of leukemia (with an original count of 154,000 leukocytes) show no exception.

Recent investigations which were conducted in this country have revealed that, due to a reaction of the parasympathetic fibres, the missing leukocytes are detained for a short period in the vessels of the liver and in other vessels controlled by the splanchnic nerve. This finding presents another phenomenon which depends entirely upon the activity of the skin and not upon the solution used for injection. Even the administration of air into the skin is productive of the same results, i. e., leukopenia of short duration. On the other hand, such a reaction cannot be obtained by subcutaneous injection of air or even of proteins.

Another series of examinations from a different angle led to the same results. If Aolan or saline is injected into the skin, the subcutaneous vessels become dilated and are soon filled with leukocytes, largely of the polymorphonuclear variety. If the identical substance is injected subcutaneously into the immediate vicinity of the vessels, no such reaction is observed; it cannot, therefore, be due to a direct chemical influence, but is to be attributed to some distant control, acting by way of some connection between the skin and the vessels and involving no influence due to the transfer of a chemical substance. However this connection may be established, the parasympathetic fibres, dilators of the vessels are in some way affected.

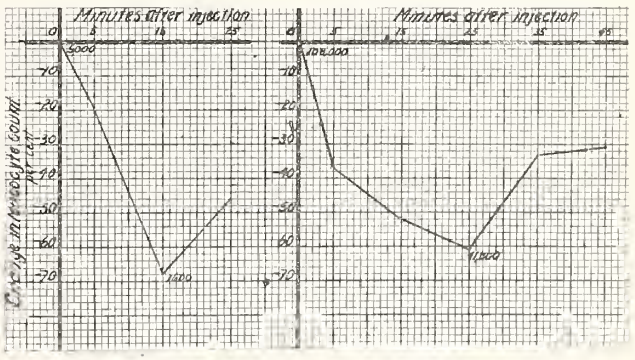
The above described leukopenia of short duration, following intracutaneous injection, is also caused by a vessel's dilation, on this occasion, not in the skin, but in the area of the splanchnic nerve, more particularly in the liver. Both these reactions may be interrupted or prevented by paralyzing the parasympathetic system by means of atropin injections or by nullifying its action by an overstimulation of the sympathetic system with adrenalin. The correctness of these observations was verified in a large series of patients and shows the importance of the parasympathetic system in the production of such far-reaching skin activities. They further show the close relationship between the skin and the parasympathetic system and also lead to the conclusion that there exists a connection between the walls of the dilated vessels and the white blood cells, the numbers of which increase in these dilated parts. The results of these investigations speak for themselves. It was determined that the number of neutrophile leukocytes increased wherever the vessels were found actively dilated. The dilation, near and remote, was caused by the parasympathetic fibres, and in both cases the skin was responsible for this phenomenon.

The following observations were regarded as proof of the close relation of the skin, not only to the walls of the vessels and to the leukocytes, but also to the colloidal state of the serum:

(1) Syphilitic cases of long standing and with a negative Wassermann reaction were induced to give a positive Wassermann reaction, at least for some days or weeks, if injected intradermally with small quantities of a non-specific protein.

(2) Changes were observed both in the sodium chloride and in the phosphorus content, as also in the uric acid of blood and urine after intradermal, but not after subcutaneous injections of like quantities of protein, as well as of physiologic salt solution.

Our most recent investigations have revealed the following interesting facts: animals were given intradermal injections of insulin. The immediate effect was the same as when the subcutaneous route of injection was employed, but the effect of the intradermal injections was found to be considerably prolonged, the most striking difference being found in the fourth and sixth hour after administration.

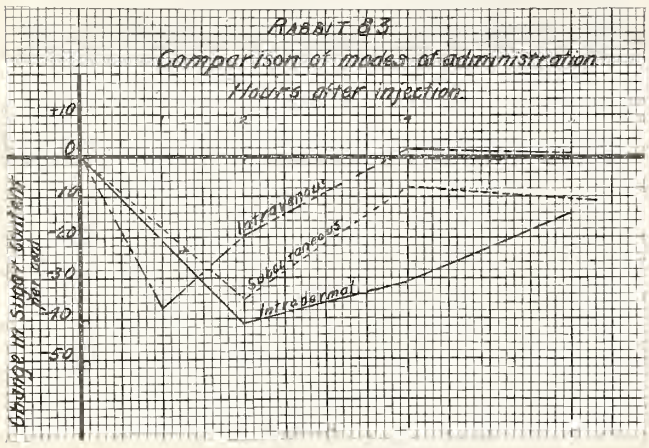


PERNICIOUS ANEMIA LEUKEMIA

Tables III and IV demonstrate graphically these very unusual results. Table III shows in each of two curves the average of ten tests in animals which were injected with 0.5 units Iletin per kg. body weight. The differences between both curves, representing the results in the blood sugar content after intradermal and subcutaneous injection are evident without further explanation.

Table IV shows similar differences in the results obtained in the same animal representing only one of many examples. The effect of 0.5 units of Iletin on the blood sugar content is very pronounced after intradermal administration, while the subcutaneous and the intravenous injection of a like quantity is gradually less effective.

A few days ago identical results were obtained in human therapy, thus confirming the preliminary animal tests. Here again the involuntary nervous system seems to be the causative factor, as



From experiments by E. F. Mueller, M.D. and H. B. Corbitt to be published in the Jour. Amer. Pharm. Ass'n., 1925.

far as we can conclude from our results to date. It is evidently a case of energy transfer by way of nerve fibres, and not a chemical effect produced by dissolved substances circulating in the blood stream.

We have submitted but a few examples gathered from the experimental work carried on in the course of the last few years; they are intended to clarify skin properties which were recognized from clinical experiences.

The skin and the diagnosis of local skin reactions is another part of the highly interesting field of study in which Americans have largely been the pioneers. The work of Dick and his collaborators on scarlet fever—the publications on the diagnosis of asthma—the studies on hypersensitiveness to foodstuffs—all involve the skin. The skin merely provides a reflection of certain processes in the body. The results of many series of experiments had to be taken into consideration before it was possible to justify any statement in the nature of an explanation of these observations. The time is too short to give details. For instance, the complete relationship between the skin and asthmatic manifestations is undeniable. The skin reflects these abnormal processes in a local reaction showing a deviation from the normal absorption of various proteins. In asthmatic conditions the individual functions of the skin are involved, very probably by pathologic changes of the entire organism, manifested also by the same deviation from the normal in the lungs in the presence of asthma—causing agents which are not at all irritating in normal persons. The local reactions of the skin, as well as of the mucous membranes of the lungs are merely reflections which become determinable through active interference with the vital processes of these organs. The more that the fundamental idea—the need for considering the skin as an entity—receives consideration, the more the skin reactions will gain in importance for diagnostic purposes.

III. Studies on Therapeutic Activities of the Skin

Therapeutically, the activity of the skin may be divided under two headings: (1) direct action; (2) remote action. Diphtheria toxins, in vivo, are detoxicated by the skin, in vitro, by macerated sections of the skin. Typhus toxins and typhus bacilli so completely lose their specificity that their intradermal administration does not lead to any production of antibodies, this being a directly opposite result from that following subcutaneous injection. Neufeld recently succeeded in demonstrating the detoxicating influence of the skin in the loss of virulence of highly virulent bacteria when they entered the organism by way of a normal skin. This indicates *a direct antibacterial influence of skin tissue* without the aid of blood cells. Indirect action, manifested at a distant point, is perhaps even more important; the action of the skin stimulated by purely non-specific agents in gonorrheal epididymitis affords a good example. The intradermal injection of a non-specific, non-tissue-irritating milkalbumin acts on the symptoms of epididymitis in the course of a few hours. Five to fourteen hours after injection there appears a marked redness at the site of the inflamed area and at the same time a decided increase in the urethral excretion, the latter, as a rule, having disappeared simultaneously with the development of the epididymitis; pain is relieved immediately, and the swelling disappears within a few days.

The reason is as follows: through this intradermal injection (for which Aolan is used) the whole parasympathetic system receives a strong stimulus which quickly reaches the vessels controlled by the splanchnic nerve, and there follows an increase in the number of leukocytes in this area. In all other areas of the body the stimulation is immediately counteracted by the action of the sympathetic fibres; this does not apply to areas of inflammation where the tonus of the sympathetic is abnormally low so that it will not even respond to adrenalin. In this region, therefore, the stimulus which emanates from the skin can become fully effective. The vessels become markedly dilated, and the result is a like reflex increase in the number of leukocytes and thus a stimulation of the natural process of healing without even the smallest particle of the injected substance reaching the site of inflammation. This constitutes the fundamental importance of the

given case. The remote action is due, not to the fluid injected, but rather to the action of the skin as an individual organ which conducted the stimulation by way of the parasympathetic system to a distant point. The remote effects (stimulation) of the skin are here apparent in their most pronounced form and cannot be induced by subcutaneous administration. These effects are additional to the above described direct action of the skin on living bacteria and their toxins, and to its reflection of the body's reactivity by local skin reactions, which are diagnostically important.

Summary

I have endeavored to give you a few chapters out of the present experimental work on the skin and its relation to the problems of general medicine which may be summarized as follows:

(1) The skin as an individual organ is closely bound up with the problems of general medicine. Skin functions, as known for centuries, play an important part in physiologic processes, such as regulation of body temperature, perspiration, etc. These functions are controlled by the involuntary nervous system.

(2) In pathologic conditions the involvement of the skin becomes evident, not necessarily because the skin is affected by the causative disease, but because the cutaneous surface as a part of the body has contingently suffered a change in its vital processes. Thus the skin furnishes a reflection of the general pathologic conditions involving the body's metabolism. This reflection is manifested either by visible symptoms or by changes in the skin metabolism, which latter may be made visible by introducing certain proteins. This is known as a specific local reaction and is used for diagnostic purposes in disease of general changes of body metabolism (asthma, hypersensitiveness).

(3) Experimental work on the lines of local and far-reaching skin activities has determined: there is (a) a local antibactericidal and antitoxic property of the skin tissue itself; (b) a close relationship to the parasympathetic part of the involuntary nervous system and by this way to the subcutaneous vessels and to the vessels controlled by the splanchnic nerve. Every stimulus from the skin is manifested more or less at the site of those vessels, carrying certain influences to the leucocytes and to the colloidal state of the serum.

(4) If areas of inflammation exist in the body, non-specific agents, injected intradermally, result in a distant reaction at the site of the infection, which may be used for therapeutic purposes.

(5) Certain specific agents (until now only experimentally proved with insulin) are enlarged in their specific action when administered intradermally.

(6) The skin in its entirety, demonstrable hitherto only in some of its properties, represents a part of the body's resistance activity and is therefore to be considered as an independent organ of equal importance to others.

(7) The reactivity of the skin to specific mediums is valuable diagnostically. In therapy, the skin is utilizable intradermally because of its immunizing properties, and non-specific agents supply the medium for its stimulation.

INTESTINAL PROTOZOA AND CHRONIC DISEASES WITH ESPECIAL REFERENCE TO CHRONIC ARTHRITIS*

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The average physician's conception of the human intestinal protozoa is expressible by the two-fold idea; that the infection has been acquired in a tropical country, and that some form of dysentery is a constant symptom. The above conception generally contains the very closely related ideas that only one of the myriads of species of these microscopic organisms can be pathogenic to the human race, and that this particular organism must always produce the same pathology in every infected individual.

There are several reasons why this infection is seen more in tropical than colder latitudes. In the first place, the organisms require more or less heat and moisture for propogation. Their resting stage between hosts is much better protected where the climate is mild or warm. The habits of their tropical hosts may be and generally are different from the manner of life of those in the colder latitudes. We may state that it is easier for a protozoan cyst to live outside of its host in a warm season than during cold weather. But this fact concerns mainly the transmission of the infection. The environment of the host certainly exercises a marked influence on the course of these infections. The patient's resistance, anatomical structure and physiological habits are the greatest factors determining the sequelae of any protozoan involvement. If we only could know the chemical components of an upset physiology or a metabolic imbalance we would be able to attack this problem more satisfactorily. It is the chemistry of these protozoa as much as our own that baffles us. We do not know what takes place in ourselves that enables these organisms to

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live so closely and so persistently with us. Clinically they resemble our dreaded forest fires. They may begin their invasion in a smouldering fire or sweep suddenly out over extensive areas as a great blaze. This intermittent blazing and smouldering character of the infection is seen more often in our latitude than in the tropics. Neither the infection nor its geographical distribution is new. Its wider dissemination is due to our various social turmoils of trade and war. It is a part of the price of commerce and sociability. It is "age old and race wide" and depends neither on climate nor country for its existence.

The symptom of dysentery is very misleading. It chiefly signifies lower colon or rectal irritation, although the upper colon may be at times the important seat of trouble. The more extensive lesions usually produce most dysentery. However a very widespread and extensive protozoan infection often exists with a very profound and stubborn constipation. It may even be present with a seven to eight day caecal retention. In the presence of a diseased gall-bladder or pancreas a dysentery or diarrhea started from a colon irritation may continue indefinitely until the adnexal infecting focus is cleared up. Obstructing hemorrhoids or uterine fibroids may prolong a dysentery, the etiology of which has disappeared long before. There is no doubt that accumulated toxin is a most frequent accompaniment and cause of intermittent diarrhea with constipation. This accumulated toxin probably acts in the same way as any other chemical irritant. In addition to irritating the intestinal mechanism these toxins when absorbed enter into the course of many of the chronic diseases as we shall attempt to show below. Strangely enough the conception of protozoan toxæmia is not a very prevalent one medically. However our most deadly toxins seem to be found among the large protein molecules as in snake venom and the ptomaines. The toxic expression in many chronic diseases is only the slowing down process present in the acute forms referred to above. Add to this poison, the effect of a disturbed physiology of particularly affected organs and the chronic pathology is that of the chronic protozoan case.

In the light of the above reasoning it seems again plausible that the same organism may apparently produce a varying pathological picture. It may be considered etiologically as a modifier of both physiology and pathology. It can occur in both the acute and chronic forms and in that guise may be as varied in picture as lues, leprosy or tuberculosis.

This variation is further enlarged by the great variety of organisms. Besides the amoeba histolytica or dysenteriae, there are many other protozoa concerned in this pathological role. As clinicians we should concern ourselves more with finding protozoa than with one of its species—the amoeba; for undoubtedly, as with bacteria we are dealing with numbers of pathogenic species.

The geographical distribution of these organisms is extensive. In checking over our present series of cases, we find thirty-two states and eight foreign countries represented. The histories clearly indicate that the disease was incipient in these different localities. Certain of our central states make up as much as 13 and 14 per cent of our total cases.

The organisms encountered in the order of their frequency are chilomastix mesnili, the amoebas, trichomonads, Giardia or Lamblia, Craigia and Waskia. The blasto-cysts, the spirillæ and the fatty crystals deserve significant mention although they are not organisms. For a differential study of these organisms the reader is referred to the works of Kofoid, Dobell and others. Alfred C. Reed[1] has given a terse, plain and helpful description from the practical clinician's standpoint. However, in acquiring knowledge of these organisms no amount of text-book description can take the place of laboriously repeated microscopical examination of the stools. With such labor and repetition the "protozoan eye" will certainly be gotten. With such an attainment the identification of organisms is not essentially difficult. Without discussing their cytology, I think we may mention some of their habits and our clinical impressions of them as species. Culturally we can say little about them. None of them has ever been grown in either the profusion or the purity necessary for experimental work on either their toxins or their etiological relations. As we find them in daily practice, the chilomastix undoubtedly predominates. It occurs two or three times as often as the amoebas and is almost two to one with all other protozoa combined. It is common in the cases of short diarheas alternating with longer periods of constipation. It is associated most frequently with the clinically toxic case showing colon stasis and periodic "spells" of unknown etiology and varied symptoms. Rae Smith[2] has repeatedly demonstrated this type of a case in his extensive work on colon stasis.

The amoeba dysenteriae or histolytica is probably, as to name, the best known of the entire group of protozoa. It is undoubtedly the greatest tissue invader of the entire group. While there is much proof that it may establish its habitat in any organ of the body its home is predominantly in the colon. By blood or lymph stream it may be

carried to any part of the body, where logically its death is sudden and sure because its resistance is extremely low. As a cyst however it exists both in the colon and outside of the body. Recently Sellards[3] has proven that the cysts may excyst within the colon as well as the upper ferment-producing intestinal tract. He has introduced a strong proof that we may re-infect ourselves by our own cysts. This organism may produce dysentery. It is found most often in constipated cases, accompanied by such symptomatology as arthritis, neuritis, iritis, melancholia, malnutrition, and neurocirculatory asthenia. In the diseases showing so commonly a hidden toxic element, these organisms are abundantly present in the colon in a percentage too high for coincidence.

The trichomonad is a very active and abundant organism and is often associated with irritative symptoms such as the simple but persistent attacks of diarhea or general intestinal unrest. The nutritive state is often upset and the symptoms blend closely with those of the amoebic cases. The trichomonad diarheas are sometimes very intractable if not practically incurable. These organisms seem to be able to inhabit the digestive tube from the pylorus down. A different species is able to produce a practically incurable infection in the cervix uteri.

The Giardia or Lamblia is about fourth in incidence. It possesses a sucking pad enabling it to adhere smotheringly to the cells of the mucus membrane of the duodenum. We have found it present in a number of duodenal ulcer cases and in all cases there is a distinct duodenal symptomatology. The cysts abound in the colon but the active organism is seldom found in the stool.

The Craigia and Waskia are not very often found but may exhibit themselves in cases similar to those described above.

The blasto-cyst may be only a yeast but it has all the protozoan earmarks. It should always be recognized because of its being so often associated with one or the other of the protozoa.

The fatty-acid-like crystals or needles should be mentioned with protozoa because they are found so often together. They are probably not fatty-acid but are certainly an evidence of a disturbance in digestion or metabolism.

Next I shall take up the varied clinical picture when these protozoa are preponderously present somewhere in the human digestive tract. This clinical picture must be a composite one because of the multiple factors concerned. It would be preposterous to discuss all bacterial diseases under one clinical head, and the reason for this needs no elaboration. If we were without cultural and animal experimental proof with bacteria, the etiology of bacterial disease would then rest on the same basis as does protozoan infection now, and that would be essentially a clinical picture of great variation. It so happens clinically, without any effort to prove anything or to establish any new law, that, certain diseases whose bacterial etiology is still unproven, are heavily laden protozoan carriers; and furthermore, amelioration of the clinical condition goes hand in hand with the progress of protozoan eradication. I realize that this is not an infallible proof of etiology, and I do not give it as such, however you will all agree with me that successful administration of diphtheria antitoxin has convinced us of the etiology of the disease when the proof was only clinical. Much stronger is the claim when clinical syphilis is cured by salvarsan in the absence of all laboratory proof. Etiological malarial fever is hardly doubted, when the usual treatment results in a substantial clinical cure. So it seems to me that it ought not be so hard for our etiological camel gulpers to swallow an occasional gnat. At this time I do not wish to present these organisms as the sole cause for certain pathological entities. I wish rather to point to them as a highly potential factor in influencing the course of several chronic disease states, chief among which are chronic arthritis of Ely's Type 2,[4] certain types of neuritis, especially those connected with mal-nutrition as worked out by McCarrison, iritis of the systemic type as described by Lloyd Mills,[5] the neurocirculatory asthenias as reported by Harlow Brooks[6] and other well known but not etiologically diagnosed conditions. There are certain constants in the clinical history, physical findings and laboratory examinations of these patients that cannot be disregarded in the reasoning from cause to effect. The diseases are essentially chronic. The patient's total vitality and functions are lowered. There is a lack of energy and interest even to the point of self-destruction. Often the symptoms are duodenal as in ulcer or cæcal as in chronic appendicitis, even with the appendix removed. Wherever the complaint may be localized, the digestive apparatus is involved somewhere in the history. Harlow Brooks[6] in discussing "Neurocirculatory Asthenia" says, "constipation, frequently alternating with diarrhea, is common. Mental status greatly influences all the gastrointestinal signs and symptoms". To my way of thinking, it is more nearly true to reverse the sentiment of his last sentence; for clinically and by laboratory findings "the gastrointestinal signs and symptoms greatly influence the mental status". The above chain of symptoms is not improved by the

removal of the ordinary foci of infection such as teeth, tonsils, etc. However this is not an argument against focal infection. It is only adding another big focus.

Following this chain of complaints through, we find the ending so often is chronic arthritis, neuritis, iritis, malnutrition, endocrine disfunction, mental and nervous disorders, epileptiform attacks and even diabetes. No one thing could ever be the cause of this array of syndromes. Yet they have several things in common, and one very important thing is the almost constant presence of some one or many of these protozoa in the intestinal tracts of these patients.

The physical findings, in addition to those of the leading ailment, reveal generally tenderness over the effected viscera, a low blood-pressure and by x-ray some faulty intestinal mechanics, due to chronically formed adhesions produced by former protozoan infection.

The laboratory specifically may be expected to show a low normal in leucocytes and more especially a depression in the polynuclear cells from a low normal to even 40 per cent. In such a case, an ulcerative appendicitis will not show a leucocytosis until rupture has occurred and time has elapsed for the bacterial invasion to change the blood picture. Here the leucocyte count is not so much the evidence of a lowered resistance as it is the proof of chronic protozoan process giving way to an acute bacterial invasion.

The stool analysis fits harmoniously into the above findings. It may or may not contain blood and is generally alkaline in reaction. The percentage of needle-like crystals, in clusters and singly, is very high. Blasto-cysts are fairly common and often occur in the worst cases. The urine usually shows indican. With the above clinical, physical and laboratory picture, protozoa of some type are present in practically 100 per cent. The percentage is certainly too high for coincidence.

The following cases have been selected illustrative of certain representative groups showing the picture referred to above.

Case No. 1—Arthritis, Ely's Type 2. Mrs. McL., age sixty. Duration four years. Severe pains in hands, elbows, shoulders and knees. Walks with much difficulty. Bowels generally constipated with periodic diarrhoeal attacks. Teeth out five years ago. Tonsils out eleven years ago. B.p. 110-80. Cæcum and sigmoid full and very tender. W.b.c. 5000, poly 68, monos 32. X-ray negative for stasis. Stool shows tripple plus active chilomastix with one plus crystals. Results—After one and one-half year's treatment, improvement marked. Free from pain. Uses hands, fingers and elbows freely and walks well.

Case No. 2—Arthritis, Ely's Type 2. Mr. O. W., duration four years. Generalized painful joints with apparent ankylosis of left knee. All joints involved and many with right angle contractures. Tonsils out and all teeth good. General abdominal tenderness with painful sigmoid. X-ray showed no stasis or gall-bladder or appendiceal involvement. W.b.c. 5000, poly 55, monos 45. Stool shows amoebae, chilomastix and cysts double plus with one plus crystals. Results—Patient able to walk about and use joints freely the first time in one and one-half years.

Case No. 3—Arthritis, Ely's Type 2. Mrs. A. H., age twenty-five. Has suffered from chronic arthritis and bronzing of the skin for three years. Completely bed-ridden. Unable to move upper or lower limbs. Severe pains throughout all joints. B.p. 100-60. Teeth and tonsils normal. X-ray shows chronic appendix and caecal adhesions with a ninety-six hour caecal stasis. W.b.c. (during bronchitis) 11,300, poly 62, monos 38. Stool loaded with amoeba dysenteriae, amoeba coli, chilomastix and crystals. Appendecostomy and surgical correction by Dr. Wm. H. Olds. Results—Patient walks to office for treatment; has fully 70 per cent restoration of function and the pains are nearly all gone.

Case No. 4—Arthritis, Ely's Type 2. Miss H. F., age twenty-two. (Referred by Dr. Leonard Ely). This patient has suffered from chronic arthritis and entero-colitis for eight years. Wrists, knees and elbows badly involved. All joints show changes. Bowels severely constipated. Tonsils out eight years. Caecum and sigmoid very tender. X-ray shows stasis and caecal adhesions. W.b.c. 5500, poly 63, monos 37. Stool shows abundance of chilomastix and numbers of amoeba dysenteriæ. Appendectomy and surgical correction by Dr. Olds. Usual treatment carried out. Results—Has regained normal weight and walks comfortably now after having been in wheel chair and bed for years.

Case No. 5—Arthritis, Ely's Type 2. Mrs. M. S., age seventy. Duration ten years. Chronic arthritis, all joints both hands. Patient also has entero-colitis with some myocarditis. Bowels severely constipated. B.p. 140-70. Teeth out. Tonsils negative. Systolic heart murmur. Severe tenderness decsending colon. W.b.c. 6400, poly 56, monos 44. Stool shows abundance of chilomastix and cysts, also spirilæ and crystals. Urine examination shows the presence of indican. Results—Pains and swelling practically gone. All joints useful.

Case No. 6—Arthritis, Ely's Type 2. Mr. H. M., age forty. Duration two years. Arthritis of all joints, deforming. Severe constipation. B.p. 115-75. Teeth O.K. Tonsils out. Appendix out. Very tender caecum. W.b.c. 8800, poly 69, monos 31. Stool shows active chilomastix and amoeba dysenteriæ. The x-ray was negative for gall-bladder, adhesions or stasis. Results—After one year of treatment, patient does full work, takes mountain hikes and without pain.

Case No. 7—Iritis, Mr. S., age forty. Duration five years. Bi-lateral recurring iritis. Bowels constipated. B.p. 110-70. Teeth good. Tonsils out. Iridectomy, right eye. Pupil in left eye fixed from adhesions. Tenderness over caecum and sigmoid.

W.b.c. 5700, poly 60, monos 40. Patient had twenty-six negative Wassermann tests. The stool examinations showed an abundance of amoeba dysenteriae. The x-ray was negative. Results—No results from fifty injections of neo-arsphenamine and many treatments of gonorrheal vaccine. Prompt relief and a discontinuance of atropine and symptoms on anti-amoebic treatment.

Case No. 8—Iritis, Miss N. M. B., age forty-five. Duration ten years. Chronic iritis, stomach trouble and intestinal colic. Periodic constipation and diarrhea. B.p. 80-50. Teeth cared for. Tonsils out. Sinus negative. Right eye previously removed, left severely inflamed. Abdomen extremely tender over entire colon. W.b.c. 6800, poly 63, monos 37. Stool examination showed amoeba dysenteriæ and chilomastix. No blood was found. Results—Inflammation cleared up after routine amoebic treatment.

Case No. 9—Iritis, Mr. C. C., age twenty-four. Amoebic iritis. Duration two years. Recurring iritis. Right eye previously removed to stop iritis. Bowels usually constipated. B.p. 115-80. Left eye inflamed. Teeth O. K. Tonsils out. Sinus O. K. Abdomen tender over entire colon. W.b.c 8800, poly 67, monos 33. Stool examination revealed amoeba histolytica, councilmania and trichomonads. The x-ray was negative. Results—Treatment cleared up iritis. Patient has remained well for last ten months.

Case No. 10—Mental type, Mrs. L. E., age forty-six. Melancholia and enterocolitis. Duration four years. Very nervous and melancholy. Bowels always constipated. B.p. 90-70. Tonsils and teeth in good condition. Sigmoid very tender. Extremities negative. Amoeba histolytica and chilomastix shown in stool examination. The x-ray was negative. Results—Before treatment patient attempted suicide. Six months after treatment she was very happy and well and mental state was normal.

Case No. 11—Dysentery Type, Mr. B. A. V., age thirty-five. Chronic amoebic colitis—anemia. Duration eight years. Watery stool, three to ten daily, blood and mucus. Loss of weight. Poorly nourished, anemic. B.p. 90-60. Teeth and tonsils in good condition. Entire colon tender. No hemorrhoids. W.b.c. 7000, poly 59, monos 41. The stool examination revealed active amoeba histolytica and blood. Results—Treatment off and on for one and one-half years resulted in complete cure.

Case No. 12—Epilepsy, Mrs. M. C. B., age twenty-nine. Epilepsy and chronic entero-colitis. Duration fifteen years. Epileptic attacks and loss of weight. Bowels constipated. B.p. 100-55. Slightly anemic. Tonsils chronic. Teeth out. Thyroid large. Slight tremor of hands. Tender caecum. Appendix scar. W.b.c. 7000, poly 47, monos 52. Sputum negative. Amoeba histolytica found in stool examinations. No blood. The x-ray was negative. Results—Attacks very much lighter. Last one eight months ago.

The treatment aims first to eradicate the intestinal protozoa and second to correct the secondary pathology. For the former there is no specific parasiticide. In fact our failure to kill these organisms by some specific drug or method of treatment is often urged as a proof against the pathogenicity of these parasites. That there is no specific treatment is evidenced by the number of drugs and devices used to cure these conditions. When carefully and properly used, ipecac and its alkaloid emetin are basic drugs, the use of which is of common pharmaceutical knowledge. Arsphenamine and its derivatives have proven helpful, especially with Giardia and probably aid in amoebiasis. The enemeta are in common use and serve a good purpose but should never be used to the point of irritation. Diet probably has no influence on the growth of the organisms and little effect on the disease treated. However Kessel[7] working in Kofoid's laboratory has shown that animals rid themselves of amoebic cysts when confined to a diet of milk. Clinically protein diets have very little influence on the organisms in question. Good food is the best diet and should be selected to influence either diarrhea, constipation, obesity, or malnutrition.

The treatment of arthritis is certainly always medical and orthopedic. Many cases require corrective abdominal surgery before either of the above treatments can accomplish results. Neither orthopedic nor medical care can restore normal physiology of the intestinal tract in many of the severe arthritis cases. The medical study should determine the surgical need. The one word, persistence, is the key note in all treatment.

In conclusion I wish to stress the following things:

The distribution of human protozoal infections is widespread. There is no one symptom by which their presence may be known clinically. They are associated with diseases exhibiting depressive and toxic syndromes as yet unexplained in medicine. They exist essentially in a chronic state. Their eradication is slow, tedious and at times uncertain as is the treatment of chronic diseases. Persistence in treatment with rational honest effort on the part of both physician and patient make up the morale necessary to win this great battle against chronic disease.

Especial appreciation is expressed to Miss Estella Campbell for her careful and scientific laboratory work.

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WHY DO WE HAVE HEMORRHOIDS?

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Internal hemorrhoids are varicosities of the middle or superior hemorrhoidal vessels and arise entirely within the anus. They begin at the points of anastomosis between the portal and caval systems. These anastomoses are very numerous. The most common origin is at the level of the valves of Morgagni, about one-half inch above the anal orifice, and from here they gradually extend up to the larger trunks and plexuses, a distance usually of not more than two inches. The venous radicals are elongated and tortuous and form localized clusters beneath the mucous membrane. Even normal veins are somewhat enlarged in this situation and are called glomeruli.

The Two Types of Hemorrhoids—Hemorrhoids occur in two distinct types, the small capillary and the large venous.

A capillary hemorrhoid is a small tumor rarely larger than the end of the little finger and sometimes as small as a pinhead. It is a true arterial naevus, lying in and immediately beneath the mucosa. It is oblong or placque-like in shape, spongy in texture, bright red or purplish in color. It is somewhat raised and studded over with pinhead elevations. The whole tumor resembling a strawberry in appearance. It is practically always single and situated at or above the internal sphincter.

Early in their existence, these tumors have a granular surface covered with a very thin wall and are very liable to bleed. Later, a plastic exudate and thickened areolar tissue covers the vessel, hemorrhage then occurring less readily. The gentlest examination or even the passage of the feces may be sufficient to start hemorrhage. I recall one case in which bleeding was profuse while the pile was no larger than the head of a black pin. Excessive hemorrhage, particularly if spurting in character, is pathognomonic of capillary hemorrhoids.

Frequently large amounts of blood are lost and a number of deaths have been recorded from this cause. Of course, a large capillary or arteriole is necessarily involved here.

This tendency to profuse bleeding makes a capillary hemorrhoid much more dangerous than the venous variety. In the palliative treatment this distinction is imperative, because the patient may be exsanguinated while the physician is temporizing with injections of styptics. The capillary piles do not protrude or cause any of the pain or discomfort, attendant upon the venous variety. Hemorrhage itself is the cardinal symptom, and requires energetic or even heroic treatment.

The venous hemorrhoids (Fig. 1) are of more common occurrence than the arterial. The pile may appear as a good sized tumor, frequently one-half to one inch across its base and covered with a livid-bluish and glistening mucous membrane. Matthews reports seeing one as large as a small orange. These venous

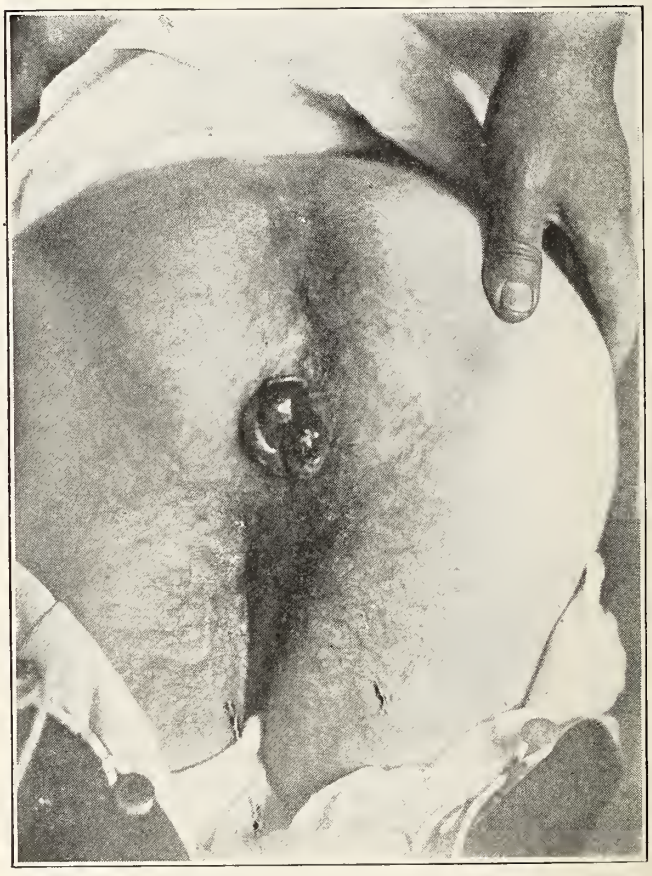

FIGURE 1. Prolapsed internal hemorrhoids (direct view). Note old skin tabs anteriorly and laterally.

hemorrhoids are situated in the submucous connective tissue. They begin in the venous pools and are composed of a dilated and varicosed vein, with its capillaries, and also the arterial capillary supply. They are located, usually, one on each side and slightly in front of the posterior commissure, and on the right and sometimes the left of the anterior commissure. Sometimes the whole anal ring is a mass of varicosed veins, especially when due to disease of the

heart, liver or kidney, and this varicosed condition may extend the whole length of the rectum and even to the colon. Sometimes several small veins may be twisted together into one mass. The sacculations and varicosities are limited to the venous vessels and do not affect the arteries. The tumor is not wholly composed of veins but around this mass of vessels there is a fibrous capsule which sends trabeculæ (partitions) in between the veins. As the tumor increases in size the mucous membrane covering the pile is chronically inflamed by the trauma of each passing stool and the walls of the veins early are thickened by this inflammatory hypertrophy. Sometimes such vessels may form large venous pockets.

The relative proportions of the vascular and connective tissue elements determines the firmness and other physical characteristics of the pile, and is an accurate means of determining the length of time the tumor has existed. In long standing hemorrhoids the connective tissue preponderates over the vascular elements. There is no increase in the arterial supply of the hemorrhoid. Usually one or two small arterial twigs are found but the lumen of the artery may be very large.

The blood in one vein may coagulate and the clot be transformed into fibrous tissue. Such changes occur as a result of inflammation and infection.

The Relation of Proctitis to Hemorrhoids—Early in my work I noticed the association of hemorrhoids with proctitis. The acute catarrhal proctitis is often met with, and always you will find an edematous mucous membrane with its hemorrhoidal vessels engorged. As the proctitis subsides, the hemorrhoidal edema and engorgement also is reduced and finally disappears. If, however, the proctitis persists as a subacute or chronic form, the hemorrhoids also continue and a gradual hypertrophy of the mucous membranc results. This increases the bulk and weight of the mucosa, until it separates and slides down on the areolar tissue and is grasped in the sphincter. The spaces of the submucosa about the hemorrhoid are filled with connective tissue. Later, when the proctitis reaches the atrophic stage, the hemorrhoids remain, because of this connective tissue infiltration which permanently constricts the venous overflow.

Now there enters a second factor. The descending fecal mass, acting in the reverse direction on the veins, distorts the latter further and tears more mucosa from the muscular wall. With each bowel movement, the hemorrhoidal mass acts as an obstruction as the feces are forced through. This increased muscular action drags down the hemorrhoid and the adjoining mucous membrane until they prolapse, thereby increasing the size of the hemorrhoid itself. Finally when they have attained considerable size, they prolapse easily and act as foreign bodies tending to excite the sphincter to spasmodic contractions.

Causes of Hemorrhoidal Congestion—Hemorrhoids brought on in the manner described are the result of digestive disturbances, the improperly

Figure 2. Prolapsed internal hemorrhoids. Cross view from behind.

digested or fermenting bolus acting as an irritant. In this way constipation is a frequent cause, while the vein is ruptured by the engorgement and stretching due to the passage of the feces. Thus it is that drugs used to relieve the constipation (aloes, senna, calomel or gamboge), also frequently congest the rectal circulation. Warm enemas also act in this manner. Certain articles of food, by irritating the mucous membrane, cause peristalsis or tenesmus and thus provoke hemorrhoids. (Notable among irritating comestibles are, spices, peppers, mustard, sauces, radishes, water-cress, tamales, chili con carne and pickles, also alcoholics and tea.) An excess of a carbohydrate that cannot be cared for by the liver, blocks the portal circulation and later the hemorrhoidal vein. These dietetic changes account for the apparent influence of the seasons upon the hemorrhoidal circulation. As the warm

spring weather comes, the system cannot dispose of the same amount of carbohydrates as it had been accustomed to do during the winter, and so the load is thrown upon the portal circulation.

Besides constipation there are other conditions that cause straining or a bearing down and thus tend to congest the pelvic venous current, among these, particularly, stricture of the rectum or urethra stone in the bladder, an enlarged prostate gland, the pregnant uterus or a myoma of that organ, pelvic exudates, adhesions, even a retroverted uterus. It is well to bear each of these conditions in mind, because a patient may consult you when suffering from one of them, and, at the same time, complain of hemorrhoids. The hemorrhoids, however, do not require treatment directly, being wholly dependent upon the underlying condition. In this same manner, all those occupations that increase the abdominal or pelvic pressure will induce hemorrhoids, such as severe muscular exertion or prolonged standing or sitting still, especially if on a vibrating platform, as in the case of railroad men, or teamsters. Desk workers also frequently are sufferers, owing to sitting in a bent over position, which crowds the abdominal contents toward the rectum.

One other class of positive causes of hemorrhoids is disease of the heart, liver or pancreas and syphilis. Since the exciting cause in this class of cases cannot be removed there is no hope of curing such hemorrhoids and a tentative treatment is all that should be undertaken.

OSTEOMYELITIS OF THE MANDIBLE, ETIOLOGY, TREATMENT AND RESULTS*

R. A. FENTON, D.D.S., Iowa City
Professor of Oral Surgery, State University of Iowa

In the discussion of necrosis and caries of the maxilla it will be well to review our terminology—osteitis, inflammation of the bone; osteomyelitis, inflammation originating in the bone marrow; periostitis, inflammation of periosteum; necrosis, death of bone in mass; osteoporosis, rarefaction of bone; and caries, the molecular destruction of bone.

The blood supply to bones is double: first, from the nutrient artery which passes into the medullary space and divides, ramifying the whole bone marrow and the Haversian canals; secondly, from the periosteum many blood-vessels pass into the bone. These two systems anastomose and therefore it is easily understood why osteomyelitis attacks compact bone and the periosteum and why in turn periostitis may result later in osteomyelitis.

Large veins occur in the cancellous interior and as a result of inflammation become thrombosed, resulting in stasis.

My object in giving this paper is to emphasize the regenerative power of the maxilla and mandible when treatment is correct. Most deformities resulting from necrosis are preventable when proper mechanical means are used at proper time and when surgery is limited.

In handling these cases the cooperation of the dentist and physician is necessary.

Relative to growth and repair of bone, a bone-forming element must be present and that is present, according to McEwen of Edinburgh, in dense bone, cancellous bone, and the endosteum or layer just under the periosteum. Hence radical removal of bone in a surgical way, although the periosteum is elevated and left intact, will not result in the formation of new bone.

Fortunately osteomyelitis such as seen in the long bones in children seldom attacks the mandible. The primary cause of necrosis is then the result of inflammation, the periosteum being elevated by the exudate or pus, the veins being thrombosed by pressure, the necrosis depending on the degree and extent of the inflammation. As to the causes of the inflammation which may result in necrosis, they are varied. In our observation more frequent and extensive cases have resulted from the extraction of lower third molars covered with inflamed soft tissue. These cases varied from the loss of sequestra the size of a dime to pathological fractures and the loss of almost half the mandible. Acute alveolar abscesses have been another frequent cause, especially those coming from fractured roots which were allowed to remain in the process. Injuries, especially fractures and gun shot wounds, are not an infrequent cause for necrosis. Mineral poisoning such as arsenic and mercury resulting in necrosis have come under our observation, being especially severe in one case of mercury poisoning where the alveolar process molars and bicusps were exfoliated in mass in a child twelve years old who was being treated by injections of mercuric chloride for lues. One severe case observed, was caused by furuncles. While never reading of radium causing necrosis, I have observed two cases where radium was used in contact with uncovered bone of mandible in post-operative cases. In these cases there was every clinical evidence of burnt bone, white, brittle, no granulations, finally pathological fracture, the formation of sequestra and their exfoliation.

*Presented before the Seventy-Third Annual Session, Iowa State Medical Society, Des Moines, Iowa, May 7, 8, 9, 1924, Section Ophthalmology, Otology and Rhino-Laryngology.

The use of hydrogen dioxide in infected tooth sockets is a favorite means of producing osteomyelitis which may result in necrosis. Pressure forcing infection beyond nature's line of resistance into the bone marrow.

Many necrotic conditions are due to systemic causes such syphilis, acute exanthema, i. e., smallpox, scarlet fever and measles, and disorders of nutrition.

In 1917 a patient eighteen years of age reported to the University Hospital with swollen face, pus exuding from around the necks of upper and lower teeth and gum tissue, in places practically covering the teeth. There was a history of measles at the age of twelve and since that time whenever the patient received a blow about the jaws or any unusual strain upon the teeth, the gums became swollen and tender, pus usually discharging and the condition in a few weeks would return to near normal. This had occurred seven or eight times during the preceding six years. About one month previous to coming to the hospital, due to malocclusion the patient reported to a dentist for regulation of the teeth. No sooner had appliances been placed in position and force exerted than the present attack began. The appliances were removed but the condition failed to return to normal. Examination: face and gums swollen, pus exuding from around the teeth, all teeth loose, patient underweight, malaise, with little interest in work or play, temperature 99.2, W. C. 14000. X-rays of all teeth showed rivulets of rarefaction running through the maxilla and mandible and roots of all teeth partially absorbed both as to length and diameter. The case was diagnosed as an acute flare-up of a chronic osteomyelitis following measles six years before. Free drainage, together with removal of the teeth resulted in an apparent cure. The boy gained in weight, graduated from high school and college, the jaws giving no trouble since healing. I give this case because of its rarity.

Symptoms—Acute osteomyelitis is usually ushered in by fever, chills, and depression, increase in leucocytes, an effusion of pus into the medullary cavity, the formation of pyemic abscess, and the elevation of the periosteum. With the stripping of the periosteum the blood supply is partially shut off and this together with the chemical action of the infection will result, if long continued, in necrosis.

Treatment—Again I wish to emphasize that surgical work should be limited if good results are to be obtained and deformity reduced. Radical removal of bone and vigorous curettement is absolutely contraindicated, not only because of the deformity produced, but the danger of breaking down nature's resistance and spreading the infection even to the point of septicemia. Not only is it necessary to wait until the development of sequestra, but sometimes it is well to delay their removal a short time that they may act as a partial framework for the jaws while new bone is being formed.

The early treatment of osteomyelitis is free drainage. Drainage must be established and maintained, irrigation whenever possible. If necessary, incision should be made at lower border of mandible as well as in the mouth. If this is done, many cases of osteomyelitis will recover without the formation of sequestra. Dr. Cryer even goes so far as to drill holes through the outer plate of the mandible to get drainage of the cancellous tissue. With drainage only internally, use hot mouth wash frequently and apply ice bags to the submaxillary region to prevent the glands of the neck from being involved. If there is external drainage, then hot, moist dressing should be applied externally.

The most difficult thing is the waiting for sequestra to form. Many patients wish an operation to clear up their trouble at once. This cannot be done and only results in more extensive destruction of bone. The only thing for the surgeon to do is to establish and maintain drainage and later help nature in the exfoliation. Nature itself must decide where to draw the line between the necrotic and the living, and it is the surgeon's work to remove the sequestrum when it is formed.

When large portions of the jaw are lost the remaining fragments are drawn toward each other by the contraction of the muscles and the teeth are thrown out of occlusion, producing in many cases a great deformity, especially when the chin is swung to one side. To prevent this, it is necessary to keep the remaining portions of the jaw immobile and in proper alignment by fixation of the teeth in their normal occlusion. The simplest method is interdental ligation. Sometimes because of a lack of teeth a splint may be necessary, or even a vulcanite bar may be placed in the wound to maintain contour until new bone has formed; this bar can be removed and cleaned, also gradually reduced in size as new bone is formed.

I use packs in the wounds very little as in the mouth they soon become foul and infection may be carried by them from a diseased area to reinfect a clean area. Frequent irrigation, every half hour when awake, with warm normal salt solution has given us the best results, much better

than packs. Whatever solution is used should be mild. It is the mechanical cleansing rather than the disinfecting properties that counts.

Sequestra should be removed when formed, as a general rule, but as various parts are cut off at different times, the removal of sequestra may cover a period of weeks. The intelligent patient understands this but an ignorant patient is hard to handle as he wants to be cleaned up "once for all".

In those cases where a chronic sinus remains and refuses to close there is usually a sequestrum that has been undiscovered, is unable to exfoliate because new bone has formed around it somewhat, or there is a space or cavity in the bone lined by granulation tissue infected with pyogenic organisms. The bone surrounding same seems unable to form new bone and the soft tissues are unable to collapse and fill the cavity. To summarize—the existence of a sinus of long duration is due to unremoved sequestra or to the existance of an infected cavity, the walls of which are unable to collapse and allow its obliteration. If we are to effect a cure, we must remove the sequestra—or if a cavity, curette cavity—and so bevel borders that soft tissue will collapse and obliterate same or by mild irritants and irrigation stimulate granulation tissue to fill the cavity. The first procedure is to investigate the sinus. This is usually done by a small blunt silver probe, using care not to penetrate the sides of the sinus and thereby getting a false lead. The next step is x-ray, oftentimes with probe in sinus. Usually x-rays at different angles will aid in localizing the trouble. The operation may be done intraoral or extraoral, depending on the location of the sequestra. Personally, I prefer intraoral if possible, but see little objection to extraoral as a surgical scar made in the correct direction with regard to skin tension is hardly to be noticed. The incision may or may not be made through a sinus, the incision being determined by the best approach to the area involved.

The value of x-rays is variable, plates usually being the most valuable, also the angle at which the plate is taken, its clearness, the presence or absence of other structures overlying the jaws making interpretation of plates difficult. Without history and clinical findings, x-ray plates alone will frequently lead you astray, because from plates alone one cannot always tell active osteomyelitis from healed osteomyelitis or postoperative cases.

Again, I would say, go slow on these cases, do a little and let nature do the rest. The normal ability of tissue of the mouth to heal is marvelous.

I have a series of plates showing the regeneration of practically half the mandible in three different cases. In these cases our aim was to support the mandible in its normal position, preventing displacement of parts because of pathological fracture, maintain drainage, and to aid in the exfoliation of sequestra when formed.

A FEE BILL

A fee bill signed by forty-three Iowa doctors has been discovered which was adopted more than forty-five years ago, and published by several Iowa newspapers, giving the charges for medical service at that time considered reasonable, but now far out of date. It appears that only three of the signers are now living, Drs. Louis Schooler and O. W. Lowery of Des Moines and Dr. D. S. Fairchild of Clinton. We are not informed if the other forty-three signers came to an untimely death because of the fee bill or if the three surviving members had become so hardened to modern sentiment as to be insensible to the modern spirit of progress and had survived the storm of the days of the recent past, we are not told. Nevertheless the items are as follows:

Obstetrical case	$10.00
Ordinary visits in town, first visit	2.00
Subsequent visits, same case	1.50
For country visits, first night	2.50
Each additional night	.75

"While present day physicians as a rule will refer you to a fracture specialist, the old time medical doctor balked not at all at broken bones, and the charge ranged from $5 to $40 according to the seriousness of the injury."—(Ft. Madison Democrat.)

A WORKMAN'S COMPENSATION BILL ALLOWED

Recently a workman repairing automobiles was injured, and the foreman called a physician who was not employed by the insurance company that insured the automobile concern under the workmen's compensation act. The physician rendered a bill to the employer of the patient, who turned the bill over to the insurance company. The latter obtained a ruling from the Industrial Accident Commission reducing the bill to about half its original amount. The question then arose as to whether the Industrial Accident Commission had the jurisdiction to reduce a physician's fees rendered unconditionally to the employer and at the employer's request. The municipal court of Boston rendered a decision in favor of the physician for the sum he claimed. The judge found that the physician was unconditionally employed by the employing corporation, which was liable for the full amount of the physician's bill.

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MEDICAL EDUCATION, A COMPARATIVE STUDY—BY ABRAHAM FLEXNER

Some years ago Abraham Flexner under the auspices of the Carnegie Foundation took up the study of medical education as it existed in the United States and Canada, together with a comparative study of medical education in the leading countries of Europe. At that time in the United States and Canada medical schools, except in isolated instances, were emerging from the proprietary system of education which had existed from the beginning of medical teaching in this country, to the beginning period of reorganization, when more than 160 medical schools existed. This was the high water mark of proprietary medical schools. There had grown up a feeling that we were far enough advanced and were rich enough to demand a better and more scientific method of training young men for the practice of medicine. In looking for models we had before us the clinical methods of Great Britain and France and the University plan of Germany and the Germanic countries, or a continuance of our own proprietary methods, with certain very important modifications.

It was plain enough that with all the advantages of the German method it did not accord with the genius of our people and there were certain serious objections to the English and French method. We had to take into account the fact that in these European countries the control of education was a function of government, while in the United States the courses of instruction were controlled by university authorities, and it was only by the cooperation of universities that a uniform system could be secured for the whole country.

In England and France, the courses of medical instruction had grown up with the evolution of government to meet the growing needs of the country in combating disease, to meet the dangers of epidemics and to furnish surgeons for military service, very naturally the system was clinical. In England medical training became the function of hospitals and the medical schools were attached to the hospitals as hospital medical schools.

In Germany, Scandinavia, Holland and German speaking Switzerland, medical instruction was carried on in universities by the university professor "expounding the traditional lore". This condition continued until about 1870 when the growing discoveries of scientific investigation were utilized in medical research and teaching followed by the development of laboratories for this purpose. Under the direction of the state, medical teaching became a university function, and for the first time there came a real scientific medicine which brought great numbers of scientific medical men to Germany for a training that could not be obtained in the clinical schools of England and France or in the proprietary schools of the United States and Canada. Whether the university schools of Germany made better practitioners than the clinical schools may be a question, but it is certain it made more scientific physicians and surgeons and better qualified for research work.

In the United States the proprietary schools met an urgent need for physicians in a rapidly growing country under a republican type of government. The American Medical Association had offered as one of its important functions the improvement of medical education in the United States, but it was many years before definite plans were presented and then under the direction of a council, which became known as the council on medical education, made up of experienced and able teachers of medicine. The acceptance of any plan must be voluntary and the evolution was slow. It must be admitted, however, to have been surprisingly rapid considering the magnitude of the undertaking.

Starting with a system of education conducted as a private business it was impossible to evolve a system in line with that already existing, it therefore became necessary to develop a new plan, and the one that seemed best fitted to the needs of medical progress was the university

school. Fortunately the Johns Hopkins School had been organized which would serve as a means of carrying us over to the plan of organization which was gaining form among our educators.

Not a little opposition was offered by the private medical schools but the argument was not convincing and the sentiment in favor of the university medical school grew rapidly, partly due perhaps, to the abuse growing out of this method of training doctors, and the inability of medical graduates to meet the requirements of scientific medicine. Today we are committed to the university idea of medical education as the one best suited to the needs of medicine as a whole.

One of the most important questions confronting our medical universities is the question of full time clinical professor which is being taken up by some of our great schools. This is considered in considerable detail by Mr. Flexner in his book. We are informed that some thirty full time clinical professors are employed and at the present moment the plan seems to work well. It seems to us that the reason for the full time professor in the medical school of a university is the same as the full time professor in any other department. The work of the professor of internal medicine or of surgery is not less difficult or complicated than that of Greek, geology or botany, especially is this true of the heads of departments. The preparation for the clinics or lectures requires much time and thought and if the professor performs his full duty to his students he must have the leisure to keep himself informed on the literature of his subject and able to do research work. If the finances of his school will permit, his first assistant should be a full time man. The advantages of part time instruction may be secured by assistants. In our opinion full time heads of departments will ultimately be the rule. The university plan of medical education has had an unfortunate effect on the country, or small town doctor, for economic reasons. That the whole plan of medical education is not settled is shown by the views recently presented by men in high places as by Dr. Pusey, recently president of the American Medical Association. But it may be assumed that the university plan is the permanent one modified to meet certain conditions. Flexner has not only reviewed the question of medical education, but also educational questions pre-medical in character.

An important question in medical education relates to the age of the young man who is to enter upon the practice of medicine. In the United States at thirty, Germany twenty-six, Great Britain and Canada about twenty-five. The difference in age appears to be in the length of time given to secondary education. In the United States after completing the four years of high school it is found that the candidate for a course in medicine is not sufficiently trained in chemistry, physics, biology and modern language and that the high school course should be supplemented by two years in college to place the student on a level with the German or English boy who has completed the corresponding school course; say, at the age of twenty years. The same amount of time has been given but the American school is not as good as in Germany and the other countries referred to. Granting the truth of this contention, Dr. Pusey holds that the four years high school in the United States is sufficient for a course in medicine and that three years in a medical university with an additional hospital year is sufficient preparation for the practice of medicine. It would appear that the argument of Dr. Pusey could not be denied if we are to continue to have general family physicians in our rural communities.

This book is full of interest to medical educators and to the profession in general, who are also interested in medical education.

Not all will agree with Mr. Flexner, but all will be instructed by a careful and deliberate reading of what he has to say on pre-medical and medical education in our rural communities.

DR. D. C. BROCKMAN

The death of Dr. Brockman removes from our ranks one of our most useful members, it will be difficult to fill his place. Dr. Brockman did his work and performed his duties to his profession, to society and his immediate community without ostentation or pretense.

He never sought public notoriety or laid claim to superiority, but there was always in his kindly face an unconscious expression of superiority of character arising from right thinking and right doing. To the writer, who had known him for near forty years, it is impossible to conceive of Dr. Brockman entertaining a mean or ignoble thought. He was an accomplished physician and surgeon in the sense of being a cultivated gentleman of wide knowledge. He was a skillful surgeon with a background of a deep knowledge of medicine as a whole. He was not an operator only but a real surgeon who could measure a case from every angle. He was instinctively honest and no one who knew him, or could judge of character, could have any misgivings as to the safety of the measures suggested.

In his relations to his profession Dr. Brockman was conservative but would not for a moment countenance anything that was irregular or in the least derogatory to the dignity of the profession he loved. As a member of the State or local Medical Societies he was a safe councilor and his opinions were always respected. His influence in maintaining high standards was great in a community favored from the beginning with groups of physicians who had placed Ottumwa in the first rank of Iowa cities. His contributions and discussions at the various sessions of the State Society were well considered and impressive in character. It was Dr. Brockman, when president of the Iowa State Medical Society, who presented in his presidential address the need of cooperation in the defense of unjust claims for malpractice against physicians, which had become so burdensome and so destructive to the welfare of the profession.

We are reminded in the death of Dr. Brockman of the passage of the men who contributed so much to the welfare of organized medicine in Iowa, men who devotedly maintained the standard fixed by an earlier generation which have now placed the Iowa State Medical Society in the front ranks of state organizations. We must not forget the influence of Mrs. Brockman, the daughter of Ottumwa's first physician, Dr. Warden. This estimable lady inherited the traditions of an earlier generation of physicians which must have especially fitted her as a helpmate to her distinguished husband.

AN APPRECIATION OF DAVID CRAWFORD BROCKMAN, A.M., M.D., F.A.C.S., 1853-1925

Doctor Brockman, of Scotch ancestry, born into an Iowa family in very modest circumstances, by his own industry paid for his education in academy and college; received his medical degree at the University of Iowa in 1878; entered into the hard and exacting duties of a country practitioner of those days, bringing bodily aid and comfort to many families over a broad countryside. Ever improving his professional equipment by study, and by frequent visits to medical centers and clinics, he became one of the pioneers and leaders in the practical use of the many wonderful developments in medicine of the past forty years and was so recognized in Iowa and the Middle West—particularly so in southeastern Iowa.

He was called back to his alma mater to teach soon after his graduation (1888-1892). In 1892 he came to Ottumwa and after a few years in general practice began to limit his field to surgery and diagnosis.

As a debater in medical meetings his judgment was clear and sometimes unduly positive, but he was usually found on the right side of the questions he was called upon to decide. He was prompt, uncompromising and severe in his condemnation of wrong. With all his rugged qualities he was a man of kindly heart and cherished a genuine affection for his fellow man. During his residence among us he has always striven for the elevation of the standards of our profession. He was a natural teacher and was free to impart his knowledge to his colleagues. The lessons he taught and warnings he gave saved many lives. In doing his professional work he placed the interest of his patient first. He was honest with his patients, self-interest or the desire for a fee was not a deciding factor with him in advising any course of treatment or operation.

His colleagues showed their esteem and honor by making him at different times president of the county medical society, of the State Medical Society, of the Tri-State Medical Society and of the Railway Surgeons Association of Iowa.

Thus another American boy coming up from a modest country home to a position of honor and service gives the lie to the vaporings and ravings of the American imitators of Russian Bolshevists.

The Doctor loved flowers and books and people, particularly children. As an official in the Presbyterian church and in the Young Men's Christian Association he rendered valuable public service, and in quiet unostentatious ways he did many acts of kindness.

He was a devoted husband and father.

His colleagues in the Wapello County Medical Society desire to assure his family of their sympathy for them in their great loss and grief and deeply lament their own loss in the passing of their friend and counselor who was held in such high esteem for his ability and service.

Committee appointed by
Wapello County
Medical Society.

Edward T. Edgerly,
Maude Taylor,
Murdoch Bannister.

FULL MEDICAL COURSE AT MADISON

Heretofore the University of Wisconsin has offered a two year course in medicine at Madison. On account of increased clinical facilities the University is now able to offer a full four years' course. The third year will begin in 1925 and the fourth year in 1926.

THE FEVER THERMOMETER AND HYPODERMIC SYRINGE

An editorial in April 18 Journal of the American Medical Association reminds the writer that when he was serving his apprenticeship as a student in medicine with his preceptor and while he attended medical lectures, he never saw a clinical thermometer, and it was during his first year of practice in 1869 that a means of measuring the body temperature came to his notice. This thermometer consisted of a long curved glass tube with a mercury bulb to be placed under the arm and on the straight portion of the tube, commencing at a point just outside the patient's clothing, was attached an ivory plate with the degrees and fractions marked in red lines. The thermometer was not self-registering and it was necessary to watch the column of mercury and determine the maximum rise. It was not very accurate, but gave an approximate idea of the degree of temperature. A good deal of care was necessary to get the maximum degree of temperature twice in the same case. Even with this crude method of obtaining the temperature, we had no very definite idea of the significance of the temperature obtained.

About the same time the hypodermic syringe came out and on account of the number of fatalities recorded in literature from hypodermic injections, we were in constant fear as to what might happen if we used this dangerous instrument. We had no definite means of determining the size of the dose and took a guessed portion of morphine on a piece of paper or knife blade, so it is probable that we gave two or three times as much morphine as will be found in the carefully weighed tablet of today. We remember our first patient, a case of puerperal convulsions. We had been sitting at the bedside for two days and two nights, half of the time in consultation with a physician of thirty-five years' experience. The patient was three months advanced; nothing we did had any effect; patient was getting worse, convulsions getting longer and more severe. I proposed a hypodermic injection of morphin. The consultant refused to share any responsibility; the case seemed hopeless; at last the consultant consented to let me have my own way, but he would have none of it. I guessed as to how much I was giving, probably more than half a grain; I did not know what would happen, but took the chance. In less than an hour the convulsions grew less frequent and less severe, and in another hour we went to bed with a feeling that our patient would live, and in fact did make a good recovery. It was a trying experience. This was in 1869, no doctors were within twenty-five miles drive and the roads were extremely bad, a Minnesota blizzard, and we had almost time to remain until convalescence was complete before the roads were in condition to return home. The family was poor, only money enough to pay consultant.

This experience has remained vivid in my mind for nigh onto fifty-six years, so I remember fever thermometers and hypodermic syringes.

COMMUNITY PHYSICIAN

Sharon, Kansas, is experimenting with the plan of hiring a doctor by the year. The community of one hundred and sixty members have agreed to pay Doctor E. S. Haworth twenty dollars a year each in two semi-annual installments for medical services. In return for these fees they receive medical service and attention without farther charge except for calls made between ten p. m. and five a. m. for which one-half of the customary fee for night service is charged. Also people living beyond the six mile limit pay mileage. Cases of major surgery or hospitalization cases are not included.

Sharon is a town of about three hundred and fifty inhabitants and Doctor Haworth is an acceptable physician and finds it impossible to continue in the community without some arrangement of this kind, as is so often the case with country physicians.

Similar arrangements in small communities will probably be the solution of the country physician problem.

CONJUGAL TUBERCULOSIS

Dr. Paul Roussel has recently contributed much to our knowledge on the question of tuberculosis contagion between husband and wife, based on exact statistics. According to Roussel, contagion between husband and wife, even among the working classes, is rare, and occurs only after long cohabitation. In the total statistics it is not over 5.2 per cent, and in open cases 11.56 per cent. On the contrary, in the same family, the children are extremely sensitive to tuberculosis infection, and in the total statistics their minimum proportion is 25.02 per cent, and 37.59 per cent in open tuberculosis of the parents.

Transmission from husband to wife appears to be by far the most frequent, this fact being due to the particular receptivity of women at the time of pregnancy, puerperium, and lactation. When transmission of the disease between husband and wife does take place, it is mild in over 66 per cent of the cases.

The infrequency of conjugal tuberculosis can be explained by the immunity the mild repeated super-

infections confer upon the adult in respect to slight contaminations arising in everyday life. Cases of conjugal contagion rarely represent massive contamination; usually there is predisposition to tuberculosis dependent upon heredity. A delayed marriage may be permitted under certain reserves to patients with so-called cured tuberculosis which has been so for several years. In this respect, we should be always more guarded in the case of women than men, and a union between two tuberculous subjects should never be advised. Conjugal prophylaxis consists of sleeping in separate beds, a discipline of coughing and expectoration, and a wise sexual life, a long interval between pregnancies, and the maintenance of good general health in the healthy conjoint.—Medical Journal and Record.

DEATHS FROM ALCOHOLISM

The Statistical Bulletin of the Metropolitan Life Insurance Company, states in relation to deaths from alcoholism:

That there were 121 deaths recorded from alcoholism during January, February and March, with a death rate of 3.0 per 100,000. This may be compared with 111 during the first quarter of last year, with a rate of 2.9 per 100,000. There were 278 deaths from cirrhosis of the liver, which is closely associated with alcoholism, as compared with 241 during the same period of 1924, the corresponding rates being 6.9 for the first quarter of 1925, and 6.4 for 1924.

Deaths from wood and denatured alcohol poisoning numbered five, as compared with four for the same period of last year, and with twelve in the first three months of 1923.

SIMON J. MURPHY, JR., VS. CITY OF WHITTIER, CALIFORNIA

To the city of Whittier, California, Simon J. Murphy, Jr., a wealthy retired capitalist of Pasadena, donated a hospital as a suitable memorial to his parents. He is said to have spent more than $325,000 on this hospital, but on condition that only accredited regular physicians should be admitted to the staff.

The excellent equipment of the institution looked attractive, however, to the osteopaths and chiropractors of that vicinity, and after some agitation they succeeded in forcing a referendum vote of the citizens. Needless to say they carried the election, with the result that both the staff and the board of trustees have resigned in protest.

Fortunately, Mr. Murphy is both alive and Irish, and he has written a letter to the board of trustees of Whittier and also of the hospital, calling attention to the agreement and contract, which stated that the hospital should be for the exclusive use of accredited physicians. Upon the advice of attorneys, he also stated that the recently enacted ordinance opening the hospital to practitioners of all faiths and creeds was in direct violation of the state law, and although passed by a referendum vote, became a law only because the citizens of Whittier voting for the measure had been misinformed as to the exact nature of the original hospital endowment. Mr. Murphy is now demanding that the city live up to its agreement or refund his $325,000. More power to him! He is fighting in a good cause. The cults have pretty nearly a strangle hold on California, and if he can assist in breaking this hold he will be performing a real service to humanity.

The moral of this little tale is that the people need to be instructed in matters medical to a sufficient extent that they can distinguish between a competent and an incompetent practitioner; and until they are so educated, it is folly to entrust to a referendum vote, matters of a technical nature.—Atlantic Medical Journal.

INFORMATION SERVICE—POST OFFICE DEPARTMENT

Offenses against good mailing practices are not confined entirely to the average man who mails only his yearly quota of 112 letters, Postmaster General New declared today in connection with his beter mailing campaign.

The business man, who is naturally expected to take every precaution in the interest of intelligent communication with his clients or customers, often falls woefully short in providing adequate safeguards for the efficient delivery of his mail.

It is true that comparatively few business letters reach the dead letter office because the business man learned long ago to have his return address printed on his envelopes if only for its accruing advertising value.

There are firms, however, that purposely leave off return cards when sending out circulars and advertising matter. They seek this method of arousing curious recipients to examine letters which otherwise might be consigned unopened to the waste basket.

But "Nixies"—meaning letters requiring directory service before delivery can be effected—are comprised largely of business letters, and this service costs the post office nearly two million dollars yearly.

The practice of buying sales lists—usually antiquated ones—for advertising soliciting through the mails is especially prolific of nixies. The owners of such lists seldom attempt to keep them current although the post office will furnish clerks to revise such lists at the nominal charge of 65 cents an hour.

Advertisers in newspapers, magazines and elsewhere often fail to specify their own street addresses. Answers, therefore, particularly where the advertiser is located in one of the larger cities, just as frequently are returned to the senders.

"That's a penny-wise and pound-foolish policy", Mr. New said. "The return of one letter marked 'not found' will do the advertiser more harm in the

town from which it came than he can repair with many thousand dollars worth of advertising.

"The person to whom it is returned will give him plenty of advertising, but it will be of the wrong kind."

Almost as foolish is the firm—and there are many of them—which fails to carry its complete address, including street number, city and state, on its letter heads and other stationery, particularly, order blanks.

More and more public schools throughout the country are establishing regular courses of instruction in the proper preparation and disposition of mail, not as a favor to the post office, but as a duty to the community—as a contribution to business efficiency, for the postal service is the life blood of business.

The post office department, of course, is in favor of the general extension of this practice, and stands ready to supply teachers and pupils with any information that will aid in such studies.

THE CONDITION OF THE MEDICAL PROFESSION IN AUSTRIA

It is said that a considerable number of physicians have given up practice and have become agents of one kind and another.

There are few private patients, most of the practice is contract practice under the government system and at very low fees. Money is scarce and private patients call a doctor only when the condition is serious, and when necessity compels the employment of a physician, the pay is slow and uncertain.

In country places the conditions of living are such that physicians prefer work of any kind in the cities than to practice in the country. There is one physician to every 450 persons in Vienna and one to every 2,200 in the country.

STATE SOCIETY REVISES CONSTITUTION AND REDUCES DUES

At the annual meeting of the State Medical Society of Texas, Austin, May 7, Dr. William Keiller, Galveston, was elected president-elect; Dr. C. M. Rosser, Dallas, president; Doctors G. B. Taylor, Cameron; C. A. Gray, Bonham, and Minnie C. O'Brien, San Antonio, vice-presidents; Dr. Holman Taylor, Ft. Worth, secretary (re-elected), and Dr. K. H. Beall, Ft. Worth, (re-elected) treasurer. The next annual meeting will be in Houston.

Among the outstanding transactions of the session was the reduction of dues from $15 to $10, the adoption of a complete revision of the constitution and by-laws and the practically unanimous endorsement by the House of Delegates of the publicity and educational campaign conducted last year.—Jour. A. M. A.

UNITED STATES CIVIL SERVICE EXAMINATIONS

Applications for junior medical officer, assistant medical officer, associate medical officer and senior medical officer will be rated as received until December 30, 1925.

The United States Civil Service Commission calls attention to the fact the paragraph entitled "Panama Canal" in announcement No. 36—amended of the open competitive examinations listed above, has been amended to read as follows:

"Panama Canal—The entrance salary for physician, Panama Canal Service, is $225 a month; promotion may be made in steps up to a maximum of $367 a month, and to higher rates for special positions. The salary begins on the date of sailing for the Isthmus. Employes are supplied bachelor quarters at a charge for rent, furniture, water, electric light, and janitor service at approximately $9 a month. Family quarters are supplied when available at a rental of $10 to $25 a month, according to class, and an additional charge is made for electric current, water, and fuel, based on the cost of the service. Meals may be obtained at the Canal Zone restaurants on the Isthmus at about 50 cents each and upward. Vacancies in the Canal Zone hospitals are filled by the detail of officers of the medical corps of the army; openings for civilian physicians, therefore, occur only in the service outside of the hospitals proper, and are few and infrequent."

Issued August 5, 1925.

CHIROPRACTORS

The supreme court, Manila, handed down a decision March 4, that the practice of chiropractic in the Philippine Islands is illegal without the approval of the board of medical examiners, thus confirming a judgment of the lower court, which fined two chiropractors for violation of the medical laws.

Chiropractors have their personal difficulties as well as physicians, but in a different way:

One R. S. Odier a chiropractor at Rittman, Ohio, was held for manslaughter in the case of a child dead of diphtheria.

Two chiropractic schools in Buffalo, New York, were closed by an order of the court.

A chiropractor of Jersey City, New Jersey, was fined $200 for practicing medicine without a license.

A chiropractor of New York, alleged guilty of practicing abortion, was held for homicide without bail.

The New York Assembly on March 25 passed a bill which "will put the chiropractors out of business", and voted down all bills in their favor.

In the Canal Zone, in the cities of Colon and Panama, chiropractors are required to pass the same

examination before the national board of hygiene as is required of members of the medical profession. In West Virginia the supreme court of appeals rules that chiropractors must pass the examinations required for the practice of medicine and surgery.

The Booth bill providing for a separate licensing board for chiropractors in Illinois was defeated in the House of Representatives, May 27, by a vote of fifty-four to seventy.

MEDICAL NEWS NOTES

The Queen's University, Belfast, Ireland, conferred the honorary degrees of doctor of laws on Drs. Charles H. Mayo, Rochester; Franklin H. Martin, Chicago, and Hugh Cabot, Ann Arbor.

The New Hebrew University on the Mount of Olives, Jerusalem, of which the cornerstone was laid during the World War, was formally opened by the Earl of Balfour, April 1. Professor Einstein and Chaim Weizman accompanied Lord Balfour. Jewish physicians in the United States have organized under the chairmanship of Dr. Nathan O. Ratnoff, president Jewish Maternity Hospital, New York, to erect the medical college and hospital of the university, for which ten acres have been purchased on Mount Scopus. The roentgen-ray laboratories and the research institute in microbiology are already functioning.

SOCIETY PROCEEDINGS

Appanoose County Medical Society

The Appanoose County Medical Society met at Moulton, Tuesday, August 18. The meeting was held at the Moulton golf grounds and a splendid program carried out. Dr. W. L. Downing, president of the organization, and Dr. E. D. Sellers, secretary. The following program was given: Handicaps to the Progress of Children Through School, Dr. Jerry Replogle, Udell; Feeding and Management of the Baby up to One Year, Dr. Donahue, Centerville; Diagnosis of Malignant Disease, Dr. D. C. Brockman, Ottumwa.

Presentation of cases.

A little "tribute" to the Doctor, Mrs. T. N. Jayne, Minneapolis.

Business session of the society.

Play golf.

Fayette County Medical Society

The Fayette County Medical Society met Monday evening in Waucoma at the residence of Dr. J. M. Smittle.

A six-thirty o'clock dinner was served. After dinner the society had their business meeting, Dr. Bothwell of Oelwein presiding. Dr. Carr of Clermont was elected president and Dr. Hall of Maynard, secretary for the ensuing year.

After election of officers a paper was read by Dr. Rowan of Iowa City, which was followed by a general discussion. Eighteen doctors were present including Dr. Gardner of New Hampton, one of the district officers of the State Society. Dr. P. H. Belding and Theo. Lichter were invited guests.

Des Moines Valley Medical Society

Des Moines Valley Medical Society met at Ottumwa, June 18, when the following officers were elected: President, Dr. A. P. Johnson, Sigourney; first vice-president, Dr. C. S. Reed, Agency; second vice-president, Dr. W. C. Newell, Ottumwa; secretary-treasurer, Dr. H. A. Spillman, Ottumwa; censors, Drs. C. Shelton, Bloomfield; T. A. Moran, Melrose; J. Porter, Hedrick.

Ames, Iowa, September 5, 1925.

Dr. D. S. Fairchild,
Clinton, Iowa.

Dear Doctor:

As an item of possible interest in your personal column I will advise you that several members of the Iowa profession attended the graduate course of the Colorado Ophthalmological, Oto-laryngological Society, August 8 to 22 at Denver. I recall the following as present, Dr. O'Brien of Iowa City, the new head of the eye department, Drs. Hands of Davenport, Walker of Des Moines, O'Brien and Fallows of Mason City, and Dyer of Ames.

A most excellent course was furnished, clinic eight to ten every morning, lectures, ten to twelve and two to four, round table at lunch from twelve to two, some special lectures after hours. Among the nonresident instructors were John E. Weeks of New York on eye surgery, John F. Barnhill of Indianapolis on throat surgery, Isaac H. Jones of Los Angeles on the internal ear and Dr. Cerf, one of Chevelier Jackson's staff of Philadelphia on laryngoscopy and of course a number of the excellent Denver profession.

Personally, I feel that I have seldom got as much in two weeks time. But then I had lots of room to get.

Very truly yours,

B. G. Dyer,

HOSPITAL NOTES

Boone county is considering the question of voting $100,000 bonds for the rebuilding of the Elinor Moore Hospital which was destroyed by fire July 23.

It is to be hoped that the bond issue will receive favorable consideration as the Elinor Moore Hospital has performed a valuable service in the past, and has a useful future before it.

Hospital in Rheims

The American Memorial Hospital for Children at Rheims, France, has been formally dedicated. This is the first of a group of hospitals planned for con-

struction. It was built at a cost of $300,000, and has an endowment fund of $600,000. Dr. M. Louise Lefort of New York, who has been in charge of the temporary hospital, will be in charge of the permanent hospital for the next two years.—Medical Journal and Record.

PERSONAL MENTION

Dr. C. H. Morse of Eagle Grove, has recently been operated upon for an acute appendicitis at the hands of Drs. Bowen, O'Toole and Sage. Dr. Morse will be remembered as a pioneer physician in Wright county.

Dr. Robert Bess, a recent graduate of the Virginia Medical College, has located in Fort Madison, and will practice medicine associated with his brother, Dr. Thomas Bess.

Dr. G. L. Roark has retired from the firm of Meyer, Roark, and Null of Hawarden.

Dr. F. A. Hohenschuh of Clinton has been enjoying a summer vacation on the Pacific Coast and in Alaska.

Dr. Charles Maxwell of Sioux City has been appointed medical examiner for the United States Veterans Bureau to succeed Dr. G. W. Koch.

Doctor H. J. Jones were elected president of the medical staff, Mercy Hospital, Cedar Rapids, at a recent meeting.

Doctor R. A. Culbertson, a graduate of the Iowa State University School of Medicine of the class 1924, has opened an office in Vail.

Lieutenant Thomas F. Duhigg arrived in Des Moines on furlough July 21 after a cruise in Asiatic water for three years.

Dr. Samuel T. Orton, director of the University of Iowa Psychopathic Hospital, left September 1 on the first lap of a trip that will carry him ultimately to Europe. He will spend a month in New York City and elsewhere in the East, and will then sail for Europe, probably accompanied by his wife. His purpose is to do research work, in London, and at Oxford University, on a project that will require his attention before he finds available the $60,000 recently granted by the Rockefeller Foundation for special work here. This will be ready for Iowa by New Year's.—Iowa City Press.

Dr. E. E. Harris announces his return to practice at Grinnell, after three years' special preparation in this country and Europe. He will devote his attention to mental and nervous disorders.

MARRIAGES

Doctor Richard E. Shope of Iowa City and Miss Helen Ellis of Linville were married at Des Moines, July 28. Doctor Shope is a graduate from the Iowa University School of Medicine and for the past year an instructor.

OBITUARY

Doctor Patrick O'Neill Convery died at Mercy Hospital, Dubuque, July 31, 1925, at the age of fifty-five years.

Doctor Convery was born in County Derry, Ireland, and came to this country when nineteen years old. He attended St. Joseph's College and obtained his medical degree from Rush Medical College, Chicago, Illinois.

After graduation he spent two years as an intern at St. Elizabeth's Hospital, Chicago. After completing his internship he practiced in Dubuque and Oelwein. For the past two years he has been engaged in laboratory work at Cook County Hospital, Chicago, Illinois.

Dr. Louis Boyd Allen was born at Hillsboro, Henry county, Iowa. He died at Mt. Pleasant, Iowa, July 18, 1925.

His parents were Dr. and Mrs. J. B. Allen, his father having practiced medicine at Hillsboro for over fifty years. His grandfather on his mother's side, also practiced medicine at this place in the early pioneer days.

After completing his education in the schools he entered the College of Physicians and Surgeons at Keokuk, Iowa, from which institution he graduated and then engaged in the practice of medicine and surgery with his father at Hillsboro. After a few years he located at Humboldt, Nebraska, at which place he remained for about fifteen years in the practice of his profession. He came to Mt. Pleasant in the year 1900 where he lived until the time of his death, engaged in practice.

Dr. John R. Hughes, eighty years old, pioneer resident of Polk county, Iowa, died recently at Mercy Hospital, Des Moines.

Dr. Hughes was first engaged in the lumber business when he came to Des Moines and later studied medicine and took up his practice here. He was active in practice here for many years.

Dr. Hughes was one of the early graduates of Drake University Medical School.

Doctor M. R. Waggoner of Dewitt, Iowa, died July 20, 1925. Doctor Waggoner was born in Dewitt, July 15, 1864. Graduated from the Hahnemann Medical College, Chicago, Illinois, and after practicing in several places returned to his native town and engaged in practice with his father until the latter's death.

Dr. Albert John Ochsner died at his home in Chicago, July 25, 1925, of angina pectoris, was born in Baraboo, Wisconsin, April 3, 1858, and was educated at the University of Wisconsin, receiving the degree of B.Sc. in 1884 and his medical degree from Rush Medical College in 1886; studied in Vienna and Berlin from 1886 to 1888 when he returned to this country and began the practice of medicine in Chicago in 1888.

Dr. Ochsner became the assistant of Dr. Charles Parks at the Rush College Surgical Clinic and on the death of Dr. Park, assistant to Dr. Senn and furnished much of the scientific material for both of these clinicians for several years. About 1896 Dr. Truman Miller, surgeon at Augustana Hospital, died and Dr. Ochsner succeeded him. The thorough and extended clinical training fitted him for the great work he was about to engage upon. But the most important was his organizing ability and faculty of managing men. Rarely did it happen that Dr. Ochsner failed to have his own way, by patient waiting and logical argument. When Dr. Ochsner became chief surgeon, Augustana was a small and unimportant hospital. Dr. Ochsner, while assistant to the Rush College Surgical Clinic, had thought deeply on the hospital question and had worked out plans he was soon to have an opportunity to put into practice which was in a few years to make the Augustana the most famous hospital in Chicago, and one of the first in America.

In this work he was greatly aided by Mrs. A. J. Ochsner, who as Miss Marion Mitchell had enjoyed the advantages of graduation from a nurse's training school and to whom Dr. Ochsner had been joined in marriage at the beginning of his practice in Chicago.

At the time of appointment to Augustana Hospital, he was also appointed surgeon to St. Mary's Hospital. These hospital facilities afforded Dr. Ochsner opportunities to carry out original ideas of treatment and data for important works on surgery. The Ochsner plan of treatment of appendicitis became generally employed, as far as understood. The proper application of sutures, advocated constantly by Dr. Ochsner had a wide influence among the younger, or occasional surgeon. Many other important suggestions in surgery could be traced to Dr. Ochsner, who was unusually gifted in the way of utilizing plain practical ways of doing things. The great amount of clinical material at his command led Dr. Ochsner to prepare several books on surgical subjects. These books were favorably received by the profession and are too well known to be especially mentioned.

The most useful services rendered the profession by Dr. Ochsner was in the way of organization. There were other men more in the public eye, but none who accomplished more in safe, sound and permanent plans of organization, and the association of Dr. Ochsner's name was always a pledge of the merits of the cause.

In 1900 he was made clinical professor of surgery in the University of Illinois which position he held to the time of his death. He was made chairman of the section of surgery, American Medical Association, in 1900. In the organization of the American College of Surgery he became an important influence in adopting a sound policy. The organization of the college met with much opposition as being a surgical aristocracy and un-American, but the situation was saved by the support and active cooperation of Drs. Ochsner, W. J. Mayo, C. H. Mayo and others.

There were certain facts connected with the rapid development of the practice of surgery which seriously threatened the good name of the surgical profession. Among the leading underlying conditions were the uncontrolled exploiting of operative undertakings and the generally bad condition of hospital administration which favored dangerous commercial surgical activities. Dr. Ochsner was among those who saw the evil consequences of such conditions and by writings and personal influence did much to standardize both the practice of surgery and hospital administration.

The value of Dr. Ochsner's services were recognized in his election in 1910 as president of the Clinical Congress of North America and in 1923 as president of the American College of Surgeons. Dr. Ochsner's contributions to surgery were recognized in European countries and lead to his election to honorary membership in important foreign surgical associations.

His death leaves a void in the American surgical profession, difficult to fill considering the broad field of his activities.

On October 31, 1924, the pharmacologist, Rudolf Gottleib, died at Heidelberg, shortly after passing his sixtieth birthday. He was born in Vienna, finished the customary medical course at the University of Vienna and probably his particular theoretical inclinations were disclosed to him in this way. Without dwelling further upon practical medicine, he procured a thorough chemical education in the laboratory of the medical chemist, Ludwig, in Vienna. The study of quantitative analysis gave him a knowledge of the quantitative side of medical questions and led to a study of the then very present problem of pharmacology, the iron question. One of his first works, "Contributions to the Knowledge of Excretion of Iron in the Urine" (1890), was the result of this study, and his first authorization for the investigation of experimental pharmacological problems. This work appears to have been predestined for him, for shortly afterward we find him in Strassburg in the Laboratory of Schmeideberg, then at the height of its development. With the researches carried on there, on "The Action of Medicaments at Reducted Temperature", he became acquainted with the intimate processes of the organism and also with another branch of pharmacology, the elaboration and analysis of synthetic medicine. Antipyrin was then originated and with it that particular medical industry.

The period spent at Strassburg brought him in intimate contact with two men who were destined to play the most important roles in his scientific life: W. von Schroder and Hans H. Meyer, both at that time employed in the Schmeideberg Institute. New professor's chairs of the branch of pharmacology were at that time being established everywhere and young Gottleib soon left Schmeideberg's laboratory and became assistant to W. von Schroder, who had been called to take the chair at Heidelberg. Von Schroder's work in Heidelberg was of short duration, just long enough to initiate Gottleib in the new

science and in 1898, he succeeded v. Schroder in the professor's chair at Heidelberg, which he held for twenty-six years.

All chapters and questions of experimental pharmacology were studied by Gottleib and his many pupils. New ideas and discoveries in the fields of chemistry and physiology were studied from the pharmacological viewpoint. The fever problem, diuresis, adrenalin, hypophysis and many other questions were investigated at the Heidelberg Institute. He became well known for his work on the digitalis problem, especially its action on the living animal. It is due to Gottlieb's efforts that pharmacology has become more intimately related to clinical medicine than in earlier periods.

His scientific activities coincided with the development of the German medical industry. Students flocked to Heidelberg Institute to study under him. Gottleib had practically grown up with the new science and was familiar enough with the field of experimental pharmacology to feel the necessity of a good text-book on the subject. He collaborated with Hans. H. Meyer in writing a text-book which would explain the fundamentals of experimental pharmacology. The first edition of the Meyer-Gottleib work appeared in March, 1910. Five German editions have appeared up to the present time.

—Journal of Organotherapy.

BOOK REVIEWS

THE MEDICAL CLINICS OF NORTH AMERICA

Vol. VIII, Number 4; Octavo of 374 Pages with 66 Illustrations. W. B. Saunders Company. Paper $12.00, Cloth $16.00.

This, the January number, 1925, is from the Mayo Clinic. The immense amount and variety of material at the command of this clinic at once appeals to us, as a number of unusual interest. The great number of subjects presented compels us to refer to a few only of especial interest to the general practitioner.

The problems of diseases and disorders of the intestinal tract appeals to us at once for various reasons and first we find "Cancer of the Esophagus", by Dr. Porter P. Vinson, followed by "Peptic Ulcer and Palpable Masses", by Dr. Howard R. Hartman. "Problems in the Diagnosis and Treatment of Gastrointestinal Disorders", by Dr. Chas. S. McVicor. Duodenal Ulcer: An Anatomic Study", by Drs. H. E. Robertson and Estes H. Hargis.

Included under these titles will be found much that relates to stomach and intestinal disorders. There are three titles relating to the urinary tract, one of particular interest by Dr. H. C. Bumpus, Jr., on "Pyelonephritis Treated with Mercurochrome". "The Treatment of Goiter by Iodin", by Dr. William A. Plummer, is a subject of particular interest at the present moment and will be read with much interest. The discussion of the "Basal Metabolic Rate in Cases of Primary Cardiac Disease", by Dr. Walter M. Boothby and Dr. Frederick A. Willus, and "Acute Coronary Obstruction", by Dr. Willus, are attractive and helpful discussions of subjects exciting unusual interest. "Cases of Vascular Diseases Affecting the Feet" (Thromboangitis Obliterous, Raymond's Disease and Erythromelalgia), are subjects of recent interest and no little difficulty, which are presented by Dr. George E. Brown. One more of this wealth of subjects we must present, "The Value of Definite Methods of Treatment of Malignant and Non-malignant Conditions", by Dr. Harry H. Bowing and Dr. J. Herbert Bliss.

THE PHYSIOLOGY OF MIND

Francis X. Dercum, M.D., Philadelphia, Pennsylvania. W. B. Saunders Co.

Among the many recent publications dealing with the mind and its activities is one especially worthy of attention. The second edition of the little book written by Dr. Francis X. Dercum, of Philadelphia, entitled "The Physiology of Mind", is one of the most systematized efforts to correlate the data pertaining to the evolution of the nervous system which it has ever been my pleasure to read. By means of comparative anatomy and physiology the author systematically carries the reader from the amoeba to the human and builds up a workable theory of the activities of mind based upon the reactions of the neurons to various stimuli. The most attractive feature of the book is the theoretical light which is thrown upon the subject of the transmission of nervous impulses and the role which is played by the synapses in the production of consciousness and unconsciousness.

F. A. Ely.

THE PRACTICAL MEDICINE SERIES

Comprising Eight Volumes on the Year's Progress in Medicine and Surgery, Under the General Editorial Charge of Charles L. Mix, A.M., M.D. Series 1924, Chicago. Volume I, "General Medicine", Edited by George H. Weaver, M.D.; Lawson Brown, M.D.; Robert M. Preble, A.M., M.D.; Bertram W. Sippy, M.D.; Ralph C. Brown, B.S., M.D. The Year Book Publishers, 304 South Dearborn St., Chicago, Ill.

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The purpose of this series of volumes is to review recent medical literature and abstract such papers as the men entrusted with the work believe to be of a sufficient value to engage particular attention. The vast number of papers which find their way into the

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REPORT ON THIRTY-SEVEN CASES OF ACUTE POLIOMYELITIS TREATED WITH ROSENOW'S SERUM*

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In submitting this report of an epidemic of poliomyelitis, I am prompted by the hope that it may, in a measure, help to hasten the day when an accepted remedy may be had in successfully combating this terrible malady. I wish to predicate my remarks by saying Rosenow's serum is not being advocated as a specific but to simply present the facts in order that those interested may make their own deductions. If Dr. Rosenow has perfected a curative serum, time will prove it and the credit which should be his will certainly be forthcoming. Remedies for the treatment of disease are much like new models in automobiles, inasmuch as it is the user, after all, who proves the virtues and also uncovers the weak points.

During the months of August and September, 1924, there were reported to the board of health in Clinton, Iowa, thirty-seven cases of acute poliomyelitis. The first case appeared on August 5, and the last one on September 26. The explosive manner in which the disease began intimated that an epidemic might be imminent and case record forms were prepared with the idea of gathering detailed information. Seven years previously I went through an epidemic of poliomyelitis in which Rosenow's serum was used but I did not have the foresight to keep complete case records. I am free to confess to you as I did to Dr. Rosenow during this last epidemic that I had some misgivings as to the efficacy of his serum. This data has been for the most part secured by me personally at the bedside as I attended personally or was associated with the attending physician in thirty of the thirty-seven cases. The principle part of this report is the tabulation of each case under several headings and your attention is directed to this report for more detail.

*Presented before the Seventy-Fourth Annual Session, Iowa State Medical Society, Des Moines, Iowa, May 13, 14, 15, 1925.

Date of Onset—Not more than two cases appeared on any one day.

Distribution—Although the tabulation does not show it, the disease was widespread, no part of the city being spared and there was no history of contact with a known case. In only two instances were there more than one case in the same family.

Age—There were eighteen cases between three months and five years; thirteen cases between six years and fifteen years and six cases between sixteen years and twenty-five years.

Acute Symptoms—The acute symptoms were as a rule moderate, twenty-five being so reported, eight as slight and four severe.

Fever was usually very moderate, there being only a few cases as high as 104° F. The average was about 101° F. The outstanding symptoms were neck rigidity, lassitude, muscular soreness, nausea and vomiting, and pain, the last more particularly when the patient was handled. Constipation was present in nearly half the cases but it is a question, what, if any, bearing it had on the diagnosis. Hyperasthesia was frequently present but has probably been recorded more often as muscular soreness. Patellar reflex was so variant as not to be a reliable sign. Babinski and Kernig were present in only eight and six cases respectively. All suspected cases were interrogated as to evidence of involvement of the central nervous system and every case showing these symptoms was submitted to immediate spinal puncture, the diagnosis resting on the spinal fluid findings.

Duration of Acute Symptoms—The duration of acute symptoms was not usually over four days; in two cases it was ten days.

Duration of the Disease at the Time First Serum Was Administered—Serum was given as soon as diagnosis was confirmed and twenty-six of the thirty-seven cases had the serum before the end of the second day; thirteen of the twenty-six cases within one day or less.

Day from Date of Onset to Date of First Paralysis—The rapidity with which paralysis supervened was characteristic, eleven being paralyzed within twenty-four hours and all who developed paralysis presenting it within four days.

Paralysis at the Time of First Serum—Nineteen were paralyzed before serum could be administered, six being slight, four moderate and nine marked.

Parts Paralyzed at Time of First Serum—Arm or leg or both, fifteen; face only, one; one leg and face, one; soft palate; one; back muscles and one leg, one.

Paralysis Developing After Administration of Serum—There were five of these, two of the five after the third dose, and in these cases the serum was continued.

Spinal Fluid Findings—When paralysis was present on first visit, no spinal puncture was done, except in one instance when it was performed to clear up a baffling case and in one to relieve pressure and ascertain any change in the cell count from the original.

Days from Date of Onset to Date of Puncture—Of the twenty-six on whom a spinal puncture was performed, fifteen were punctured on the day of onset or the next day, early spinal fluid findings always being urged.

Spinal Fluid Pressure—The pressure was increased in twenty-three of the twenty-six cases punctured.

Cell Count—The cell count in those diagnosed as poliomyelitis was from six cells to seven hundred cells. A cell count of less than six was disregarded and only one case with a cell count as low as six developed paralysis. This particular case, which happened to be the last one of the epidemic, did develop paralysis of one leg the next day. Serum was immediately administered and the following day the child got out of bed and walked across the room. He made a complete recovery within forty-eight hours from the date of first treatment.

Rosenow's Serum—Serum was administered in every case and usually intravenously, dosage being regulated by age and severity of the symptoms. Single injections ranged from 10 c.c. to 35 c.c. Seldom was less than three injections given but three cases had five. The intravenous injections were always given slowly, 1 c.c. per minute.

Serum Reaction—Only four developed any immediate serum reaction. All but three or possibly four had a late serum rash. Usually it was very severe. We learned to forewarn the families of this and outside of extreme discomfort, lasting from a day to four days, no untoward results appeared. Soothing lotions were used and in a few cases adrenalin was administered.

Death of Recovery—There were no deaths.

Paralysis as of April 1, 1925—No improvements, two; slight improvements, two; marked improvement, five; slight paralysis, one; very slight paralysis, two; no paralysis, twenty-five. Concerning the two cases showing no improvement, both cases were seen late and the paralysis was absolute. One has paralysis of both legs and the other of one arm.

Time will not permit giving the history of all cases but I do want to present the history of a few.

Case 1. J. B., age fifteen years. Working on a farm. Date of onset, August 5. Felt tired and stayed in bed. August 6, had difficulty in raising coffee cup to his mouth. August 7, right arm completely paralyzed. August 8, brought to his home in Clinton. August 9, Dr. Geo. Hofstetter was called in the morning and I saw the case in the afternoon, Rosenow serum wired for. August 11, 12 and 13, serum administered, 66c.c. in divided doses. The acute symptoms were slight. Lassitude and neck rigidity were the only prominent ones recorded. He received his first serum on the sixth day. He has made no improvement.

Case 9. S. W., male, age three months. Referred by Dr. H. F. Kaack. Difficult to obtain reliable history but known to have been ill on August 18. I saw him late on the evening of August 22. Temperature 100° F., marked desire to sleep, patellar reflex absent, neck rigidity, head markedly retracted, unconscious, right leg complete flacid paralysis, left leg slight paralysis. August 22 and 23, 15 c.c. serum administered. August 24, child appears better, head retraction not so marked, shows signs of returning consciousness, 15 c.c. serum administered. August 25, improved. The child continued to improve and on September 2, record shows general condition excellent, paralysis right leg. April 1, 1925, only paralysis right leg, but it is very marked.

Case 16. J. F., male, age eleven years. Dr. F. M. Keefe, attending physician. Date of onset August 28, at noon. Acute symptoms moderate, temperature 100° F., lassitude, restlessness, constipated, patellar reflex, right slight, left none, neck rigidity. Date of spinal puncture, September 29. Cell count 165, pressure increased, acute symptoms lasted twenty-four hours. He had 20 c.c. Rosenow serum intravenously on August 29, 30, 31. There was never any evidence of paralysis. Complete recovery.

Case 17. J. R., female, age ten years. Dr. H. J. Heusinkveld, attending physician. Taken suddenly ill on the afternoon of August 30, came in the house from playing, complained of feeling badly, threw herself on the bed and in a few minutes was unconscious. I saw her within a few minutes with the attending physician. She was profoundly unconscious, rectal temperature 98° F., vomited, patellar reflex absent, positive Kernig and Babinski, slight neck rigidity, right arm and right leg paralyzed. If we had to deal with a poliomyelitis case it was different than anything we had seen before. Spinal puncture brought apparently clear blood, increased pressure. It was impossible to get a reliable cell count but

there was present 750,000 reds and leucocytes in proportion. She was given 20 c.c. Rosenow serum intravenously. At the end of sixteen hours she had regained consciousness and paralysis had practically disappeared. On September 1st, another spinal puncture was done for diagnostic purposes, the spinal fluid still being slightly bloody and under increased pressure. A few hours later she again became unconscious. She was seen late the same evening by Dr. Rosenow who pronounced it a case of poliomyelitis and 30 c.c. of serum was administered intravenously. The next day she showed signs of returning consciousness and the serum treatment was continued. Within three days she was apparently quite normal and made a complete recovery with no paralysis. Dr. Rosenow reports having previously seen two similar cases late, both of which went to autopsy. He inoculated rabbits with the streptococcus isolated from the brain substance and in each case produced poliomyelitis.

Case 19. B. R., female, age three years. Referred by Dr. H. F. Kaack. Date of onset, August 20. Acute symptoms slight, temperature 100° F., lassitude pain in left calf, marked desire to sleep, patellar reflex absent, neck rigidity. Date of first paralysis, September 1. Case was seen by Dr. Rosenow and myself September 2, drags left leg, back muscles show moderate paralysis, spinal puncture done, cell count 132, pressure increased, 16 c.c. serum given intravenously. September 3, 5 c.c. concentrated serum given intravenously and 11 c.c. intermuscularly. This concentrated serum was five times as strong as the regular. September 4, 29 c.c. regular serum intermuscularly. As of April 1, 1925, this child has made almost a complete recovery, very slight weakness to extensor muscles of left leg.

Case 20. G. H., male, age five years. Date of onset September 1. Acute symptoms moderate, temperature 99° F., lassitude, patellar reflex exaggerated, neck rigidity. I saw this case with Dr. Rosenow on the morning of September 3, only evidence of paralysis, muscles of back weak. Child walked unsteadily, cell count 245, pressure normal. This child had received diphtheria antitoxin a year before so she was given immediately 1 c.c. Rosenow serum and 5 c.c. later same day in an effort to desensitize her. On September 4, 5 and 6 she had a total of 41 c.c. intramuscularly. She made a complete recovery.

Case 21. K. W., male, age five and one-half years. Dr. W. M. Walliker, attending physician. Date of onset September 2. Acute symptoms moderate, temperature 100° F., muscular soreness, lassitude, pain in legs, constipated, patellar reflexes right exaggerated, left normal, Kernig present, neck rigidity. He shows a drag to left foot. Spinal puncture on September 3, eight p. m., cell count thirty-six, pressure increased. He had 15 c.c. Rosenow serum intravenously on September 3, 4 and 5. By the end of third day there was no evidence of any paralysis. He made a complete recovery.

Case 23. G. L., age eight years. Dr. M. S. Jordan, attending physician. Date of onset, September 5. Acute symptoms severe, slight sore throat, lassitude marked desire to sleep, Kernig present, neck rigidity, September 6 spinal fluid gave a cell count of 700, pressure increased, 30 c.c. serum given intravenously on September 4, 6 and 7. On the afternoon of September 7, he developed paralysis in both legs and by September 10 both arms were paralyzed and he was unconscious, head markedly retracted. The paralysis came on after the third dose of serum, and we hesitated about giving more. It seemed quite certain the boy was going to die. On September 11 the second spinal puncture showed a cell count of twenty-five and we gave him an additional 30 c.c. of serum and 30 c.c. more on September 12. On September 13 he began to move his left arm and September 15 he spoke for the first time and began to move his right arm. He continued to improve and made a complete mental recovery. On September 28 had almost complete use of his arms and could extend both legs and flex the right. As of April 1, 1925, he has recovered except for marked paralysis in one leg and slight in the other. He walks with braces. His improvement is progressive. A sister, Case 25, was desperately ill at the same time. She had the bulbar type of poliomyelitis. She received altogether 120 c.c. of serum and made a complete recovery. No paralysis.

Case 24. B. R., female, age four years. Dr. Grace Schermerhorn, attending physician. Date of onset September 6. Acute symptoms severe, temperature 102° F., muscular soreness, angina, abdominal pain, neck rigidity. Child shows slight drag to right leg. Spinal fluid on September 6 shows cell count of 150, pressure increased. Rosenow serum administered intravenously 15 c.c. on September 6, 7 and 8. Acute symptoms subsided within four days and paralysis became less. September 25 record shows very little evidence of any paralysis to right leg. As of April 1, 1925, full recovery, no paralysis.

Case 33. D. H., female, age twenty years. Dr. M. S. Jordan, attending physician. Date of onset, September 18. Acute symptoms severe, temperature 103° F., nausea, vomiting, muscular soreness, lassitude, pain, Kernig and Babinski present, neck rigidity. I saw this case September 20, no paralysis was present, cell count 328, globulin test positive. She was given 20 c.c. serum intravenously at 4 p. m. The next morning she had paralysis of both legs, right complete. She had a total of 135 c.c. serum within the next three days. She developed almost complete paralysis of right leg and moderate paralysis of left. As of April 1, 1925, very marked improvement, able to walk with aid of braces, improvement progressive.

Now referring to the tabulation; no doubt some of the cases showing an increased cell count might not have developed paralysis. No doubt others in the community apparently not ill, or only slightly so, might have shown an increased cell count if an opportunity had been given to test them. It would have been interesting and instructive to have had spinal fluid findings on a series of healthy children during this epidemic, but of

course, that was impossible. I agree, the serum may be taking credit for non-appearance of paralysis in some cases showing an increased cell count; this on the assumption that paralysis would not have come on any way. Nevertheless in the presence of an epidemic, given a child even slightly ill, manifesting even slight involvement of the central nervous system and who shows an increased cell count, the physician would be remiss in his obligations not to consider the case one of poliomyelitis. There were about a dozen children suspected as poliomyelitis cases on whom a cell count was negative and none of these, though untreated, developed paralysis, except the last case (No. 37), already referred to, in which the cell count was 6.

I have purposely omitted any history of the disease with its increasing frequency in this country. Neither have I taken the time to review the various unsatisfactory treatments that have come over the medical horizon from time to time. These are all familiar to you or at least you have access to the literature on the subject.

As to etiology, I have nothing new to offer. I am of the opinion that in a widespread epidemic, such as we experience, many, if not most, of the inhabitants harbor the causative germ, probably in their upper respiratory tract and the reason so many escape is because in relatively few is the nervous system susceptible to the infecting agent.

Rosenow's serum was used with full knowledge that its value is denied by some celebrated investigators. Particular pains were taken to always advise the relatives of the patients that no promise could be made as to the curative nature of the serum, but that Dr. Rosenow believed it to have specific curative properties. The serum was used in every case. Drugs were used for the relief of pain, restlessness, constipation, and fever. I was skeptical of the curative properties of the serum when I began to use it. I was probably hypercritical towards it during the epidemic, but gave it freely and just as early in each case as possible. I was determined the serum should have every opportunity I could afford it to show its value.

We are apt to measure the efficiency of Rosenow's serum by the curative properties of diphtheria antitoxin. I doubt if this is a just comparison, knowing as we do the early and selective destruction the infecting agency in poliomyelitis has on nerve tissue.

Today, looking at the epidemic in the retrospect, I can say I would use the same treatment under the same circumstances. Time will prove whether the serum has specific curative properties, and I know of no better way to settle the dispute than for others to use it as it was used in this series of cases and report results.

Success apparently depends on early diagnosis and prompt treatment. Bedside examination of the spinal fluid and immediate intravenous injection of the serum is demanded. Diagnosis must be made early on physical signs and spinal fluid findings. If you wait for paralysis to supervene before instituting treatment you have lost your best opportunity to effect a cure. The serum is of doubtful value in cases paralyzed for several days. Twenty-four hours of paralysis is just twenty-four too long. Serum should be used, but the opportunity to effect a cure lessens with each hour's delay after paralysis comes on. The slogan during an epidemic should be; "Every physician on his toes".

The difficulties in the treatment are:

First: Inability to see your cases early, before paralysis has developed. This is particularly true at the beginning of an epidemic and in sporadic cases.

Second: The large number of children presenting prodromal symptoms so slight as not to alarm the parents, and to mislead the physician.

Third: The rapidity with which paralysis frequently intervenes.

Fourth: The necessity of spinal fluid findings.

Fifth: Intravenous administration; especially is this so in infants and young children.

Sixth: The large amount of serum required.

I did not go through this epidemic trying to prove the value of Rosenow's serum, rather I tried to "hew to the line and let the chips go where they might". Rosenow's serum must stand or fall on preponderance of evidence and this report is submitted as part of the evidence. I sincerely hope the ultimate verdict may be in favor of the serum.

I desire to express my great appreciation to Dr. Don Griswold, state epidemiologist, and to Dr. Rosenow, who observed some of the cases with me and likewise to the physicians of Clinton for their splendid cooperation and efficient service.

Discussion

Dr. August R. Anneberg, Carroll—I want to impress on our minds the necessity of complete case records for every one of our cases, and then only after the summing up of the accumulated evidence can we tell of the value of Rosenow's serum or that of any other investigator. Rosenow gave us freely without charge all the serum we needed for our epidemic. The only condition attached was the complete case records or reports sent to them, which helps Rosenow and his workers decide on its efficiency. It certainly ought to tell in a few years if

uscular Soreness. (4) Coryza. (8) Restlessness. (9) Con- ed Desire to Sleep (12) Con- Patellar Reflex. (15) Neck	Duration of Acute Symptoms	Duration at Time of First Serum	Date of First Paralysis	Paralysis at Time of First Serum Marked Moderate Slight None	Paralysis before Serum	Degree Paralysis at First Serum Marked Slight None	Paralysis Developing after Administration of Serum	Total Amount of Serum	SERUM REACTION Immediate None Moderate Severe	SERUM REACTION Late None Moderate Severe	SPINAL FLUID FINDINGS Date of Puncture	SPINAL FLUID FINDINGS Pressure Inc. Normal	SPINAL FLUID FINDINGS Cell Count	Death or Recovery	Paralyzed as of April 1, 1925	
	3 da.	6 da.	Aug. 6	Marked	Yes	R arm complete	No	66 c c	Moderate	Severe	None	..	.	Recovery	No improvement	Arm remains useless
	3 da	6 da	Aug. 10	Marked	Yes	R leg marked	No	10 c c.	None	Not known	None	..	.	Recovery	Slight improvement	Physician discharged after first serum tr. and chiropractor employed Still paralyzed.
	3 da.	4 da.	Aug. 13	Marked	Yes	R arm marked	No	45 c c.	None	Severe	None	..	..	Recovery	Slight improvement	Arm almost useless
	2 da.	3 da	Aug. 10	Marked	Yes	Soft palate marked	No	40 c.c	None	Severe	None	..	..	Recovery	None	Complete recovery No record of acute symptoms
	2 da.	10 da.	Aug. 6	Marked	Yes	R facial L. leg slgt	No	60 c c	None	Severe	None	..	..	Recovery	None	Complete recovery No record of acute symptoms
	2 da	2 da.	Aug. 18	None	No	None	L. leg moderate L. lumbar slight	70 c c.	Severe	Severe	Aug. 16	Inc	275	Recovery	Marked improvement	2nd dose delayed 2 days and in meantime, paralysis came on.
	5 da	5 da	Not paral.	None	No	None	No	60 c c.	Severe	Severe	None	..	..	Recovery	None	No opportunity for spinal fluid exam and it remains an unproven case.
	4 da	4 da	Not paral.	None	No	None	No	30 c.c	None	Severe	None	..	..	Recovery	None	No opportunity for spinal fluid exam. and it remains an unproven case
traction	4 da.	4 da.	Aug. 20?	Marked	Yes	R leg marked	No	45 c c.	None	Severe	None	..	..	Recovery	Marked improvement	Desperate case. Cerebral involvement. Leg still paralyzed
nt	1 da.	2 da.	Aug. 21	Marked	Yes	L. leg marked	No	62 c.c.	None	Severe	None	..	..	Recovery	Marked improvement	Taken ill away from home Paralyzed when first seen Still paralyzed.
	3 da.	1 da.	Aug. 24	Slight	Yes	Leg slgt	No	45 c c	None	Severe	Aug. 24	Inc.	50	Recovery	None	Complete recovery
	3 da	2 da.	Aug. 26	None	No	None	Orbicularis Oris moderate	60 c c	None	None	Aug. 26	Inc	66	Recovery	Very slight	Very slight facial defect
	6 da	2 da	Aug. 27	Marked	Yes	Both legs complete	No	60 c c	None	Severe	Aug. 27	Inc.	35	Recovery	No improvement	Absolute paralysis both legs when first seen. Practically no improvement
rmal (15)	2 da	2 da.	Not paral	None	No	None	No	40 c c	None	None	Aug. 27	Inc.	83	Recovery	None	Complete recovery
15)	36 hr.	36 hr.	Not paral.	None	No	None	No	42 c c.	None	Severe	Aug. 28	Inc	52	Recovery	None	Complete recovery
gt., l. none (15)	24 hr	30 hr	Not paral.	None	No	None	No	62 c c.	None	Severe	Aug. 29	Inc.	165	Recovery	None	Complete recovery
scious (16) (17)	5 da	3½ hr	Aug. 30	Marked	Yes	R. arm R leg marked	No	80 c c	None	Severe	Aug. 30	Inc.	Blood	Recovery	None	Paralysis and unconsciousness suddenly 2nd puncture still bloody Complete recovery
) (16)	1 da	1 da.	Not paral.	None	No	None	No	69 c c.	None	Severe	Aug. 30	Inc	70	Recovery	None	Complete recovery
(15)	3 da.	3 da.	Sept. 1	Moderate	Yes	L. leg moderate	No	72 c c.	None	Moderate	Sept. 2	Inc	132	Recovery	Slight	Marked improvement Gets around splendidly with leg brace
	3 da.	2 da.	Sept. 3	Slight	Yes	Back mcls. & L. leg M	No	50 c.c	None	Moderate	Sept. 3	Normal	245	Recovery	None	Complete recovery
(15) (17)	2 da.	1 da	Sept. 3	Slight	Slight	Slgt. drag one leg	No	46 c c.	None	Severe	Sept. 3	Inc	36	Recovery	None	Complete recovery
	3 da.	2 da	Not paral	None	No	None	No	51 c.c.	Severe	None	Sept. 6	Normal	170	Recovery	None	Complete recovery.
	10 da.	1 da	Sept. 7	None	No	None	Both arms and legs, cerebral	150 c.c.	None	Severe	Sept. 6	Inc.	700	Recovery	Marked improvement	Paralysis came on after 3rd dose Coma 5 days Serum continued. Leg still paralyzed. Marked imp
5)	3 da.	1 da	Sept. 9	Slight	Slight	R. leg very slight	No	45 c c.	None	Severe	Sept. 6	Inc.	150	Recovery	None	Complete recovery
	10 da.	2 da.	Sept. 9	None	No	None	Bulbar	120 c.c.	None	Severe	Sept. 8	Inc	109	Recovery	Complete recovery	Sister of No. 23. Bulbar type. Complete recovery
	3 da.	1 da.	Not paral.	None	No	None	No	50 c c.	None	Moderate	Sept. 9	Inc.	540	Recovery	None	Complete recovery
slight (15) (16) (17)	2 da.	2 da	Not paral.	None	No	None	No	75 c c.	None	Moderate	Sep. 11	Inc	49	Recovery	None	Complete recovery
1	2 da.	2 da.	Not paral.	None	No	None	No	60 c c.	None	Severe	Sept. 14	Inc.	12	Recovery	None	Complete recovery
	3 da.	2 da	Not paral.	None	No	None	No	90 c c	None	Severe	Sept. 15	Inc.	238	Recovery	None	Complete recovery.
	7 da	Few hrs	Not paral.	None	No	None	No	50 c.c.	None	Severe	Sept. 15	Inc	540	Recovery	None	Complete recovery
(15) (16)	4 da.	1 da.	Not paral.	None	No	None	No	20 c.c.	None	Moderate	Sept. 17	Inc.	11	Recovery	None	Complete recovery
	2 da.	1 da.	Sept. 16	Slight	Yes	L. foot	No	45 c.c	None	Severe	Sept. 17	Inc	12	Recovery	None	Complete recovery
(16) (17)	36 hr.	48 hr.	Sept. 21	None	No	None	Both legs	135 c c.	None	Severe	Sept. 20	Inc.	328	Recovery	Marked improvement	Paralysis came on few hours after serum. Both legs, L. almost complete, L. still very marked
(14 slt.) (15) (16) (17)	3 da.	6 da.	Sept. 18	Slight	Yes	L. arm and L. leg	No	40 c c	None	Severe	Sept. 24	Normal	12	Recovery	None	Possible slight defect in grip.
	3 da.	4 da	Sept. 25	Moderate	Yes	L. facial	No	30 c.c.	None	Moderate	None	..	.	Recovery	Very Slight	Very slight facial defect
(16)	12 hr.	2 hr	Sept. 26	Moderate	Yes	L. leg and L. arm	No	50 c.c.	None	Moderate	None	..	..	Recovery	None	Complete recovery in 24 hours
(15)	4 da	1 da.	Sept. 29	Moderate	Yes	L. leg	No	50 c c	None	Severe	Sept. 28	Inc.	6	Recovery	None	Complete recovery within three days

DATE OF ONSET

Day	Cases	Sept	Cases
8	2	1	1
9	1	2	1
10	2	4	1
15	1	5	1
16	1	6	1
17	1	7	1
18	1	9	1
20	1	11	1
21	1	12	1
24	1	13	1
25	1	15	1
26	2	16	1
28	1	17	1
29	1	18	2
30	2	22	1
		26	1
		28	1
Total			37 cases

BY AGES

Ages	
3 mos. to 5 years	18
6 to 15 years	13
16 to 25 years	6
Total	37

Severe	1
Moderate	28
Slight	8
Total	37

Temperature

98 to 104 2

Average About 101

ACUTE SYMPTOMS

Symptoms and Signs	
Nausea	10
Vomiting	10
Muscular soreness	13
Coryza	6
Angina	6
Lassitude	21
Pain	1
Restlessness	9
Constipated	16
Diarrhoea	6
Marked desire to sleep	5
Convulsions	6
Hyperaesthesia	5
Patellar reflex	
Present	13
Present on one side only	3
Exaggerated	3
Absent	4
Not recorded	14
Neck rigidity	2
Babinski present	8
Kering present	6

Duration of Acute Symptoms

1 day and less	4		
2 days	10		
3 days	12		
4 days	1		
5 days	3		
6 days	1		
7 days	1		
10 days	2		
Total	37		

Duration Disease at Time First Serum Was Given

Less than 1 day	3		
1 day	10		
2 days	13		
3 days	2		
4 days	4		
5 days	1		
6 days	3		
10 days	1		
Total	37		

Days from Date of Onset to Date of First Paralysis

Same day	6		
1 day	5		
2 days	7		
3 days	5		
4 days	1		
Not paralyzed	13		
Total	37		

Paralysis at Time of First Serum

None	18		
Slight	6		
Moderate	4		
Marked	9		
Total	37		

Paralysis before Serum

Yes	19		
No	18		
Total	37		

Parts Paralyzed at Time of First Serum

Arm, leg or both	15		
Face only	1		
One leg and face	1		
Soft palate	1		
Back muscles and one leg	1		
None	18		
Total	37		

Paralysis Developing after Administrating Serum

Yes	5		
No	32		
Total	37		

Total Amt of Serum Administered

Less than 40 c.c.	4		
40 to 80 c.c.	28		
80 to 100 c.c.	2		
Over 100 c.c.	3		
Total	37		

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there is any value to the serum or not. The epidemic we had two years ago in our community was not in reality an epidemic, but consisted of five cases widely separated and in no way connected together. Rosenow's serum was used in four cases and all improved. Every case still has some paralysis and we do not know from our small group just how much good it really did. Our fifth case, which was not given the serum, improved to the same degree. Our case records were not as complete as those of the essayist, and that is just one point I wish to make and drive home, the complete report, as accurate and unbiased as it can be made, and I think that is the manner in which the essayist handled his cases. In the diagnosis of our cases Dr. Throckmorton of Des Moines consulted with us and concurred in the diagnosis. In all of these cases the diagnosis was not made until paralysis was present. The attending physicians who brought these cases in were not called until a parent noticed the inability to use certain muscles. The diagnosis was established from that and from the other points. In all these cases the spinal fluid was under pressure and with an increased cell count. Acute anterior poliomyelitis we have had with us all through modern medicine, and no doubt we will always have it with us more or less until our scientific workers are able to produce some means of establishing immunity. So also, we will always have with us some of those pitiful human derelicts as a grim reminder of the ravages of this terrible disease. At present the question with us is how to prevent or reduce these bad results. We, the general practitioner, must be up on our diagnosis and must be up on our toes to make the diagnosis. In epidemics it is very easy, but in the sporadic cases it so often simulates one of many other conditions until the telltale paralysis appears and clinches the diagnosis, and then it is rather late for some cases.

Dr. Don M. Griswold, Iowa City—I was fortunate enough to see these cases with Dr. Sugg, and enough information came out of that epidemic to crystallize my ideas regarding poliomyelitis. I think the study of these thirty-seven cases will give all of us a clearer conception of poliomyelitis and its symptomatology than is in any text-book that I, at least, have seen on the subject. I hope Dr. Sugg's article will be published in the State Journal so that it will be available for serious study. I am glad to go over these figures again and learn from them, as, I assure you, one cannot get all the valuable data in once going over them. As to the effect of Rosenow's serum, I think perhaps we are inclined to be doubtful of its results, because we are not giving it more liberal use. The essayist has given us the idea that all through this epidemic he was not doing damage to any patient by giving a sufficient quantity of the serum. Of course, that does not allow for any factor of control. It is not possible to say how many would have recovered without the use of the serum. But these scientific points we should and will know in time. Howevere, the welfare of our patients is the primary purpose, and unless we keep that firmly in mind we are likely not to give the patient the best service. Therefore we should administer the serum in suspected cases, for if we wait until the diagnosis is established it is too late for serum to be of much account. Dr. Sugg's method of handling the epidemic is the best I have seen, for Clinton had a large epidemic and no hysteria about it. The people there were not telling all the wild tales we so frequently hear when the incidence of communicable disease is unusually high. That was, I think, due to the good judgment of Dr. Sugg, the health officer, and if we wish to handle these epidemics more efficiently than in the past it will be necessary for us to overcome the hysteria that so often develops when communicable diseases appear. I hope that in future we will have more work along the line which Dr. Sugg has detailed to us today.

Dr. Sugg—I am sorry that somebody did not bring out ideas with reference to some other line of treatment, as I rather expected would be the case. I presume that many of you have not had opportunity to use the serum, and if not, it is not possible for you to have much to say about it. With reference to Dr. Anneberg's discussion, there are, of course, difficulties in arriving at a diagnosis. According to my experience, when you have been called in to see a suspected case during an epidemic and are required to determine whether or not you are dealing with a case of infantile paralysis, the situation you are in is something not to be cherished, for in spite of all, you can determine by physical examination, when you leave the house you have the feeling, well, perhaps after all that is a case of infantile paralysis and tomorrow the child may be paralyzed. So go over the case carefully and spend lots of time in trying to determine if there is any definite evidence of involvement of the central nervous system, and, if you find any evidence, by all means do spinal puncture. I have left many a house and was uneasy for days thinking that perhaps the child might develop infantile paralysis when I had told the family that such was not the case. That is what we are up against. Fortunately, I escaped this humiliation. I wish to thank Dr. Griswold and Anneberg for their discussions.

RABIES*

With Report of a Fatal Case After the Pasteur Treatment

T. A. Moran, M.D., Melrose

Rabies is defined as an acute infectious disease of animals which may be communicated to man, characterized by excitement, hyperesthesia, deglutitionary spasm and paralytic weakness. It is caused by a specific but unknown virus; and the disease, when not specifically treated, ends in death.

The earliest mention we have of rabies dates back to the time of Aristotle. We have no com-

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prehensive description of the disease, however, until that given by Celsus in the first century A. D. In the second century literature we find other very complete descriptions by Caelius, Aurelianus and Galen. But not until Pasteur attacked the problem in 1882 was there anything definitely known of the true nature of the disease; and although he failed to isolate the specific microorganism which he believed to be its cause, nevertheless he was eminently successful in discovering a specific treatment for its prevention.

In 1903 Negri demonstrated that certain microscopic bodies (called Negri bodies in honor of their discoverer) are often found in the cells of the central nervous system of rabid animals: he showed that these, when present, are conclusive evidence of the disease, but that nevertheless their absence does not constitute proof that the animal was not rabid. In the early stages of the disease they are often not demonstrable, but they nearly always are in the later stages. This discovery has marked a great advance in early diagnosis and added much to our knowledge of its pathology; enabling us to institute the proper treatment much earlier than before.

The disease appeared in America in the North Atlantic states about the year 1768; and since that time nearly every state in the union has suffered from its ravages. The present epidemic in Iowa, which appeared first a little more than a year ago in the southern half of the state, is the worst we have experienced in twenty-two years.

While the loss of life due to this cause is not great compared with that occasioned by many other infectious diseases, yet this mortality is preventable, by proper quarantine measures. In England, where rabies was at one time a scourge, it is now practically unknown on account of rigid quarantine and other civic regulations.

In 1923 there were ninety-one Pasteur treatments sent out by the commissioner of public health to thirty counties in this state. In 1924 there were two hundred twenty-four treatments sent out to sixty counties; and this only approximates the number, as some undoubtedly were obtained from other sources. These figures show that during 1924 the infected area doubled and that the number of persons bitten almost trebled. Since January 1 of this year to April 1, seventy-two treatments have been sent out. If the disease continues to spread at this alarming rate for the remainder of the year, three hundred or more treatments will have been used, showing that the disease is not abating but rather is on the increase.

The five counties reporting the largest number of persons bitten were Appanoose, 25; Wapello, 12; Webster, 14; Muscatine, 19; and Monroe, 11. The commissioner of public health reports four deaths from rabies in the state during the year 1924—three of them being in Monroe county.

A disease such as rabies that has doubled its area and trebled the number of persons exposed in twelve months, is, I believe, entitled to the serious consideration of this society and of all health officers, civil officers, epidemiologists and veterinarians, not only in this state, but in every state in which the disease exists, as it is only by a universal effort that the disease may be eradicated.

Rabies attacks most frequently the carnivorous animals, particularly the dog, although all warm-blooded animals are susceptible to the disease. It is transmitted from one animal to another usually by a bite, but if the saliva from a rabid animal comes in contact with a recent abrasion of the skin, it may be transmitted in this manner. The disease may also be transmitted by means of milk or meat from rabid animals, but there must first be an abrasion somewhere along the alimentary tract. If there is no abrasion, there is little danger of contracting the disease in this way. There has been a case reported, however, of a baby contracting rabies from nursing its mother while she was in the early stages; the virus probably entering through the teething gums. Rabies does not occur spontaneously, as is a popular belief in some sections. Seasons of the year have no influence on its transmission or virulence; there are often more cases reported in winter than in summer.

Man possesses some natural immunity from the disease, as only about 20 per cent of those bitten on exposed surfaces, as the face or hands, and 10 per cent of those bitten through clothing will develop it. The clothing wipes the saliva from the teeth of the animal before they reach the flesh.

The incubation period is quite variable both in man and in the lower animals. In man it is seldom less than ten days, but may be a year or more in the untreated case. Various factors influence the length of the period: it is shorter in the female than in the male; shorter in children than in adults; shorter when in close proximity to large nerve trunks; shorter when the bite has been inflicted on the face or neck. The virulence of the infecting virus also greatly affects the length of the incubation period. Most authorities place the incubation period at from three to eight weeks. In the fatal case reported in this paper it was twenty-eight days.

Nitch has pointed out that in a large series of cases, deaths which occurred after the Pasteur treatment occurred earlier than in the untreated cases. This is merely what one would expect when the rationale of the Pasteur treatment is understood: for immunity is not fully established until two weeks have elapsed after the completion of the treatment.

The causative agent has never been isolated for study in pure culture. The Negri bodies which are found in the brains of rabid animals are thought by some to be this infectious agent. Others feel that the Negri body is a nerve cell which has degenerated because of the proximity of rabies poison. For diagnostic purposes it makes no difference.

The pathology of rabies is found almost entirely in the central nervous system and in the peripheral nerves.

There are two forms of the malady which occur in man and the lower animals: the furious or violent form, and the dumb or paralytic form. The furious type has a characteristic effect on the dog: although in his natural disposition he may have been lazy, apathetic, morose or sullen, he undergoes a complete change; he becomes playful, affectionate, chases stock, and in general becomes very "peppy", as a patient of mine who had been bitten described his dog. This continues for only a day or two, when the animal becomes snappish, resents interference, refuses food, and eats sticks and dirt instead: he finally leaves and wanders off, sometimes going as far as twenty or thirty miles from home. He will bite anything or anybody who happens in his way, and there is no way of estimating the number of other dogs he has bitten or the great damage he has done to stock in his rambling. He wanders until he finally becomes exhausted and dies.

The dumb or paralytic form occurs less frequently. In this case the actions of the dog are quite opposite: paralysis appears in the early stages, without symptoms or frenzy or irritability. He crawls into a quiet, secluded spot, and dies in from two to three days.

I can best describe the symptoms in the human by giving the history of a case which occurred in my practice a year ago.

J. N. F., a lad of eight years, was scratched on the tip of the nose by the claws of his pet dog, a large collie, while he and a neighbor's boy were playing ball, with the dog running after the ball and bringing it to them. The neighbor's boy was scratched on the arm. No attention was paid to the injury until the next day, when the boy's mother was bitten while trying to drive the dog out of the yard with a broom. The animal attacked her, severely biting her on the left arm, back and hips. Her husband, who happened to be working close by, came to the rescue. In getting the dog loose it was necessary to put his hands into its mouth and pull the jaws open, and in so doing he was scratched on the hand. A veterinary was called a few hours later and pronounced the dog rabid. It was killed and the head sent to the laboratory at the State University at Iowa City. On May 22, a positive report was received from the laboratory.

Pasteur treatment was begun on Mrs. F. the day following her injury. Her husband refused the treatment until the report was received from the laboratory—being of the doubting Thomas type.

The treatment was immediately begun, after receipt of this report, on the father, the son, and the other boy who had been scratched on the arm, and continued without interruption for twenty-one treatments. Mrs. F.'s treatments were concluded on June 6 and the others on June 9, twenty-two days after they were bitten.

On June 15, twenty-eight days after his injury, J. N. F. became ill. The family by this time had such confidence in the treatment that they thought the illness due to some error in diet or a bilious attack, an indisposition to which he had been subject from time to time. Also, which will be remembered, he was scratched on the nose, not bitten, which fact had a tendency to dispel fear of rabies.

They called me on the morning of June 18, three days after the beginning of his illness. He had a temperature of 100, pulse 100, and complained of some soreness of the throat. Results of inspection of the tonsils, pillars, and pharynx were negative. I handed him a glass of water to drink. He took it in his hands with a vise-like grip, staring at it intently with apparent fear and dread. He succeeded in getting a few drops of water into his mouth. The attempt to swallow produced a spasm of the muscles of the pharynx and neck, resulting in strangulation resembling that of getting a foreign body into the larnyx. I saw him again that evening; his condition had changed but little from that of the morning. He passed a restless night. The next morning at about 7:30 he had a convulsion. He vomited several times during the day, each vomiting spell bringing on strangulation and choking. At 9:00 a. m. his pulse was 150 and his temperature 104. His appearance indicated a high degree of intoxication. His mind seemed perfectly clear, and his expression anxious. He was very restless. I gave him 1/8 gr. morphine with 150 of atropine. This had a quieting affect which lasted about four hours, when it was repeated.

He never complained of pain. He talked to his mother incessantly, instructing her as to how to arrange his pillow, the position he wanted to be placed in, how to fan him, and calling members of the family to his side. He was continually changing his position and requesting to be moved from one room to another. This continued until 7:00 p. m., when he had another convulsion, and death closed the scene.

He had been neither vicious nor violent at any time. His illness lasted four days, beginning on June

19—six days after completing the Pasteur treatment. The incubation period in this case was twenty-eight days. The time intervening from date of injury to death was thirty-two days. None of the others bitten or scratched by the dog contracted the disease. This case cannot be charged to a failure of the Pasteur treatment, because of the two weeks' period not having elapsed after completion of the treatment. As stated before, complete immunity is not established until two weeks after the treatment has been completed: which shows the necessity of beginning it at the earliest possible moment. This case is the second reported in Iowa terminating fatally in spite of the Pasteur treatment during the past six years. The other case was reported from Burlington about a year ago.

The diagnosis is usually not difficult. The diseases with which it may be confounded are lyssophobia or pseudo-rabies, and tetanus. Lyssophobia is brought on by worry and by a very great fear of the disease, and shows itself particularly among nervous women who may have been bitten by a dog. It has no relation whatever to true rabies, and the symptoms are usually entirely out of line with those evidenced in rabies. The paroxysmal rigidity of tetanus, the setting of the jaws, aids in eliminating this disease. There are those in the profession who believe that tetanus is the real cause of death in all cases, and that rabies is a non-entity. However, it is only necessary to have seen the symptoms manifested in each disease to be fully convinced that there is little similarity between the diseases.

While the prognosis is practically 100 per cent fatal, yet no patient should be abandoned. Everything possible should be done to relieve his sufferings. The treatment is purely symptomatic. If he lives more than a week, the diagnosis may be questioned.

The treatment which has proven of most value is prophylactic and consists of immediate cauterization of the wounds followed by the Pasteur treatment. Cauterization is most effective within the first hour after the injury, and may be of value even after several hours have elapsed.

A method used by many is to first cauterize the wound by thoroughly swabbing it first with pure carbolic acid, which produces some anesthesia, following immediately with pure nitric acid and neutralizing the excess with a solution of sodium bicarbonate. Great care should be exercised in seeing that every part of the wound is thoroughly cauterized by the acid. Apply a dry dressing and begin the Pasteur treatment at the earliest possible moment. Carbolic acid has of itself no value as a cauterizing agent for the prevention of rabies.

The Pasteur treatment, like many of our specifics in medicine, is not 100 per cent perfect; neither is it entirely harmless. There are some persons who will not react to diphtheria antitoxin, antitetanic serum, etc. Probably there are likewise some who will not respond to the Pasteur treatment. There are a few persons who are hypersensitive to any protein substance, which probably accounts for its dangers. Remlinger collected data on 107,712 persons who had received the treatment and found but forty cases of treatment paralysis and only one death in this series.

From .5 to 1.3 per cent of persons bitten by rabid dogs will die of rabies, in spite of the Pasteur treatment; while 15 per cent of untreated cases usually result in death. An instance is reported in which fifteen Indians were bitten by a rabid dog. Eight came for Pasteur treatment, while the remaining seven did not. No rabies developed in the eight treated patients, while of the seven untreated, five contracted and died of the disease.

Any treatment after the beginning of the disease is only palliative. The remedies which have proven of most value are chloroform inhalations, bromides per mouth or per rectum, and morphine in liberal doses hypodermatically.

The Pasteur treatment is given hypodermatically, in a manner similar to that of giving diphtheria antitoxin, and may be obtained by wiring the commissioner of public health in this city. I used the treatment in five cases during the past year: the youngest being a child of two years, the oldest a man of fifty. There was a slight local reaction at the site of the injection, but no general reaction was noted. The patients complained of no malaise or discomfort at any time during the course of treatment. I know of no contra indications against its use.

Treatment paralysis is merely mentioned as a possibility, and should in no case deter one from giving the treatment. The symptoms are insomnia, headache, feeling of numbness in some part of the body, followed rapidly by paralysis which may become general. It may be difficult in the beginning to differentiate it from the paralytic form of rabies; but its rarity, early outset after beginning treatment (usually about a week), little if any temperature, and the termination, in most cases, by recovery, aid in distinguishing it from true rabies. The treatment should be discontinued upon evidence of symptoms. No particular treatment is indicated.

Some of the superstitions believed in by the laity are that the disease may occur spontaneously in dogs, particularly during the summer months. This of course is not true, as it can be transmitted only by a host harboring the disease;

and in the active stage, usually by a bite. A dog in the incubative stage will not transmit the disease until after the period of invasion. Climatic conditions and seasons of the year have no influence on its prevalence or virulence. Another fallacy of popular belief is that if a person is bitten by a dog and the dog subsequently goes mad, the person will contract rabies. This of course is not true for reasons stated above.

The madstone, popular as a remedy in years gone by, is now known to have no therapeutic value whatever. It is composed of tricalcium phosphate concretions, which came from the intestinal tracts of lower animals.

In no communicable disease are preventative measures more applicable than in rabies. It is a reproach to the enforcement of quarantine regulations in Iowa that this dreaded disease should, in twelve months, be permitted to double its infected area and endanger the lives of three times as many people as it did in the preceding twelve months. I believe it to be a safe prediction that, at this rate, by the end of the next twelve months no county in the state will be free from rabies. I have no way of estimating the monetary value of stock lost because of the disease, but I am sure it would run into thousands of dollars. And estimate, if you can, the untold anguish and mental suffering of the persons bitten.

During the past year, certain persons, humane societies and kennel clubs, well-meaning but evidently uninformed as to the real status of rabies in Iowa, have through the public press and in the legislative halls opposed measures calculated to prevent the spread of the disease—such as the immunizing of dogs by inoculation—on the grounds that such measures are inhumane and would be injurious to the health of the dogs. I cannot but believe that if they had first-hand knowledge of the grief and worry experienced by fathers and mothers in putting their children, bitten by rabid dogs, through a course of Pasteur treatment in an effort to keep them from going mad, they would not oppose any reasonable measures which would protect the dogs from this terrible disease. I believe that if the dog itself, the most intelligent and most loyal of our domestic animals, knew that by receiving a prophylactic dose of vaccine, it would thereby be protecting his master and the children who play with him, it would choose to take the treatment. As the situation stands in Iowa today, no family is safe with a dog on the premises. No one can tell what moment a stray rabid dog may come along and infect him, endangering thereby not only the lives of that family, but of every family in the neighborhood and even families miles distant.

While this paper was being written, the writer noticed an account in the Chariton, (Iowa), Leader, under date of April 28, 1925, of eight persons having been bitten by a pet squirrel which was later proven rabid by laboratory tests. The eight are now taking Pasteur treatment. This squirrel was bitten by either another rabid squirrel or a rabid dog, and there is little doubt that he infected several other animals before he was finally killed.

Some of the measures advocated for the eradication of the disease are destruction of all unlicensed ownerless dogs, prophylactic inoculation of other dogs, muzzling, and quarantine. The stray dog is one of the most potent factors in the spread of rabies, and should be killed on sight. The public should be fully informed of the dangers. The disease can be completely eradicated in a few months by concentrated effort. The responsibility for loss of life rests upon the officers of the community, if they fail to do their duty in rigidly enforcing all legislative measures aimed at the disease. Not only civil officers, but also physicians, veterinarians, and health officers should insist on strict enforcement of the quarantine law.

The medical profession has rendered a wonderful service in pointing out the cause, and the method of handling the disease. Its eradication is a matter that calls for whole-hearted, energetic civic regulation.

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Discussion

Dr. Samuel T. Gray, Albia—The Doctor is to be congratulated on the timeliness of this subject and the able manner in which he has presented it. Statistics show that rabies has been steadily increasing in the United States, and the essayist has shown how rapidly it is increasing in Iowa. Rabies is getting to be a serious health problem. It has always been a dreadful disease. The terrible agony and sure death puts it in a class by itself. The uncertainty of contracting rabies when exposed to a rabid animal, the long drawn out period of incubation, and the uncertainty of a positive cure even under specific treatment as in the Doctor's case, are sufficient to put a feeling of terror in any person subjected to the disease. Rabies must be considered both as to its occurrence in the lower animals and in man. Most of the common, well known animals have been proven to contract rabies. By far the greatest per cent of cases occur in the dog, and a very small fraction of one

per cent in man. We are principally concerned about the disease in man. The dog is the primary cause of the existence of rabies, he will always be kept by man as a pet and as one of the most useful of animals, so the elimination of the disease from the dog is the only way to control and eradicate the disease. Selters reports that the deaths of human beings in the United States from rabies from 1917 to 1921 were 168. Of this number thirty-nine died during and after treatment. Rochaix of Paris in 1924 reports a case of rabies in a young man after a latent period of over a year, in spite of prompt specific treatment. Dumitresco-Mante report in 1923 the history of a patient who was bitten by a rabid dog and died from rabies three years later. He had been given prophylactic Pasteur treatment at once after the bite. Eichom gives a table for years 1920-1923, showing over 8,000 positive examinations of dogs in state laboratories, over 20,000 persons given rabies treatment and 131 persons died from rabies. At the conclusion of the war rabies became a menace in most of the central European countries and has been continuing in spite of strict measures being applied. In Russia within one year over 50,000 persons had the Pasteur treatment. Japan suffered much also from rabies. No country has been able to stamp it out by quarantining and muzzling dogs. Umeno and Doi of Japan made a specially prepared and relatively active virus for prophylactic immunization of dogs, and since 1919 has greatly reduced rabies by prophylactic inoculation of dogs by the single dose rabies virus. Out of 140,000 dogs the cases of rabies were 120 times more in uninoculated than in inoculated dogs. Vaccinating dogs in this country has been tried out very successfully, and extensively enough to prove a positive prevention. This is now the accepted method of controlling rabies in dogs. It is a loss of time and a waste of money to quarantine dogs. In England and Wales there has not been a case of rabies for three years and the Minister of Health has decided that special arrangements for antirabic treatment are no longer necessary. When a dog bites a human being the dog should not be killed, but kept under observation. The correct diagnosis in the animal is very important as to the treatment in man, and of great mental satisfaction to the patient. Killing the dog will likely destroy the positive means of a diagnosis. Rabies is a community problem, and will increase or be eradicated just as the community sees fit. The public must be educated and should know the facts about rabies. Whenever the public accepts the proven facts that rabies can be prevented in man by the Pasteur treatment and that dogs can be immunized by vaccination, rabies can soon be eradicated. The people do not know this. Immunization of animals for rabies is new. It requires the cooperation of the public to control rabies. There should be no guessing about diagnosis or any evasion as regards laboratory reports or any selfish interest shown to make the public suspicious of the whole thing. Rabies is a preventable disease, and it is a reflection on the intelligence of any community to allow it to exist and spread. The epidemic of rabies in Monroe county has cost the county about $3,000, according to the best estimate of the county auditor. Extending over the state of Iowa, this means about $300,000 outlay. It would have paid our county to have vaccinated all dogs free some time ago.

MASSAGE AND MOVEMENTS IN THE TREATMENT OF FRACTURES*

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Concerning this important question I have nothing new to advocate; I wish only to reawaken your consciences and to recall to your attention what you all know but what some of you may have forgotten.

Many neglect entirely these very useful aids; others don't use them enough; some, at least, misuse them. Massage and movements should not replace the old established methods of reduction and immobilization, whether by traction, by apparatus or by operation, but they should be made use of wisely and carefully, thoroughly and patiently, as aids to our other treatments. If they are used properly they will shorten the period of convalescence and diminishing the resultant disability.

My own interest in this matter has been greatly stimulated by the work of Dr. James B. Mennell and I have learned much from his work at Shepherd's Bush during the war and later at St. Thomas' Hospital, from his books and from discussions with him. His two books: "Massage: Its Principles and Practice" and "The Treatment of Fractures by Mobilization and Massage" are well worth studying.

What do you mean by massage and movements? If you mean turning your fracture cases over to a strange masseur with no instructions, I don't wonder that you have been disappointed with your results. Just as improper reduction and splinting can result in pitiful disabilities, so can careless, rough massage and strenuous, forced movement do great damage. The proper use of these methods requires knowledge, skill, patience, judgment and gentleness. If any of these are lacking the method had better not be used at all.

The various forms of massage can be simply described as stroking, compression and percussion. Stroking may be superficial or deep. Until one has tried superficial stroking personally one is very dubious of the claims made for it.

*Read before the Inter-State Post-Graduate Assembly of America, Milwaukee, Wisconsin, October 27-31, 1924.

Mennell's description illustrates my own experience. He had gone to Paris to study the methods of Lucas-Championniere, one of the pioneers in this work. He had been urged to try pressure over very recent fractures with the idea of limiting the hemorrhage and the primary swelling. The patient did not like this and was apprehensive, alert, with muscles tense, expecting sudden pain. More to distract his attention than for any other reason, he began to stroke the forearm and arm away from the site of injury. When he stopped, the patient said: "Oh, please go on; it feels so good!"

It is really astounding at times what effect can be obtained in very recent cases. The pain subsides, the muscles relax, the swelling decreases. Again let me emphasize that I am speaking of superficial stroking, so light, as the Frenchman says "as to resemble a caress." The effect of this may be partly mechanical, due to aid given to the venous and lymphatic return, yet it must have other effects as well, for as Mennell has pointed out, it works about as well whether it be done in centrifugal or centripetal direction, provided it is only done in one direction. At least part of its effect is reflex. But whether it be reflex or mechanical or both, clinically the effect is real.

With the deeper form of stroking, when pressure is brought to bear on the deeper parts more of the effect must be mechanical and this form should only be used in a centripetal direction. In carrying out this form the pressure should be enough to aid the venous return but not enough to impede the arterial flow. Most of the deep stroking, as well as the other forms I shall mention, is carried out by the majority of masseurs with too much force. The only period when even moderate force is to be tolerated is in the later stages or in neglected cases.

By compression we mean kneading, friction and petrissage. There is no sharp line between these. Let us consider, for example, a boggy, edematous leg: by direct pressure with the thumbs or fingers we can squeeze out some of the fluid—this is kneading; if with the pressure we move around on the deeper parts it is called friction; if we pick up the tissues and squeeze them it is petrissage. The various forms of percussion massage are not indicated in the handling of fractures. These various forms of massage do have definite and usually immediate results. Muscular spasm is reduced; pain is reduced; the venous and lymphatic return is aided, edema decreased and the general vasomotor condition improved.

What do we mean by movements? Theoretically a patient's joints can be moved passively or actively, that is, they can be moved for him or he can move them himself. Pure passive motion is rather difficult to obtain without an anesthetic, as the patient almost always contributes some muscular effort. The gradations between so-called passive motion or relaxed motion and active motion are gradual. A term—"guided active motion"—has been used to describe the intermediate stage. The patient's muscles can be exercised and re-educated by assisting the operator in performing the movements or by resisting the movement, bringing into play the opposite set of muscles. Mennell calls these "assistive" movements and "resistive" movements. The effect of such movements, whether active or passive, is seen especially on the muscles, tendons and joints, but also on the circulation and so on the process of repair.

Having examined into the character of our tools, let us visualize our problem before we take up their selection and the technique of their use. What is our main object in these cases? To restore as completely and as quickly as possible the function of the injured part. To understand this problem, therefore, we must realize the pathology of the injury itself and the repair of that injury. We are dealing with patients who have had an injury which has resulted in a broken bone. But is the fracture itself the only result of that injury? Rarely. In many of the cases it is the associated lesions which lead to delay and disability and against which we must direct our endeavors.

Let us take a simple example—a Colles' fracture without displacement. The radius is broken across, the periosteum is somewhat torn, there is hemorrhage from the ends of the bone and from the periosteum. There is pain referred to the site of injury and an impairment of function—a decrease in power. The muscles are contracted to a varying degree—spasm. At first there is the swelling from the hemorrhage, localized, perhaps only noticeable to deep palpation. This is soon succeeded by a more extensive swelling due to edema. Movements in the wrist and finger joints are decreased in power and extent, and this limitation increases rather rapidly.

Suppose the injury has been more severe; the inferior radio-ulnar joint and the radio-carpal have their ligaments well stretched, perhaps torn; the fibro-cartilage separating the two may be torn loose at one attachment or in its middle; perhaps the internal lateral ligament tears off the styloid of the ulna.

Take an injury more severe yet: The fragments have been displaced, the fibres of the pronator quadratus or the short thumb extensors lacerated, with resultant hemorrhage and so on to more distant structures, flexor tendons in their sheaths, median or ulnar nerves, interosseus membrane up to actual compounding of the fracture and contamination.

In the more serious injuries the clinical picture is more exaggerated; the slightest movement causes a sharp increase in the pain and in muscular spasm. There is the local pain of the injury, the pain of crepitus when the fragments are moved, the dull ache of tired muscles as well as that of any congested area. The process of repair starts soon after the injury; organization of the blood clot and the formation of new connective tissue is a matter of not many hours, and this is going on not only at the broken bone ends but in the soft parts as well. These are the reasons for immediate reduction—reduction during the fliud stage rather than waiting for solidification to take place. So, too, will the effects of massage be somewhat influenced by the time.

What is the customary treatment of these cases? We all do certain things:

(1) We reduce the displacement, if any exist, at the earliest possible moment. Few of us, today, are guilty of that awful sin of "waiting till the swelling goes down." How the author of that phrase must look down (or up) in horror at the crimes that were committed in his name!

(2) After overcoming the displacement—or "setting the fracture" we rest the affected part and protect it from further injury.

Only too often does treatment cease with these two measures until union is firm enough to withstand ordinary trauma, when the protecting apparatus is removed and the patient told to "go ahead and use it."

Proper reduction is essential to a good result —and you will notice I said "proper" and not "complete"—but that is another story. Rest is necessary, as is also enough immobilization to avoid recurrence of the deformity. In no way would I minimize the importance of these details of the treatment. But I do strongly urge the additional use of these other most important aids, massage and movements.

What can we expect to gain from their use? First, in the immediate treatment: I would ask you to try the effect of the gentlest superficial stroking in an early case and see if it will not ease the pain, relax the spasm, decrease the early swelling and often simplify the reduction. After reduction, before union is firm, daily use of the same superficial stroking, combined with very gentle movements of the adjacent joints will be of great service if they are carefully carried out. But if done roughly or carelessly, they may do a great deal of harm. Mennell tells the story of a French masseur who had tremendous success and incurred the jealousy of the surgeons of his time. He never would tell the secret of his success until one time his son's life was saved by an operation for peritonitis and when the surgeon who operated asked him what his secret was he said: "I never hurt my patients." That is the great secret of the proper use of massage and movements: Never hurt the patient. Massage or movements which cause pain have been carried on too strenuously or too long.

As in the immediate stage, the result is a decrease in pain and discomfort, an improvement in circulation and so a hastening of repair. It also prevents much of the stiffness in joints and muscles, lessens the amount of atrophy and shortens the time for return of full power. Somewhere I have read the statement that when a joint is injured there is a marked tropic interference with the muscles acting on that joint. This certainly is true in many cases. I was greatly impressed with this in some meniscus cases I have done recently. Formerly, after operating on knees for displaced cartilages, I immobilized them in plaster for some time. Recently these cases have started moving their knees the day of or after operation and keeping up motion several times a day in order to maintain the tone of the thigh muscles on which the knee joint depends for its stability. The marked atrophy of these muscles I used to think was due to disuse, and I have been greatly surprised at the amount of atrophy which has occurred in spite of immediate and daily use—much less than formerly but still marked. Early massage and movements will decrease this atrophy but will not avoid it.

In the early stage deep massage should only be used for obstinate or marked edema which does not respond to the lighter stroking. The compression forms of kneading, etc., also should be sparingly used. During this stage movements must be gently performed, starting with passive and encouraging the patient to take over his share of the work as rapidly as possible. They must not only be carried out with great gentleness, but never allowed to a degree which will endanger the position of the fragments. Where these tend to slip out easily, movements of the adjacent joints are often directly contra-indicated until union is firm. As union does become

firm movements should be increased in range and amount as rapidly as possible.

Where these aids have been neglected for some weeks the more strenuous degrees may be necessary to get rid of the dense edema, to stimulate inactive muscles, to break up adhesions in tendon sheaths and perhaps in joints, to gently and gradually stretch contracted muscles and ligaments. In each case it will be necessary to visualize as far as possible the exact pathology and not force things too far.

Some Details of Massage

"I never hurt my patients."

Both patient and operator must be comfortable, that the former may relax his muscles, that the latter may conserve his energies.

The first aim is to get relaxation of the patient. Begin at a distance and gradually approach the site of injury but in the early stages do not quite reach it.

Be gentle.

Avoid pain.

Who shall do it? At first, the doctor himself. In the early stages the doctor himself or some skillful person, personally trained, who shall receive definite and specific instructions in each case. If the doctor himself cannot attend to it or no such trained person is available, it is better for the patient to go without it entirely until union is complete.

The amount must be carefully graded. If the pain has increased or if motions possible decrease—it means we have gone too far and a day or two of rest is indicated. Any signs of inflammation are a definite contra-indication.

The same rules hold for motion. They must also be carried out with care as to detail, avoiding overstrain on injured or contracted ligaments or muscles.

In the later stages many devices can be suggested to encourage the patient, marbles, tennis balls, various gymnasium appliances.

No mention has been made of heat or electricity, not that they do not have a real use in the treatment of fractures, but merely because their use was not included in the title of this paper.

Let me repeat again that massage and movements can be made to be of tremendous help in shortening the process of repair, in increasing the amount of functional return and in decreasing the pain and discomfort of the patient. Their proper use requires knowledge and skill, patience and judgment and, most of all, gentleness.

THE INTERPRETATION OF THE COUGH SYMPTOM*

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Symptoms, or the reaction of the tissues to injurious agents, have been the chief guides in diagnosis since the beginning of the medical era. The investigation of symptoms has not, however, received the close attention it deserves, mainly because of the prevalent belief that the requirements of diagnosis are generally met by simply noting the presence or absence of symptoms, and that a clear conception of their mechanism is not essential. The reasons for this lack of interest or enthusiasm are on the one hand, a neglect to appreciate the true value of symptoms in distinguishing disease processes through knowledge acquired by a study of their production; and, on the other, the great difficulty encountered in pursuing this line of research, chiefly because methods for such investigation do not exist. The progress made in physiology, bacteriology, chemistry, and allied sciences has been as rapid as it has been remarkable, especially when compared to the tardy advance in symptomatology. Yet, with this high attainment in the so-called laboratory studies, none of us would venture the opinion that the facts acquired by an inquiry into symptoms are less valuable than those obtained by laboratory methods.

The early manifestations of disease, especially in their acute forms, are chiefly those of disordered function, when remedial measures offer the best chance of success. The later stages are characterized in the main by alteration of structures.

The act of coughing consists essentially of a violent expiration, the air current being driven swiftly and forcibly through the bronchi, trachea, larynx, and mouth for the purpose of removing material from the air passages. As a rule, a deep and often quick inspiration precedes the expiration. Just before the expulsion of air, which is the main feature of the act, the vocal bands are approximated through the contraction of the adductor, constrictor or phonatory muscles of the larynx—the lateral crico-arytenoids, the arytenoids, and the thyo-arytenoids. The expiratory phase begins just before the separation of the approximated vocal bands, thereby causing the intrapulmonic pressure to rise momentarily. When the required tension is reached, the larynx

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opens, and the air sweeps out with the production of the characteristic cough sounds. Their acoustic qualities are due to the intensity of the air current, peculiarities in the tension of the vocal bands, differences in the diameter of the air passages, and variations in the consistency of material contained in the respiratory tract.

The muscles effecting the forcible expiration bring into action abdominal and thoracic groups; the muscles of inspiration—the diaphragm and intercostals; the muscles closing the glottis—the adductors of the larynx. They are governed by nerve mechanisms which concern:

(1) Spinal centers and their efferent nerve fibers.

(2) The inspiratory and the expiratory centers in the medulla, which excite and coordinate spinal centers.

(3) The adductor laryngeal center and its efferent paths.

(4) The various afferent nerves which stimulate the inspiratory, expiratory and adductor centers.

(5) The cerebrum.

The existence of a special coordinating center controlling the act is still a matter of controversy. The evidence at hand lends weight to the opinion that such is not the case.

Coughing is generally volitional. When occurring during sleep, in soporous states, and in violent paroxysms, its purely reflex nature is suggested. It is difficult to determine to what extent it is an unconditioned or pure reflex; or to what degree it is a conditioned reflex, that is, one intensified by cerebral activity, perhaps volitional, since sensations of discomfort referred to the throat are often present.

Its mechanism appears to be as follows: In the unconditioned or purely reflex cough, the irritation to the afferent terminals being of a mild character, the nerve impulses are conveyed to the medulla, causing: (1) Increased activity of the inspiratory center; (2) stimulation of the adductor or constrictor center of the larynx; and (3) increased excitation of the expiratory center. (a) The inspiratory muscles; (b) the adductor muscles of the larynx, and (c) the expiratory muscles contract in response to this stimulation.

With more pronounced irritation, especially when located in the interarytenoid region (supplied by the superior laryngeal) impulses of greater intensity are transmitted, which not only reach the medulla where they stimulate the centers just named, but some of them pass upwards to the cerebrum where sensations are evoked and recognized as tickling, distress or pain referred to the throat. In the cerebrum, nerve impulses are now discharged and transmitted to the medulla. A purely reflex cough is converted into a more or less volitional act by the descending impulses which reinforce the function of the centers activated by the ascending impulses—conditioned reflex. The combined effects of the ascending and descending impulses intensify the action of the muscles innervated by them.

In volitional cough, impulses descend from the cerebrum to the centers in the medulla.

Causes—It is not the object of the author to attempt a systematic discussion of cough in various diseases in which it is symptomatic, but rather to emphasize its importance in some morbid affections with the hope of throwing light on its mechanism and clinical interpretation. Bedside studies, carried out in a painstaking manner, are the chief, if not the only, means for the solution of these problems.

The regions in the body susceptible to stimulation, their extent and distribution, and the nature of the stimulus effecting the reaction, have been the subject of extended investigations, which, however, have not clearly elucidated this problem.

Cough may be produced by irritation in certain parts of:

(1) The respiratory passages—larynx, trachea, bronchi, pharynx and naso-pharynx.

(2) The pleura.

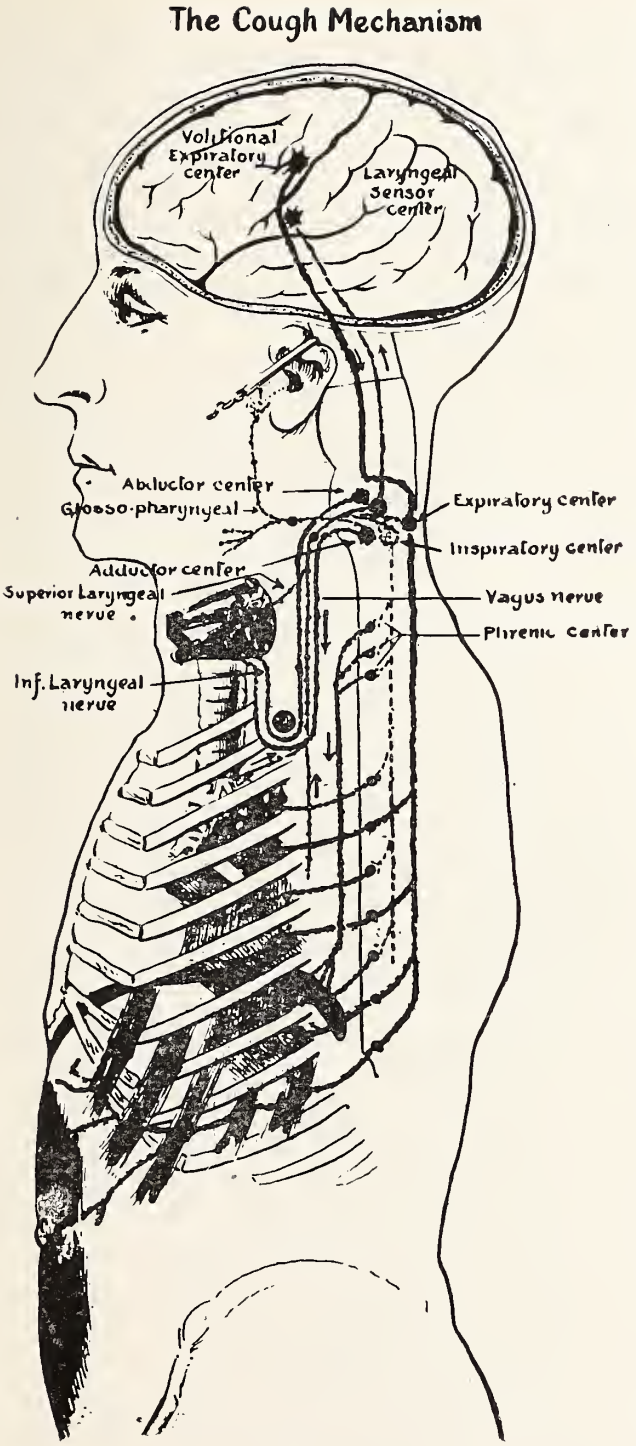
(3) The mediastinum.

(4) The external auditory canal.

In reflex cough, the interarytenoid region is the chief area from which afferent impulses arise. Slight irritation of the normal mucosa in this locality by a variety of substances is followed by paroxysms of varying severity. This action is augmented when the organ is the seat of congestion and acute inflammation.

In pulmonary disease, as chronic ulcerative phthisis, when the products discharged from the diseased lungs and bronchi reach the larynx, they provoke coughing as a rule. These paroxysms often continue until all the phlegm is expectorated.

Evidence has been brought forth showing that the tracheal mucous membrane is capable of evoking the act with certain forms of stimulation. Sudden pressure of a bronchoscope on the mucosa of the trachea produces it, but this excitation is quickly tolerated, shown by cough subsidence without removing the instrument. When, however, a new area is touched, it returns. This low state of sensitiveness stands in strong contrast to that of the interarytenoid region, where the irritation is resented, and must, as a rule, be removed before the seizure ceases.



The dry harsh cough so conspicuous in the early stages of many cases of influenza appears to have a tracheal origin. A clearer understanding of its mechanism in grippe points the way to better management in therapeutics.

Stimulation of the larger bronchi, especially at the bifurcation of the trachea, appears capable of causing the reflex. These structures have a low state of irritability. The morning paroxysms in patients suffering from chronic pulmonary tuberculosis are probably of bronchial origin. On awaking, when the individual changes from the dorsal to the sitting position or turns on his side, the secretions accumulated during the night suddenly shift and effect stimulation.

It is not known whether the reflex can be evoked by excitation of the smaller bronchi.

The question whether the vesicular structure of the lung is supplied with afferent nerve terminals is also impossible to answer definitely. Clinically, a negative opinion is offered in acute cases of pulmonary consolidation characterized by an absence of bronchial exudate, which run an atussive course. The author observed an interesting example of this kind occurring in a young woman who had an infiltration of the upper portion of the right lung, readily demonstrable by physical signs and x-ray examination. Constitutional symptoms, fever, and emaciation were present. After prolonged treatment in a sanitarium, recovery followed. At no time in the course of her illness did cough occur. Positive evidence of the existence of the symptom in parenchymal pulmonary disease is wanting, as it is impossible to exclude pleural and respiratory tract stimulation.

Painful, dry cough is a cardinal symptom of acute pleural disease. It cannot be stated whether it has its origin in the costal or visceral pleura, or the subpleural tissues, as the afferent nerve terminals supplying these structures have not been satisfactorily demonstrated in relation to this reflex. Its occurrence during aspiration of a pleural effusion, after much of the fluid has been removed, is a sign so well known to the clinician that it needs no special comment.

In mediastinal disorders involving the inferior laryngeal nerve by tension or pressure, as in aneurism of the arch of the aorta, it is an outstanding phenomenon. Text-books generally state that the ringing, dry cough of aneurism is caused by pressure on the recurrent laryngeal nerve, without offering a satisfactory explanation of its mechanism. Since the inferior laryngeal has essentially a motor function, nerve impulses are carried to the larynx, not to the medulla. Therefore, this does not entirely elucidate the problem. If, however, the symptom is analyzed more closely, it will be observed that with disordered function of the muscles of the organ, greater susceptibility of the nerve terminals of the superior laryngeal is acquired. The characteristic acoustic qualities of aneurismal cough are due largely to perturbations in the action of the laryngeal muscles.

The so-called ear cough is rarely diagnosed by the general practitioner, although sometimes a most distressing ailment. Without careful search, its cause is easily overlooked. It can be demon-

strated in many individuals by lightly applying a probe to certain areas of the wall of the ear canal. The author had under his care a young woman suffering from violent attacks of cough of several years' duration, the nature of which was obscure. Fear was entertained that she was tuberculous, since her husband was the victim of this disease. A careful survey of her case, especially relating to the pulmonary system, gave negative findings. A highly sensitive inflammatory condition of the walls of the external auditory canal was the cause of her complaint. Appropriate treatment quickly caused a disappearance of her cough.

I have never been able to satisfy myself of the existence of a gastric origin for cough, nor from stimulation in disease of any of the abdominal or pelvic organs. The afferent nerve terminals appear to be confined only to the thorax, respiratory passages, and ear.

Effects—A reaction of the tissues to noxious agents is injurious, protective or defensive, or indifferent. Within short periods, the degree of response may vary so as to alter its usefulness or convert it into a harmful act. Tissue peculiarities, constitutional and local, are dominant factors in modifying reflex response. The influence of toxic states is generally depressive,—of acute inflammatory lesions, irritative.

The amount of expectoration, the readiness with which it is removed, the dangers of retention of material in the air-passages, and the influence of overstress on the lungs and circulation are matters too well known to the physician to require detailed description.

The efficiency of the act depends on the removal of phlegm from the air-passages without undue expenditure of energy. When caused by pathological disorders of the pleura, mediastinum, and auditory canal—regions which have no direct connection with the air-passages—its favorable influence, expressed in terms of sputum discharged, is entirely wanting. The severe racking paroxysms, so characteristic of the early stage of laryngitis, tracheitis, and bronchitis, before exudation takes place, often yield promptly to the influence of sedatives, which prevent injury from mechanical disturbances. One of the perils of influenza from the acutely inflamed trachea is the frequent, dry, noisy, and often painful cough, out of all proportion to the necessity to expectorate. Its dangers are not fully realized in the production of complications of this disease.

In cough, interference with the filling of the heart and retardation of the flow of blood through the vessels always occur, and, when pronounced or protracted, are responsible for cardiac asthenia, venous congestion, and bleeding. Conjunctival hemorrhage—the blood-shot eye—is well known to all of us. Serious accidents to the circulation are perhaps of more common occurrence than generally supposed. We can recall many cases which display the malign influence on the vascular system when the seizures are in excess of the needs to remove secretions, or when they are weak and frequently repeated, but lack strength sufficient to raise sputa high enough to be expelled. The author had under his care a young woman, who, at the age of nine years, had an attack of whooping cough, which caused extensive retinal hemorrhages. Unfortunately, the outcome was almost complete, permanent blindness. Its effect on the myocardium is shown in the case of a middle-aged man in whom profound myocardial weakness with low blood-pressure was the sequel of a protracted cough. Recently, I saw a middle-aged woman suffering from chronic valvular disease, in whom severe paroxysms prevented readjustment of compensation. The use of heroin, after other cough sedatives had failed, gave her relief and comfort, and finally was the means of strengthening the myocardium. The attitude of the profession in urging the passage of the measure, now enacted into law, prohibiting the importation and manufacture of heroin, is difficult to comprehend.

In computing the results of any plan of treatment in pneumonia, as with sera and pneumococcicidal drugs, due consideration must be given to the effects of mechanical disorders brought about by structural changes in the respiratory organs. The consequences of severe cough in favoring the spread of pleural infection, in aggravating pain, in causing wakefulness, in increasing the strain on the circulatory apparatus, are factors which influence the course of this disease and its mortality.

Disturbances of intraabdominal pressure, from prolonged paroxysms, produce vomiting. The development of hernia is also due to this cause. A serious complication occasioned by the powerful expiration of the act was brought to my attention in the case of a physician, aged fifty-one, who contracted whooping cough. His illness was severe and the paroxysms were of such violence that three ribs were fractured. The diagnosis was confirmed by the x-rays. Although more than a year has now elapsed, he still has attacks of coughing when he leans back in a chair so as to cause pressure over the area which was the seat of the fracture. The explanation, I believe, is found in pleural stimulation which arises at a point where adhesions exist.

Extra-pulmonary varieties of cough—pleural, mediastinal and ear—are wholly or in the main injurious, and their diagnosis calls for special care.

The author expresses his thanks to Doctor Albert P. Brubaker, professor of physiology in the Jefferson Medical College, for valuable suggestions relating to the physiology of this subject and for the preparation of the diagram.

THE RELATIONSHIP OF CHRONIC INFECTION OF THE GALL-BLADDER TO DISEASE OF THE CARDIOVASCULAR SYSTEM*

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There has been considerable speculation regarding the influence of chronic infection of the gall-bladder on the cardiovascular system. During the last few years more and more emphasis has been placed on the relationship of foci of infection to localized and generalized disease processes, Rosenow's work on the elective localization of bacteria being a notable contribution in this field. Ample proof exists that tonsillar and dental sepsis are a menace to the individual, but further studies are necessary to link chronic infections of other organs with disease processes in various regions of the body. A chronic focus of infection may not be the immediate cause of trouble elsewhere, yet it is shown repeatedly that the progress of a disease is enhanced by such a focus.

We, at the Mayo Clinic, have had the unusual opportunity of studying large numbers of patients with chronic infection of the gall-bladder, and have seen the striking improvement that so frequently occurs in the cardiovascular condition following operation.

Only too often, patients afflicted with heart disease are denied the opportunity of surgical relief of a detrimental, curable condition on account of the physicians unwarranted trepidation. Many patients with heart disease are good surgical risks, and careful appraisal of the cardiovascular system will eliminate the others. Among those rejected there is another appreciable group of patients who may be rendered relatively safe for operation by careful treatment. In considering the question of operation it is important to determine as accurately as possible the immediate risk from the surgical procedure, the probable life expectancy with and without operation, and the degree of improvement to be expected. Even in the presence of quite advanced cardiovascular disease in certain cases with frequent attacks of gall-bladder colic or obstruction to the common duct, the added risk imposed by the heart lesion must be disregarded. The actual risk as determined by this study is small, largely depending on skillful surgery, careful anesthesia, the cautious selection of cases, and in many instances, preoperative cardiac treatment.

Sex Incidence

Gall-bladder disease, being more prevalent among females, the same sex dominance is in evidence with regard to cardiovascular disease. The incidence in this study showed that 175 females (76 per cent) were affected and fifty-four males (24 per cent).

Types of Cardiac Disease (Table 1)

Five hundred and ninety-six patients with chronic disease of the gall-bladder form the basis of this study. They are an average group and were not selected for any outstanding features. It was found that 229 patients (39 per cent) also had organic disease of the cardiovascular system.

The hypertensive type of cardiac disease was most frequent, occurring in 113 cases (49 per cent). The greatest incidence was in the sixth and seventh decades of life when fifty-two and twenty-nine cases occurred, respectively. The average degree of cardiac decompensation was 1 +.[1] Eight patients presented the syndrome of congestive heart failure with anasarca, and fourteen had slight but variable degrees of edema, while the remainder had little cardiac complaint other than dyspnea on effort. Only one case of hypertensive cardiac disease was associated with angina pectoris.

TABLE 1

Cardiovascular Disease

Type	Cases
Hypertensive	113
Arteriosclerotic	42
Chronic endocardial valvular	24
Cardiac hypertrophy with obesity	20
Indeterminate	14
Adenomatous goiter with hyperthyroidism	7
Exophthalmic goiter	4
Syphilitic aortitis	3
Adherent pericarditis	1
Congenital heart disease	1
Total	229

1. Valuation of 0 to 4.

*Read before the Des Moines Valley Medical Association, Ottumwa, Iowa, June, 1925.

Next in frequency was the arteriosclerotic type of cardiac disease, which occurred in forty-two cases (19 per cent). The greatest incidence of this group likewise was in the sixth and seventh decades. The average degree of cardiac decompensation was slightly greater than in the hypertensive group.[2] Four patients had congestive heart failure with anasarca, seven had varying degrees of edema, while the remainder, excluding five patients with angina pectoris, complained only of exertion dyspnea.

Chronic endocardial valvular disease was associated in twenty-four cases (10 per cent). It occurred most frequently in the fourth and fifth decades. The mitral valves were involved in twenty-one cases and the lesion was stenotic in seventeen. Aortic insufficiency occurred in only three instances. The average degree of cardiac decompensation was 1 +, and only two patients had the congestive failure type with anasarca. Three patients had edema, and the remainder complained only of dyspnea on effort.

Cardiac hypertrophy with obesity occurred in twenty cases (9 per cent) and was most prevalent in the fifth, sixth and seventh decades. The average degree of cardiac decompensation was 2, yet only one patient had the congestive type of heart failure with anasarca. Three patients had edema and the rest had only slight cardiac insufficiency.

In fourteen cases (6 per cent) the etiologic factors could not be derived; and, although definite cardiac disease was present, there were no distinctive signs or symptoms to identify this group as clinical entities, they will be referred to as the indeterminate group. The greatest incidence occurred in the fifth and sixth decades. The average degree of cardiac decompensation was 1 +; three patients had varying degrees of edema; nine complained only of dyspnea on effort, and two made no complaints of heart trouble, although the heart was enlarged.

The other groups were small, comprising seven cases of adenomatous goiter with hyperthyroidism, four of exophthalmic goiter, three of syphilitic aortitis, one case of adherent pericarditis, and one of congenital heart disease.

Obesity

One hundred four (45 per cent) of the patients with cardiovascular disease were obese. The rather frequent occurrence of gall-bladder disease and obesity with cardiovascular disease has often been mentioned, but probably is a greater factor in the progression of this disease than has been generally appreciated. Chronic overweight definitely increases the work of the heart, and not infrequently is the cause of hypertrophy, even in the absence of underlying cardiac disease. Obesity definitely increases the hazard of operation, increasing the technical difficulties, and experience has shown that obese patients are relatively intolerant to infectious diseases, such as pneumonia.

Electrocardiographic Findings

Electrocardiographic examinations were made in all the cases studied. In the 229 cases of cardiovascular disease, the electrocardiograms revealed important abnormalities in seventy-eight (34 per cent).

Auricular fibrillation was noted in twenty cases (26 per cent), and was associated with clinical types of cardiac disease as follows: adenomatous goiter with hyperthyroidism, six cases; chronic mitral endocarditis, five cases; exophthalmic goiter and arteriosclerotic cardiac disease, three cases each; the indeterminate type in two cases, and hypertensive cardiac disease in one case.

Significant T-wave negativity was the most common finding, being noted in fifty-four cases (69 per cent). The serious import of this graphic abnormality has been repeatedly emphasized. The graphic occurrence was as follows: in Derivation I, twenty-four cases; in Derivations I and II, ten cases; in Derivations II and III, fifteen cases, and in Derivations I, II and III, five cases. This finding was associated with hypertensive cardiac disease in twenty-three cases, with arteriosclerotic cardiac disease in eighteen cases, with the intermediate type in seven, with chronic endocardial valvular disease in four, and with cardiac hypertrophy with obesity in two cases.

Angina pectoris was present in four cases with the arteriosclerotic type of cardiac disease.

Delayed A-V conduction was revealed in two cases, both with the arteriosclerotic type of cardiac disease.

Aberration of the QRS complexes in all derivations (arborization block) occurred in one case of hypertensive cardiac disease.

In one case of exophthalmic goiter, auricular flutter was restored to normal rhythm before operation.

Premature contractions occurred in thirty-seven cases (16 per cent) but were not considered significant as their occurrence in the cases of gall-bladder disease without cardiovascular disease was greater, seventy-four cases (20 per cent). Straus and Hamburger have recently recorded cases in which the arhythmia disappeared after operation.

The electrocardiograms in 151 cases (66 per cent) were normal.

Patients With Cardiovascular Disease Treated Surgically

Seventy-nine patients with cardiovascular disease had operations, 13 per cent of the whole group, or 34 per cent of the group with cardiovascular disease (Table 2). The operative procedures were as follows: cholecystectomy, thirty-six cases; cholecystectomy and appendectomy, thirty-four cases; cholecystectomy, choledochotomy, and appendectomy, three cases; cholecystectomy and choledochotomy, two cases; cholecystectomy and posterior gastroenterostomy, two cases; cholecystectomy, appendectomy and posterior gastroenterostomy, one case, and cholecystectomy, appendectomy and knife excision of ulcer, one case. The procedures are detailed to show that surgical thoroughness was not influenced by the presence of coexisting cardiac disease.

The selection of cases for operation depended chiefly on the degree and extent of the cardiovascular damage, the degree of cardiac restoration that would be possible by treatment, and on a careful appraisal of the prognosis with regard to life expectancy. In some cases in which severe gall-bladder colics were occurring repeatedly and in which the common duct had become obstructed, the added risk was accepted after careful preoperative cardiac preparation, whenever possible.

The types of cardiovascular disease in the cases in which operation was performed were varied. There were thirty-five cases of hypertensive cardiac disease, in one of which there was angina pectoris; nineteen cases of arteriosclerotic cardiac disease, in six of which there was angina pectoris; ten cases of endocardial valvular disease; six cases of cardiac hypertrophy associated with obesity; five cases of the indeterminate type of cardiac damage; and one case each of syphilitic aortitis, adherent pericarditis, exophthalmic goiter and adenomatous goiter with hyperthyroidism.

TABLE 2

Incidence of Heart Disease in Relation to Operation

Type	Per cent
Without cardiac disease	61
With cardiac disease	39
Nonsurgical	57
Surgical	43
Surgical with cardiac disease	13
Surgical without cardiac disease	29
Nonsurgical with cardiac disease	24
Nonsurgical without cardiac disease	34

The average degree of cardiac decompensation in this group was 2 as compared to 1 + in the cases of cardiovascular disease not coming to operation.

There was no definite relationship between the type and degree of cardiac damage or the degree of cardiac insufficiency and the degree and extent of the associated abdominal disease, namely: hepatitis, cholangitis, pancreatitis, appendicitis or peptic ulcer.

In this group of major surgical cases of abdominal disease complicated by heart disease, only one (1.3 per cent) death occurred from heart disease. The patient had coronary sclerosis with angina pectoris and the risk of operation was fully appreciated but the latter was deemed advisable on account of persistent gall-bladder symptoms. The patient's immediate convalescence was perfect, but death occurred suddenly during an anginal attack after his dismissal from the hospital, and fourteen days after operation.

Patients with angina pectoris very frequently present perplexing diagnostic problems, particularly if the origin or distribution of their pain is in the abdomen.[3, 4, 20, 22, 23] The possibility of diagnostic error is further increased by the fact that gall-bladder disease and coronary sclerosis frequently coexist.[24]

The influence of electrocardiographic findings, in conjunction, of course, with physical methods of cardiovascular appraisal, in the selection of operative cases is interesting. Operation was performed in 40 per cent of the cases of auricular fibrillation, and in 33 per cent of those with significant T-wave negativity, but not in two cases with delayed A-V conduction and one case with aberrant QRS complexes in all derivations (arborization block). Thirty-four per cent of the patients with normal electrocardiograms underwent operation.

Results of Operation

Sixty-one of the patients operated on have been traced; thirty-three (54 per cent) report definite improvement in their cardiovascular condition; ten (16 per cent) are unchanged, and four (7 per cent) are worse.

The results of this study do not permit deductions regarding the etiologic relationship of chronic infection of the gall-bladder to disease of the cardiovascular system, yet the former appears to exert a detrimental influence in the progression of the cardiovascular disease as evidenced by the distinct improvement in the cardiac condition in more than half the cases following operation.

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MARRIAGE PROHIBITION BILL IN WISCONSIN

A bill providing that persons afflicted with active pulmonary tuberculosis shall be prohibited from contracting marriage in Wisconsin in the future, was vetoed by Governor Blaine.

The original bill as introduced by Senator Blodt merely clarified the present statute, defining more clearly feeble-mindedness. When it reached the assembly that body added an amendment to include active tuberculosis among the prohibition clauses. It was this clause that brought the veto. The governor declared that the wording of the bill was such as to bring it into direct conflict with the state's attitude towards divorce and social problems.—Wisconsin State Medical Journal.

INTRACAPSULAR EXTRACTION OF CATARACT BY THE BARRAQUER METHOD*

OTIS WOLFE, M.D., Marshalltown

Ophthalmic surgeons are divided into two schools regarding the operation for senile cataract; those who do a capsulotomy before they remove the lens, and those who endeavor to remove the lens in its capsule intact. The first group admit that the delivery of the cataractous lens in its capsule is the ideal method, but contend that the operations so far advanced have possible complications that render it undesirable.

Those surgeons who advocate the intracapsular method are divided into two groups; i. e., those who deliver the lens by expression, and those who endeavor to extract, or lift it out.

The intracapsular operation by expression has been popularized by Col. Henry Smith of India, and is known as the Smith Indian operation. It largely differs from the old operation in that no capsulotomy is performed.

In spite of the excellent results obtained by men like Fisher performing the Smith Indian operation the majority of conservative American surgeons feel that the operation subjects the eye to unnecessary risks. Their chief point of criticism is that the large amount of pressure required to rupture the zonule and express the lens may at the same time rupture the hyaloid membrane, with subsequent disorganization, or loss of vitreous.

Knapp is one of the foremost advocates of the intracapsular extraction method. With his capsule forceps he is able to extract the lens in its capsule by lifting it out. Its criticism is that the prongs of the forcep so often tear the capsule and practically does a capsulotomy. In the hand of its originator, however, it does seem ideal.

The advantages of all of the intracapsular methods (removal of the lens in its capsule intact) over the old capsulotomy method are that no subsequent "needlings" are necessary, and the stage of convalescence and disability is greatly shortened. Its advocates feel that even though small amounts of vitreous are occasionally lost, still this is not the bugaboo that it has been held up to be and, while undesirable, does not offset the many advantages of the intracapsular methods.

The surgical procedure known as needling subsequent to the old method of cataract operation may not be of such great consequence to the sur-

*Presented before the Seventy-Fourth Annual Session, Iowa State Medical Society, Des Moines, Iowa, May 13, 14, 15, 1925, Section Ophthalmology, Otology and Rhino-Laryngology.

geon, but to the patient it means much. In private practice, especially, we must consider the mental attitude of our patient, and his conception of this procedure.

Most of the operations for senile cataracts are performed on patients in the evening of life. Their mental activities and conceptions are such that they are no longer amenable to the cold logical reasoning of the surgeon. After they have their cataract operation they expect to see. They are eager to have the dressings removed so they can recognize familiar objects. The mental effect of their disappointment is difficult to estimate. To the surgeon a needling is a simple procedure, but to the patient it is "another operation."

It usually takes a month or so after the cataract extraction for the inflammation and reaction to subside so that the first needling can be performed. Following this procedure a few more weeks must elapse, and intensive treatment must be used to cause the remnants of capsule and lens to absorb and shrink.

Not infrequently following this first needling the surgeon is disappointed in finding the opening in the capsule is small or irregular, or else it is not placed so it gives good central vision and a second, or even third, needling is necessary, or advisable.

The patient cannot be given his glasses until most of the inflammation and reaction following these needlings has subsided, which means that they have no useful vision for weeks, or months, after the cataract extraction.

The surgeon is required to do much explaining to convince the patient that these procedures and delays were necessary and unavoidable. All of these objections are obviated and rendered unnecessary by intracapsular extraction.

I have in mind several patients who have had the old operation performed on one eye, defer having the second eye operated because of their dread of the long drawn out procedure of "needling". The following case serves as an excellent illustration of the comparison that can be made between the old capsulotomy method and the Barraquer-Green operation:

Mrs. S., age seventy-six, a lady of unusual mental attainment and stability, had had the old operation done by a man of national reputation six years ago. It was six months after the extraction before she was given glasses, on account of the subsequent needling. Even now she has only a very small opening in the capsule, and central vision is attained with difficulty. When the cataract became ripe in the second eye, she had so much dread of the long drawn out after-treatment and "needlings" that it was very difficult for her to submit to reason and allow the second eye to be operated.

I performed the Barraquer-Green operation and two weeks afterward she had normal vision. She returned to the office one week later and was given permanent glasses that gave 20/15 for distance and J1 for reading, and dismissed.

This patient states emphatically and enthusiastically that if she were to have a dozen cataract operations she would never submit to any other method.

Ignacio Barraquer, of Barcellona, Spain, has evolved a method of intracapsular extraction that has all the advantages of the other methods, Smith Indian, Knapp, etc., without their disadvantages. He has elaborated the vacuum method first suggested by Hulen. This method is known as phaco-eresis. According to Lloyd Mills, it was first suggested to Barraquer when, after watching a leech at work on the temple of a patient, he conceived the idea of inducing a leech to attach itself to a lens in the hope that the lens might be extracted intact by merely pulling the leech out. Such an extraction was successfully done on a first and only patient, and from this crude procedure sprang Barraquer's phaco-eresis.

He devised an electric motor driven apparatus that produces both vacuum and vibration, and a tip or canula made of platinum. The cup tip of the canula is attached to the lens by vacuum, and the lens lifted out. A valve in the side of the canula, operated by the thumb, controls the vacuum. This is, therefore, an intracapsular method by extraction.

He first presented his method and apparatus in America at the International Congress of Ophthalmology, Washington, D. C., April 25, 1922. He operated a considerable number of cases in some of our eastern cities, with excellent results. His method was received with much enthusiasm, especially by the advocates of the intracapsular method, although his apparatus was considered complicated and unwieldy for other operators than its inventor.

Dr. Frank Allport, with whom I was formerly associated, was the possessor of one of the first, if not the first, of the original Barraquer apparatuses to be imported to this country. In conversation with him some time ago, he expressed himself as believing that the apparatus was too complicated and intricate for the average operator, but that he thought with refinement of the apparatus that the method had wonderful possibilities. He did not feel that it would be the operation for the average operator, as much greater skill was required to perform it.

A. S. and L. D. Green have introduced alter-

ations in the Barraquer apparatus that have done away with the most complicated features. They have added a foot-controlled suction valve and constructed a much more simple and rugged motor with an accurate pressure gauge. They have also improved the canula, it being much lighter and can be held in the hand as delicately as a cataract knife. In their technique, they also apply pressure on the lower cornea with a special ball tipped forcep, making their technique a combined expression and extraction. This forcep does facilitate delivery in many cases. It is not always necessary, but by utilizing this forcep to raise the corneal flap its ball tip can be readily used if it is found advisable in difficult cases. We have employed the apparatus and technique of A. S. and L. D. Green in our later cases with entire satisfaction.

The first two operations we performed were with the McDanald suction tip and the Sorenson vacuum apparatus. We found that this tip does not come in contact with a sufficient lens area to enable the operator to deliver the lens well. In both cases, however, the zonule was ruptured and the lens delivered in its capsule, but it was necessary to combine expression with it. The results, however, were excellent and all that could be desired.

Lloyd Mills quotes Geo. Derby as regularly employing such a technique. After the suspensory ligament is ruptured, he discards the vacuum tip and delivers the lens with a lens forcep.

The intracapsular extraction by any of the methods is not always advisable, on account of some complication. I believe, however, it should be attempted in every suitable case on account of its great advantages; i. e., the Barraquer-Green method.

Vacuum extraction of cataract is particularly adapted to the senile type. It is not so well adapted to the over-ripe cataract on account of its friable capsule which is easily ruptured.

These can be operated, however, by being very careful in regulating the vacuum and combining expression with extraction as performed by Green. Even if the capsule should rupture, or tear, before the suspensory ligament is broken, we are just as far ahead as if we had set out to do the old operation and have the satisfaction of feeling that we have made an effort to give the patient something better. According to R. G. Viandi, also of Barcellona, Spain, the technique is applicable to Morgagnian cataract, also.

The Barraquer-Green method would seem to be especially well adapted to the incomplete cataract as the capsule is not friable. The method has not been advised by the authorities I have consulted, where the cataract is complicated by glaucoma, diseases of the vitreous, the uveal tract, or in traumatic or juvenile cataract. It is also contraindicated in dislocated lenses and cases with posterior synechia. The patient with a prominent, or bulging eye is least adapted to the technique on account of the difficulty of controlling the lids. The lids and the brow can exert great pressure on the eye ball of such a patient, and the increased intraocular tension might cause expulsion of vitreous.

Phaco-eresis, or vacuum extraction of the lens, as performed by Barraquer and Green, is an operation of exacting technique personified. The end, however, justifies the means. It fills the long felt want of the conservative but capable ophthalmic surgeon who desires the best for his patient. Highly trained assistance is absolutely necessary. This is accomplished in our practice by the team work of my partner, Dr. Wahrer, and myself. He controls the lids by means of Fisher lid hooks and directs the nurse assistants when my thoughts are occupied.

Method of Procedure—The case is carefully studied and the patient's elimination raised as high as possible beforehand. White's ointment is also instilled the night before both of the operative procedures. We then perform a medium sized iridectomy through a keratome incision, the pupil being fully dilated by atropine. Preliminary iridectomy is always conducive to good results in any kind of cataract work, but more especially so with the Barraquer-Green method. There is no blood in the anterior chamber to hinder the operator's view when placing the suction tip and noting its action and lift. It also greatly lessens the chance of infection. The patient also becomes accustomed to manipulations of the instruments in the orbital cavity and learns to cooperate with the surgeon, especially in regard to movement of the eye ball and how to close the eye gently without squeezing.

After the iridectomy has been performed, sufficient time is allowed to elapse for inflammation to subside, usually about ten days to two weeks. The Barraquer-Green operation is then performed after the apparatus has been carefully checked.

It is necessary to make a full one-half section of the cornea, and best to terminate the incision with a conjunctival flap. A suture of Kalt silk is placed through and through with a large loop which is laid to one side out of the operator's way. The corneal section is then raised with the Green forceps in left hand and the canula tip is then placed in apposition to the lens, being careful to place it evenly. (See illustrations.)

Illustrating Drs. A. S. and L. D. Green's "Intracapsular Expression Extraction of Cataract", by permission

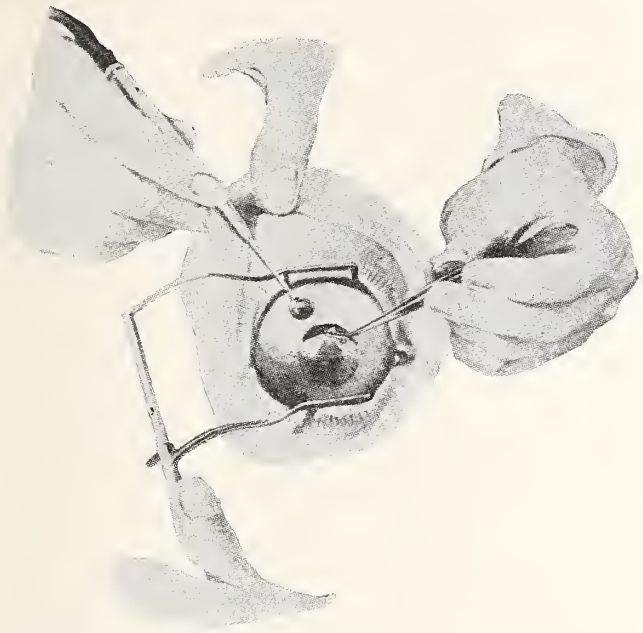

Figure 1. Conjunctival flap grasped with pressure forceps in the left hand, while the canula is being introduced with the right hand.

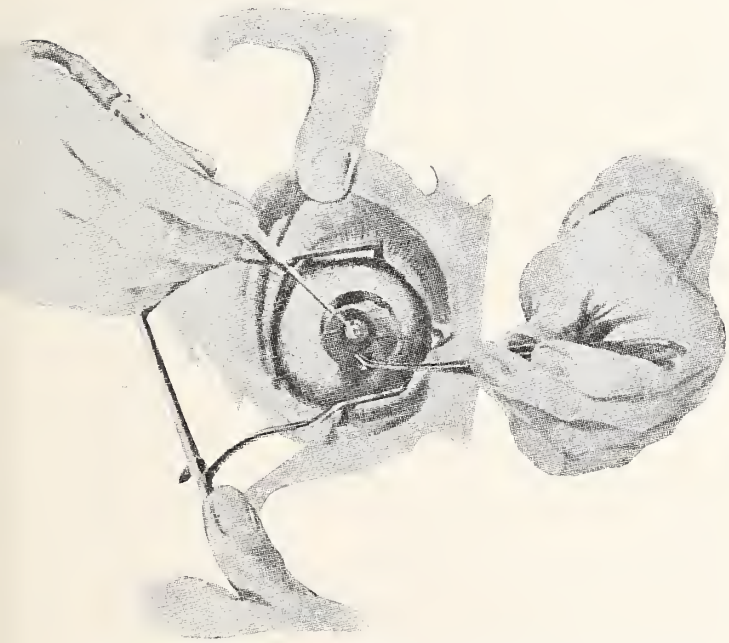

Figure 2. Pressing on the limbus with the ball of the forceps, as the cataract is being extracted.

While the healed edges of the iris are not easily picked up by the suction tip, care must be exercised to see that they are free. The fact that the iridectomy has been done previously is of the greatest aid to the operator in placing the canula tip evenly and lightly on the cataract, as there is no blood in the anterior chamber to obstruct vision. The writer prefers to operate with the Beebe loup.

The vacuum is then applied by the foot switch, with my associate watching the gauge and informing me when sufficient vacuum has been created. We then rock the canula back and forth a few times to rupture the suspensory ligament. This rocking also does away with the temporary vacuum produced behind the lens which would tend to lift the vitreous body as well. This point is very essential. We then lift and deliver the lens, the upper border first. If the lens does not deliver readily, the ball tip of the Green forcep is shifted to the globe, just below the limbus, and light counter pressure is made with it at the same time the lift is made on the lens with the canula. The operation then becomes a combined extraction and expression.

At this point it is highly important that my coworker have full and absolute control of the lids and the patient be especially cautioned not to squeeze. Very little or no toilet is necessary, except smoothing out the conjunctival flap, if it should be turned under, and quickly tying the Kalt suture. Eserine and White's ointment is instilled and the eye bandaged.

Unless there are some symptoms or complications, both eyes are bandaged for two days and left undisturbed. On the second day, the operated eye is inspected and treated with White's ointment. The unoperated eye is left uncovered after the third day.

Ordinarily our patients have been kept quiet in bed for one week, but two of our patients who were old and feeble were allowed to sit up in bed on the third day.

At the end of one week, the operated eye can be left uncovered part of the time. At this time one will note that there is much less reaction than with the ordinary capsulotomy method. This is due to the avoidance of manipulations and pressing, usually necessary to expel lens and capsule remnants by the old method; and secondly, there is no irritating lens substance remaining to produce inflammation or exudate, or to set up an iridocyclitis, or subsequent retinitis and later affect the vision. There is no secondary cataract or capsule remaining to deal with. The pupil and anterior chamber are clear and practically no ciliary injection, or conjunctivitis, remains. The patient is delighted to have his vision when the dressings are removed.

In conclusion, I will state that in selected cases I believe the Barraquer-Green operation is ideal. It is particularly adapted to uncomplicated cases of mature senile cataract. It must be emphasized, however, that it is not an easier method for the

surgeon, but one that requires greater dexterity and more exacting technique than the old capsulotomy method.

I feel that preliminary iridectomy should be considered an important and necessary step in the procedure.

When a perfect delivery is accomplished by this method, it is a source of great satisfaction to both the surgeon and the patient.

The surgeon has the feeling of having accomplished the ultimate in cataract surgery.

Discussion

Dr. G. E. Harkness, Davenport—First, I should like to compliment Dr. Wolfe upon his most excellent paper and for choosing a subject which is of most lively interest to all ophthalmologists. Secondly, I wish to state that I did not feel competent to discuss the paper, since I have never performed the Barraquer operation. I so informed Dr. Wolfe when he asked me to open the discussion, but only upon his repeated request did I consent. So my discussion will have to be simply my impressions from observations and reading. While his paper has to do with intracapsular extraction of the lens by traction, and one should adhere to the title in a discussion, yet intracapsular extraction by expression is so closely associated that it is difficult to avoid mentioning it. Everyone desires an intra capsular operation, and if the operative risks are not increased there would be no argument against it. As the essayist concludes a perfect delivery of the lens without any complicating sequelæ and rapid healing certainly must give one the feeling of having accomplished the ultimate in cataract surgery. Yet the ophthalmological world is far from being won over to intracapsular extractions as at present practiced. I think it is unfortunate that our literature seems to divide ophthalmologists into two groups. I am speaking of the Smith Indian as well as the Barraquer operation. The impression I gain is that the advocates let their enthusiasm minimize the dangers, just as the opponents apparently seek to smoke screen the advantages. Again the advocates of the Smith Indian operation came back and said it is a wonderful operation but the skill required can only be gained by working with the master. Likewise the advocates of the Barraquer operation are wont to advocate the same. This to my mind does not argue well for either operation, I have seen Col. Smith operate with his cigar and an inch of ashes hanging over the patient's eye, and have noted the pressure he applied and have said I do not want my eye operated upon even by the master. I have read that Barraquer gained his idea from watching a leech and had the temerity to apply a leech to a patient's eye and so extract the lens the first time. Undue pressure, cigar ashes, and trained leeches give me a bad impression. But such prejudices should not become fixed objections. The ultimate results are what count. The results of Col. Smith's operating in this country certainly were not so brilliant from what I can learn. The opponents claim they were below those obtained by extracapsular methods. The advocates claim the results have not been fairly presented. Zentmayer in his report on the results of the cases Barraquer operated upon in Philadelphia (American Journal Ophthalmology, March, 1923) concludes that the visual results were not equal to those obtained by an operator of less experience and dexterity employing the extracapsular method, and that while there were no complications he considered that they were avoided only because of the extreme dexterity of the operator. The advocates of the intracapsular methods minimize the loss of vitreous. To this I cannot agree, because while immediate results may seem good I believe loss of vitreous tends to late sequelæ such as vitreous disorders, retinal detachments and secondary glaucoma. So I come to the personal equation in my own work. I want an operation that has the minimum risk to my patient, the results of which accomplish permanent good vision. I want an operation that permits me to get out with the least damage to the patient's eye, when unexpected complications arise either due to my operative technique or due to lack of cooperation on the part of the patient. I may regret closing an eye with lens debris left behind, followed by protracted convalescence and secondary needling. I realize the psychological depression and disappointment to an elderly patient, but I prefer that to an operation which materially increases the hazard of vitreous loss. I want an operation that permits me at any stage if the patient becomes unruly to withdraw my instruments the easiest and most quickly. I feel that while stress has most properly been laid upon the dangers of lid pressure that the action of the inferior rectus when looking downward is a dangerous factor and I want an operation that permits during the delivery of the lens, the turning of the eye upward if necessary. Col. Smith insists that the fact that no instruments enter the eye is a decided advantage. In our days of operative asepsis I can not feel this is so important. I have a great respect for the posterior layer of the cornea and feel that possible traumatisms of the surface by instruments or undue abrasive force of a tumbling lens against it is not desirable. I prefer an iridectomy, and grant that a preliminary one is preferable and certainly if I were doing the Barraquer operation I would follow our essayist in his stand for a preliminary iridectomy. I fear the Smith operation because of the undue pressure used, believing in my hands I would have a great loss of vitreous. I like it for the absence of the instrumentation within the eye, though it does not seem to me this is so important. Barraquer in the British Medical Journal, October, 1924, states that in withdrawing the instrument (I believe this must be when operating without iridectomy), that the upper border of the lens follows the concavity of the patellar fossa, the posterior surface of the lens becomes the anterior and the lower border is brought upwards across the pupil and out between the edges of the flap. This I would be afraid to do.

because of the difficulty of getting out quickly and safely if complications arose. With an iridectomy my understanding is that traction alone is used. Without actual experience I still feel that in the presence of the unexpected I would be handicapped in withdrawing my instrument and in letting the eye turn upward. Desiring some of the advantages and fearing certain complications one's answer is to be found in what one actually does. I make a wide section, as for the Smith and Barraquer, almost half the cornea, and with a small conjunctiva flap. Lid retractors are replaced by elevators. Iridectomy is more often done at the time of extraction, though I would personally prefer a preliminary one. If bleeding does occur, which is not often, irrigation of the anterior chamber with one-half strength normal salt. Full strength is sometimes irritating to the posterior layer of the cornea. Now the Smith operation desires a weak Zanule, the Barraquer a strong capsule. Preliminary rupture of the Zanule is attempted after the method of Geo. Powers (Woods System of Ophthalmic Operations, Vol. ii) and J. Stroud Hosford (Ophthalmological Society U. K., May, 1912) both men reporting practically the same method independently. A sharp Bowman's needle or knife is entered through the flaps of the section and thrust into the upper part of the lens and the lens rotated on its anterior posterior axis. If the patient seems tractable, capsule forceps may also enter the anterior chamber, grasp the anterior capsule and gently rock the lens. These are removed and expression of the lens in the capsule is attempted, not by pressure which will tumble the lens but the pressure as ordinarily used, so that if the Zanule has ruptured the upper edge of the lens presents, the patient being cautioned not to look down and delivery may take place under the upper lid. This results in the delivery of a large percentage of lenses within the capsule. If the lens does not present easily resort is then had to the capsule forceps for doing a capsulotomy or the cystotome if the patient does not easily follow instructions.

HIGH MYOPIA AS A DEGENERATIVE PROCESS*

Harold J. McCoy, M.D., Des Moines

The myopic eye may be classified into two groups or types. The overgrowth myopia, which may be considered a developmental anomaly, and secondly, progressive myopia, which is a disease or a degenerative process.

The degree of myopia marking the point of distinction between the two types is only arbitrary and of course variable. It may be estimated to be from—3.00 to—6.00 D, for higher degrees are definitely more progressive and likely to be accompanied by the degenerative fundus changes.

Causes that have been advanced in the past to explain high myopia have been numerous, such as, close work or school myopia, in producing excessive accommodation, a position of the head so that the eyes tend to drop forward in their orbits and extrinsic ocular muscle influences as in convergence, etc. Second, relative or absolute shortness of the optic nerve.

Third, shape of the orbit which tends to mould the shape of the eye ball, etc.

Fourth, all conditions interfering with the passage of light through the ocular media, such as opacities of the cornea, lense and vitreous body have a tendency to make an eye myopic, but only to a very limited degree.

We will grant that conical cornea or keratoconus of whatever cause makes an eye myopic, also syphilitic disease and other diseases of the cornea, but the thing we are concerned with is the malignant and progressive form of myopia where the pathology is in the posterior segment of the globe.

All the causes previously mentioned have not stood the test of thorough and general investigation for the basic etiological factor in high and progessive myopia. It is well known to all of you that myopia tends to occur in families or generations of families. Why is it then the law of heredity is not more definite? It is due to the fact that our knowledge of heredity in families is incomplete. It has been worked out in the laboratories of the University of Chicago, as reported by Dr. Wells, that a thorough knowledge of the pedigrees of ten generations must be at hand before we can begin to know what to expect in the following generation.

Walter Jablonski (Klin. Monatsbl. f. Augenhlk., Stuttgart, 68-560, May 16, 1922) considers myopia of more than 3.00 D to be undoubtedly hereditary. His statistics include mainly myopias of 6 D. He says these are certainly genotypical (acquired by hereditary constitution) and not modifications. He gives a short summary of heredity and the rules for dominant and recessive stigmas. The dominant elements are always directly inherited, healthy children are never the offspring of two pathologic parents; healthy parents may have pathologic children. A genealogic table in his article illustrates myopia in four generations, a second table demonstrates that myopia is a recessive characteristic. An exact investigation of the course of heredity according to the two Weinberg methods, that of fraternal relationship and of reduction, demonstrated that myopia is probably transmitted as a monohybrid (determined by one factor only) re-

*Presented before the Seventy-Fourth Annual Session, Iowa State Medical Society, Des Moines, Iowa, May 13, 14, 15, 1925, Section Ophthalmology, Otology and Rhino-Laryngology.

cessive factor in accordance with the Mendelian Law.

S. Druault Roufesco (Ann. d'ocul Paris, May, 1922), studied 5251 cases of refraction, of these there were 1714 cases of myopia. He concluded that myopia is a condition of familial and hereditary refraction and that it is variable and progressive and in mild and severe forms it is evolutive and it is pathologic when it progresses rapidly, also that in case of hereditary predisposition, hypermetropia may give way to myopia or may remain stationary.

Other facts we have, also point to heredity as the real fundamental cause of myopia. It is also a racial disease. It is said that it is commonest in the Roman Campagna because for centuries this area has been the recruiting ground for the constant wars of the past, the myopic was rejected for military service and lived to perpetuate his kind. Myopia is notoriously prevalent in Germany, decimated by the "thirty years' war", and among the Jews. Myopia is rare in Britain, a country that has been spared the annihilating wars of the continent.

Progressive myopia as stated has its pathology in the posterior segment of the globe. The types of pathology are—

(1) Conus or myopic crescent.
  (a) Congenital conus.
  (b) Acquired conus.
    (1) Retraction (acquired myopia).
    (2) Supertraction (acquired myopia).
(2) Staphyloma posticum.

This is pouching of the posterior pole of the eye-ball generally in region of macula due to a weakened condition of the sclera. The excessive stretching causes secondary degeneration of the choroid and retina as seen in the slides. The primary cause then in a progressive high myopia is a hereditary degeneration of the sclera in the posterior segment of the eyeball.

The object of this paper is to bring this subject before you for your consideration. I refer you to an article by Treacher Collins in the Transactions of the International Congress of Ophthalmology, 1922, upon "Hereditary Ocular Degenerations". It is generally considered that in infancy the refraction is one of hyperopia unless there exists at birth a congenital defect. We have the scleral tissue apparently developed in a normal way but for some reason the resistance of this tissue is weak and is unable to maintain its physiologic function, so it relaxes or degenerates. So far as our knowledge goes there is no endogenous substance such as the secretion of one of the endocrine glands upon which the sclera is dependent for its vitality, although Raul Arganaraz, (Semana Med. Buenos Aires, 49-1161, December 7, 1922), rejects the theory of heredity on the basis of its occurrence in only one eye sometimes, which is one point that does not parallel Collins' "Hereditary Ocular Degenerations", and by his own clinical experience. He claims "that the cause for this abnormal opththalmic condition can be established only by a general clinical examination of the patient and this regularly shows the existence of pluriglandular disturbances of the endocrine system due either to hyperfunctioning or hyprofunctioning, usually of the thyroids and testicles, or thyroids and ovaries, sometimes of the hyphophysis. Nor do we as yet know of any toxic material developed endogenously, capable of producing this weakness of the sclera. Even if such a toxin or internal secretion be discovered to account for the hereditary nature of this affection, it will still be necessary to assume some innate weakness in the sclera, or in the case of some internal nutrient secretion, some innate tendency to a failure in its supply.

The occurrence of the degeneration of the sclera in several successive generations of the same family renders it impossible to attribute it entirely to the absorption of any exogenous toxic substance or to the absence of any exogenous essential nutrient material such as a vitamin.

In conclusion then we consider high progressive myopia as,

(1) A degeneration of the sclera due to an inherent weakness or lack of vital force in the scleral tissue cells, having a hereditary transmission.

(2) That all other causes advanced to explain high myopia are only secondary factors or a part of this hereditary weakness manifested in other tissues.

A TREATMENT FOR FISTULA FOLLOWING DACROCYSTECTOMY*

SIDNEY G. HANDS, M.D., Davenport

In this great maelstrom of human knowledge, man's individual experience counts but little. And yet, occasionally, one encounters a problem, which he is able to solve in a manner, somewhat different from accepted methods. In casting about for a subject to present to you today, I wished to find something different, something unique, which might possibly create a ripple of interest among you.

Therefore, as the following treatment was somewhat singular, and the result all that could

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be desired, I present one phase of the treatment of chronic dacrocystitis, which, although no claim is laid for originality, still has not been found described in such literature as has been available.

Carl, age six, son of a practicing physician, was brought to me in August, 1922, because of a purulent discharge in the left conjunctival sac. At the age of one and one-half years, had undergone an operation, which consisted of the removal of left lacrimal sac, because of a chronic dacrocystitis. This was performed in another city by a very capable man.

In spite of hospital treatment for an apparently sufficient length of time following this operation, and again, at home, under the father's care, great quantities of pus were removed from the conjunctival sac each day. Accompanying this was a marked reaction of the tissues, the globe being much reddened, with congestion and a decided dermatitis of the lids and cheek.

The father had sought relief from several ophthalmologists, getting no more than a very temporary improvement. The patient, at the time I saw him was decidedly introspective and sensitive about his affliction and given to isolating himself from his playmates; really an outcast.

Examination revealed the fact that the pus was exuding from a fistulous tract, below and internal to the punctum and in the conjunctival sac. This path was probed and curetted under the influence of a general anesthetic. Marked improvement followed for several months.

But finally, about one year later, the symptoms were as severe as ever. By this time the boy was shunned by his playmates and was moody to a marked degree, while the condition had become the despair of his parents.

On August 14, 1923, the little patient again was removed to the hospital and under ether, the fistulous tract was curetted and dilated to the floor of the nasal cavity. A piece of silk braided umbilical tape of ordinary size was inserted the entire extent of the lacrimal canal. This was pulled through, so that the upper end extended within a fourth of an inch of the conjunctival end of the fistula. About an inch was left extending through the lower opening and hung loose in the inferior meatus.

It was felt that if the discharge was to be permanent, that by inserting the tape into the nasal cavity, a permanent fistula might be formed from the center of the tract to and emptying into the inferior meatus, and thereby give the tissues above the upper extremity of the silk cord, an opportunity to heal over.

This tape was left in place until November 30, 1923, during which time mercurochrome 2 per cent was used faithfully by the parents. The stain readily found its way into the nasal cavity and the purulent secretion was almost nil. The conjunctival congestion cleared up, and strange to say, there was no reaction of the tissues to the silk cord.

On November 30, 1923, or three and one-half months after the operation, the loose end of the cord, which had been left dangling in the inferior meatus, was grasped and readily withdrawn, with practically no pain to the patient. The discharge into the conjunctival sac was gone, and now one and one-half years after the removal of the cord, the patient is clinically well.

The entire tract is open, as stains readily find their way from the conjunctival sac to the nasal cavity and the flow of normal lacrimal secretion seems to be as well taken care of as in the unaffected eye.

Just what has taken place, obviously we are unable to say. That the entire lacrimal canal has become epithelialized, seems likely. If this channel, with no interference whatever has conducted the tears in a normal manner for one and one-half years, does it not seem probable that the normal function of the duct will be continued indefinitely? Very likely, we think.

If so, surely it is worth while reporting the case, as the success of the above procedure has changed the outlook of the parents to one of optimism, while the patient is enabled to comport himself as should a normal healthy rollicking boy.

Discussion

Dr. Elmer P. Weih, Clinton—Unfortunately I am unable to really discuss this unusual case report, because I have never seen a similar one. Dr. Hands is to be congratulated on the end result, and especially so, if the tears drain through the tract into the nose. This case emphasizes the fact that when removing a tear sack we must do so completely, removing every portion of the sack, then destroying all tear puncta, including any accessory tear puncta if present. There is no question but what the case under discussion was improperly operated the first time. If small particles of the mucous membrane are allowed to remain, there is a continuation of the discharge and usually the formation of a fistula. Experienced operators may fail in extirpating the entire sack, and to obtain a perfect cure must resort to future operations. The failure to remove every particle of sack may be due to exceptionally profuse hemorrhage preventing accurate dissection, or partial destruction of the anterior wall of sack from rupture of the abscess into the surrounding tissue. It is also a common error to sever the sack some distance below the apex and to leave the apex behind. The apex is closely adherent to the surrounding tissue and should be removed with the sharp edge of the

scissors. Curetting blindly with a sharp curet is a crude procedure and is without value. Unless every particle of the sack is removed, primary union of the wound will not take place. The secretion from the retained portions of the mucous membrane soon distends the wound and results in suppuration. Immediate curettment of the operated wound is an error, because the granulations in the wound mask the tissue, and the mucous membrane on the lateral wall, not having the support of the bone, always escapes the sharp curet. The use of a cord in keeping a tract open is an old procedure, however, its use in a lacrymal canal is a new one to me.

RECTAL EXAMINATIONS IN OBSTETRICS*

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Rectal examinations are used in obstetrics to study the course of labor. Within recent years many have come to believe that the cleanest possible vaginal examination will contaminate the parturient uterus. It is maintained that frequent vaginal examinations will always remain a possible source of puerperal fever. Particularly in the schools of medicine, strong arguments are made in favor of the management of labor almost entirely from information gained by examination by rectum rather than by vagina. A large majority of the schools in the United States prohibit the student of midwifery from examining by vagina during his course of training either in the lying-in hospital or in the outpatient department.

On the other hand some schools in this country and some abroad continue to teach students their obstetrics by having them examine patients by vagina. The heads of such schools claim that their morbidity and mortality rates are so low as to prove that clean vaginal examinations are without danger. At Wurzberg, Germany, Schmitt reports only 15 septic deaths in 10,000 cases. In that school no restrictions are placed upon the number of vaginal examinations a student may make in a given case. In a similar series from another school, Ahlfeld reports only one death in nearly 9,000 normal deliveries.

It is not the province of this paper to present a long list of the arguments either for or against routine rectal examination of women in labor. You have heard them. I presume that the majority of the physicians here do examine their patients by vagina entirely. Undoubtedly you know how to examine vaginally cleanly. Undoubtedly you have had very little sad experience with puerperal infections.

When a young man is asked to present a paper before physicians of long experience, he is beset with many misgivings. This subject was chosen because the writer is so recent scholastically that rectals were the religion of his obstetric teachers. The writer feels that perhaps physicians longer in practice will not mind hearing the subject presented in a more or less didactic manner, in order that they may have an insight into the more recent teachings of the schools.

Instructors and writers commonly assume that, after practice, it is just as easy to feel things in the vagina by slipping a finger into the bowel as it is to put the finger into the vagina direct. An instructor will frequently walk into the delivery room and, after slipping a finger into the bowel for a moment or two, will proceed to tell the students the amount of effacement and dilatation of the cervix and the presentation and position. And he will calmly predict the subsequent course of labor quite accurately. He will then tell the student to find the same things. He leaves the impression that the procedure is quite simple. The student does not find it simple. He struggles through his course of instruction pretty much in the dark about the contents of the parturient vagina. As soon as he gets out into practice away from the watchful eye of the instructor and away from all danger of losing credit in the course, he begins to feel the need of knowing something about a patient beyond the fact that she seems to be pregnant. So he scrubs her up and puts two fingers into the vagina to get a little notion as to what part of the baby seems to be coming first. It turns out that she does not die of sepsis as the instructor promised him must very likely be the case. Thence he assumes, more or less correctly, that his instructor had peculiar ideas, and he proceeds to learn his obstetics at first hand as the occasion demands.

My own experience is that it is often not easy to feel things in the vagina with a finger in the bowel. I have usually found the rectovaginal septum in the way. It is very disconcerting to find any part of it missing. Thus it is necessary to devote a large part of this paper to a discussion of the rectovaginal septum in order to understand why there are so many difficulties in the way of becoming confident of rectal findings. One must even go further and discuss the system of fascia of which the septum is a part. This may appear to be a digression from the subject of the paper. But it must be included

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to appreciate the difference between rectal and vaginal findings.

The rectovaginal septum is a sheet of fascia which passes between the mucosa of the rectum and that of the vagina below the peritoneal culdesac of Douglass. It is a part of the fascia endopelvina. It makes a strong side-to-side partition in the pelvis above the levator ani muscles. Superiorly it passes up onto the uterus between the peritoneal pouch and the fornix of the vagina. Laterally the superior margins pass to the sides of the sacrum under the folds of peritoneum called the sacrouterine ligaments. Inferiorly it inserts into the pyramidal mass of fibrous tissue called the perineal body.

The rectovaginal septum is a tough sheet of fascia. It is seen during a total hysterectomy as the posterior vault of the vagina is cut through. You will recall that it is tough. The toughness and thickness increase slightly from the culdesac downward to the perineal body. Trying to palpate the cervix through this sheet of fascia is comparable to trying to palpate the apex beat of the heart through a shirt and heavy underclothes.

The rectovaginal septum is a part of the system of fascial supports of the uterus. The uterus is attached directly to the pelvis through the broad ligaments at the sides; the triangular ligament and round ligaments in front; and the sacrouterine ligaments and rectovaginal septum behind. Some writers claim that too much stress has been laid upon the importance of the pelvic floor as a support of the uterus. All works on anatomy and gynecology and obstetrics are embellished with meticulous descriptions of the structure of the pelvic floor. It has been maintained that the uterus depends upon the broad ligaments for support no more than does the intestine depend upon its mesentery. It has been maintained that the uterus will prolapse through a relaxed pelvic floor fully as easily as will the intestine herniate through an open inguinal ring. It has been maintained that prevention of prolapse and related relaxations is to be accomplished mainly through careful preservation and repair of the pelvic floor. Too little attention has been paid to the true supports of the uterus which lie above the pelvic floor. Preservation of these true supports is more important to the health of the puerpera than is a cosmetically correct introitus. An understanding of the nature of these true supports is essential to one who aims to conduct the labors of women intrusted to his care in such manner that their future may be free from gynecologic complaints. The rectovaginal septum is a part of the system of fascia which constitutes the true support of the uterus. Careful study of the condition of the septum by the finger in the bowel affords an excellent method of understanding the changes which these true supports undergo during the first stage of labor.

The first stage of labor is the process by which the uterus opens itself so that its contents may be shoved through the pelvic floor. The uterus is not held shut by the cervix alone. The masses of tissue at the sides in the bases of the broad ligaments also help to hold it shut. The mass of tissue in front of the uterus in the triangular ligament and bladder also helps to hold it shut. The process of opening the uterus does not consist in effacement and dilatation of the cervix alone. The uterus is not open until all its supports have been pulled up out of the pelvis by the contractions of the first stage. The uterus is not open until the bladder and its attachments have been pulled clear up out of the pelvis. The uterus is not open until all the tissue in the bases of the broad ligaments has been pulled clear up out of the pelvis. The uterus is not open until the kinks have been pulled up out of the rectum and it is empty of feces, until the rectovaginal septum has been pulled out into a thin fibrous sheet. This reiteration of the phrase "the uterus is not open" serves to emphasize a revision of the usual definition of the first stage of labor. The common conception is that the first stage is over when the cervix is completely effaced and the os is completely dilated and the membranes are ruptured. That definition requires the supplements here detailed.

At the beginning of labor the uterus rests easily in the pelvis. Between pains the cervix can be pulled down almost to the introitus. It can be shoved upward clear out of the pelvis. The contractions of the first stage do not push the presenting part against the pelvic floor. They are not bearing down pains. They do not push anything at all. They pull and they pull upward only. They pull up the bladder, they pull up the broad ligaments, they pull up the sacrouterines, they pull up the cervix. They pull the cervix against the presenting part and thus dilate the os. Dilatation of the cervix is incidental to pulling it upward. The uterus cannot be opened by dilating the cervix laterally with the hands or with any instrument. Such a procedure does nothing but tear apart the true supports of the uterus. Delivery may be accomplished thus, but it has in no sense any resemblance to the processes of labor. The uterus cannot be opened by any voluntary expulsive efforts on the part of the patient. Bearing down before

the uterus is open simply tends to push its true supports out into the world. A push from above counteracts the work of the uterus in pulling things up. Thus labor is delayed rather than accelerated. If the patient will push hard enough she can delay labor indefinitely. The uterus may not be able to pull as hard as she pushes and it cannot get itself open. She may push the baby out before the uterus is open, but she does it only with considerable damage to the true supports of the uterus.

The uterus cannot be opened by the administration of pituitrin, quinine or any oxytocic. The processes of the first stage require that uterine contractions shall be intermittent. The uterus must first pull, then relax and take a new hold. The relaxation and taking of a new hold are as important and necessary as the pulling. Any drug which simply increases the tone of the uterine musculature abolishes the relaxation part of the process. Powerful drugs which produce strenuous contractions may tear out the soft parts of the true supports of the uterus which still remain in the pelvis. Delivery of the uterine contents may thus be accomplished. But it has in no sense any resemblance to the natural opening of the uterus. Chloral, morphine, and chloroform or ether relax the tone of the uterine musculature. The exhibition of such drugs to promote the relaxation phase of the first stage will aid the natural opening process more than will oxytocics.

The uterus cannot be opened by putting forceps on the head and yanking it through the pelvis. All those portions of the true supports of the uterus which have not already been pulled out of harm's way will be torn and stretched completely out of their normal relation. Such a forceps operation may empty the uterus, but it has in no sense any resemblance to the natural processes of labor.

During the first stage the uterus is adapted to pulling up and to nothing else. When the pulling up is all done the uterus starts pushing down. It has made itself into a different sort of machine and the second stage is on. It is now a broad thick canopy of muscle at the top connected by a strong, tense sheet of fascia directly to the pelvis. If it were possible to get hold of the cervix it could not be pulled down towards the outlet nor pushed up. The canopy of muscle at the top is called the fundus. The sheet of fascia which attaches to the pelvis is called the lower uterine segment. In front the lower uterine segment attaches directly to the pubis. The bladder has been pulled clear up out of the pelvis and the urethra is stretched to twice its length. When the patient bears down, neither the bladder, nor the anterior lip of the cervix nor any tissue with a bluish mucosa is pushed in front of the head. At the sides the lower uterine segment is inserted directly into the obturator fascia along the white line. The ureters and the uterine arteries and all the venous plexus in the bases of the broad ligaments have been pulled clear out of the pelvis. There is nothing between the head and the bony pelvis except the obturator muscle and fascia.

Posteriorly the lower uterine segment is continuous with the rectovaginal septum. These two are so blended together that in effect the fundal canopy of muscle is attached directly to the perineal body. The kinks have been pulled out of the rectum and it is empty. When the patient bears down the vaginal mucosa attached to the septum does not rumple and get shoved along with the head. The whole pelvis is ready for expulsive labor and the delivery follows either by material effort or help from the attendant.

The attendant who learns to appreciate how long it takes the uterus to get itself open will find that difficulties in delivery are uncommon. It is the main point of this paper to show how this knowledge may be gained by means of study of the processes of the first stage through palpation of the system of the true supports of the uterus with a finger in the bowel. The vaginal examiner is prone to follow the cervix only; the rectal examiner must watch the whole system.

The first thing the rectal examiner must learn is to study the condition of the rectovaginal septum. When the parturient is examined by vagina very little attention is paid to the thickness or tension of the rectovaginal septum. The examiner who merely tries to substitute a rectal for a vaginal is not thinking of the septum. To return to my former simile, he is like one who tries to palpate the apex beat of the heart through a shirt and heavy underclothing. He cannot feel what he is trying to feel and his main reaction is to tell the patient to take off his shirts. The object of this paper is to maintain that there is a decided advantage in feeling of the rectovaginal septum. To return to the simile again, it is worth while to try to guess how many shirts there are between the examiner's hand and the apex beat of the heart. To watch and appreciate the thinning of the rectovaginal septum affords valuable information in the study of the first stage of labor.

At the end of pregnancy the septum is many times as thick as it was in the non-pregnant state. It contains a rich plexus of veins which

have been enlarged in the same manner as have all the other veins of the pelvis. It is soggy with the semiedematous passive congestion of all the pelvic tissues incident to pregnancy. The thickness and sogginess vary with individuals. The rectal mucosa is thick and the hemorrhoidal veins are engorged. The vaginal mucosa is thick and thrown into voluminous rugae. Take for example a patient at the beginning of labor. She is a primipara with the head at mid-pelvis. A finger is slipped into the bowel and the examiner tries to palpate the cervix. The beginner reports that he doesn't feel anything at all. His finger is pressing against a soft, thick, soggy recto-vaginal septum and beyond it against a soft, thick uneffaced cervix. If his finger were in the vagina he would be able to find the external os and slip through it up to the ring of the internal os which is still closed. If he keeps on trying to locate the external os with a finger in the bowel he is likely to be disappointed. The thickness of the septum will prevent him from locating the thing he is trying to feel. It is like trying to palpate the apex beat of the heart through two shirts, a heavy suit of underclothes and an onion poultice. This example is the sort of patient frequently found in the delivery room when the O.B. Ward Walk comes through. The instructor is supposed to teach a few students the art of rectal examinations. He puts on a glove and slips a finger into the bowel and looks wise. I have heard such an instructor report rectal findings which I was rather positive he had to gather from his imagination. There isn't anything to be felt except a thick mass of tissue and a presenting part which seems to be about an inch from the end of the finger. Yet the instructor will say that he feels the external os and knows that the cervix is uneffaced and the internal os is closed. This sort of teaching does a great deal of harm because the student doesn't feel anything of the kind. He is discouraged and made a fool of from the start. As soon as he gets a business of his own he quits rectals out of spite.

Sometimes the following procedure is made use of to discover the state of the cervix. If the finger be held in one convenient midline spot for a few minutes and steady pressure is made upward against the presenting part, the edema of the septum will be pitted by the finger. This makes a spot where the finger can feel through the septum to a slight extent. In the same manner one can press steadily against the edema of a swollen ankle, and after a few minutes can feel the malleoli underneath which were not discoverable till the edema was pressed out. But the practice leads to confusing findings because one presses a pit in the edematous cervix at the same time. Such a pit can be enlarged by frequent examinations and kept track of for hours. The examiner feels very foolish when subsequent events prove he must have been wrong about the state of the cervix.

The sensible way to report a rectal examination in this example is to say that the recto-vaginal septum is thick. This fact alone means that labor is only beginning, because as labor progresses the septum becomes thinned out. The first business of the uterus is to pull its true supports up out of the pelvis so that it will become a pushing mechanism. The septum is one of the structures which must needs be pulled up and thinned out. If it is so thick that the palpating finger does not discover structures in the vagina on the other side of it, one may be certain that the uterus has a lot to do towards the process of opening itself. After one has had a little of experience he will rely on this finding as fully as though he had made a careful vaginal examination and found the cervix not effaced, os closed. He will, for instance, go home for some rest, leaving instructions to call him at a later stage.

Not all rectovaginal septa are thick at the beginning of labor. After women have borne children, the true supports of the uterus are less bulky. You are familiar with the difference between the pelvic findings of primiparæ and multiparæ. The pelvis of a primipara seems to be full of soft parts. One misses many of the bony landmarks. Yet the same pelvis a few years later is much more roomy The soft parts seem to have vanished. The rectovaginal septum partakes of this general change. Thus a rectal examination at the beginning of a multiparous labor often discovers the cervix fully as plainly as that per vagina. The septum is so thin that one easily palpates the external os, the uneffaced canal and the closed internal os. After the third or fourth labor these things are still easier to find because the cervix gets tougher and harder. Such a case should be selected for teaching material when rectal findings are to be demonstrated to students.

Let the patient in the first example have four or five hours of good first stage pains. Vaginally one would find the cervix taken up so that effacement is about half complete, the internal os is the size of a 25-cent piece. The presenting part is plainly discernable and a diagnosis of presentation and position is made by the physician. Such a patient examined rectally would still have a septum too thick for accurate palpa-

tion. The external and internal ora are distinguishable but rather indistinctly. The septum is still so thick that the examiner must resort to a strategem to be at all certain of the cervix. It is very easy to arrange a fold of the vaginal mucosa in such manner that it feels like the ring of a cervix. The beginner frequently makes such a mistake and does not find out for hours that he had no idea how large the os was. When one is suspicious that such an indistinctly palpated ring is not the cervix, he recalls that the cervix becomes tender with the stretching of labor. Therefore he gives up pushing his finger around the ring and presses steadily against the center of it. He asks the patient whether that pressure is tender. If she replies in the negative, he assumes that he is pressing against the presenting part through the open cervix. Then he brings his finger radially and tugs sharply against the ring of tissue which he thinks is the cervix. If it is decidedly tender, he assumes that it is in fact the cervix. You will understand that these are the sort of instructions given to students who are forbidden by the laws of a medical school to make a vaginal examination under any circumstances. These lads are under the necessity of making the rectal examination tell the story of the cervix, and their instructors must show them how it is possible. This point concerning the tenderness of the cervix is a valuable aid whenever one is compelled to manage a labor without vaginal examinations.

To continue with the same example. When the rectovaginal septum is so thick that the finger in the bowel can only with difficulty make out the cervix, you can readily understand that the presenting part is not plainly palpable. This is one point where the man who is afraid to examine a patient vaginally is frequently led into error. Suppose this is the first time he ever saw the patient. She is a primipara 24 years old. He examines the abdomen carefully and finds that the uterus is hard and tender. He thinks he feels the back on the left side, but she will not lie still long enough to let him make certain. He hears the fetal heart all over the lower abdomen. He slips a finger into the bowel and finds the presenting part in midpelvis. He is quite certain the cervix is the size of a 25-cent piece. He thinks he feels the head, but he cannot make out a suture. He guesses that the presentation is occipital and the position is left anterior. In a case like this the prudence of most of us would require more definite information. It is possible that the position is left posterior or even right posterior. It is possible that the presentation is frank breech. There are few who have not missed finding the head in the fundus; it is a likely error when the uterus is tense and tender. A prudent attendant will wash this patient up and examine vaginally to be just as sure as he can of the exact presentation and position. The man who boasts that he manages all labors without vaginal examination should carry a reliable x-ray machine for accurate diagnosis of presentation.

This example has been selected because it presents difficulties. The majority of primiparæ have thinner rectovaginal septa. The deeply engaged head is almost always accompanied by a septum thin enough that one can make out the sutures and fontanelles plainly as soon as the cervix is as large as a 50-cent piece. It is not at all unusual to make diagnosis of full or frank breech. I have seen several in which it was possible to determine the sex of a breech presentation by rectum. The details of a face presentation may even be felt.

Students who are fortunate to see cases like these during their training are encouraged enough that they go ahead and learn all they can about rectal examination. The method requires patience to learn and will never become as popular in the United States as it is abroad. Moreover it requires much practice. One must be seeing and examining patients rather frequently in order to acquire any facility. However, if one is seeing as many as thirty cases a year, it will richly repay him to begin acquiring the art by examining each patient as many times rectally as he prudently may.

When the septum is at all pervious to palpation, the bag of waters is easily distinguished. In clinics where rectals are the rule, artificial rupture of the membranes is performed without vaginal examination. A hemostat is dipped in an antiseptic and introduced into the vagina; the rectal finger guides the point of the instrument against the bulging bag. I do not recommend the procedure, preferring to perform artificial rupture only after a very thorough vaginal examination. When one learns how long the first stage really is, he appreciates the fact that the bag of waters serves a useful purpose for some time after the cervix seems to be completely dilated.

Patients are seen whose septa are so thin that the prolapsed umbilical cord may be palpated per rectum. The pulse of the umbilical artery may even be felt. But if one had to depend upon palpation to discover a prolapsed cord, that fact alone would be enough to condemn rectal examination. From the standpoint of the baby

it is very essential that the attendant discover this accident very soon after it happens. However, the prolapse of a cord can be discovered by study of the fetal heart tones long before it can be felt in the vagina. Whenever a cord prolapses enough that it is pinched, a specific variation in the fetal heart rhythm occurs. Five or ten seconds after a pain starts the fetal heart slows abruptly and stops. When the pain is over the heart slowly begins to beat and gradually regains its rhythm within 20 to 40 seconds. The same thing happens with every pain until the pinching of the cord is relieved or the baby dies. No examination of a parturient is complete until the examiner is certain how the rhythm of the fetal heart is affected by a full uterine contraction. The stopping of the heart during a contraction is specifically diagnostic of a pinched cord. The fetus may suffer an occult prolapse which is not felt by vaginal examination, yet the heart tones will tell the story if the cord is pinched.

The presence of a thick caput succedaneum is easily appreciated when the septum is pervious and the attendant knew it was forming. But when the septum is not thin and the membranes rupture some time before the attendant saw the patient, the caput may be very confusing. In fact it is often confusing even after vaginal examination.

I have seen forceps operations performed without previous vaginal examination. The operator was so very positive his rectal findings were correct, that he was sure he could apply the blades to the head safely without exposing the patient to the possible contamination of putting the hand into the vagina. Personally I prefer to examine the patient very thoroughly by vagina in the hope that some minor abnormality may be discovered which may show the forceps operation to be unnecessary. Furthermore I prefer to be as certain as possible of the position of the head before applying a blade.

As the first stage of labor progresses the rectovaginal septum becomes thinner and thinner with each hour of contraction. The perineal body is likewise thinned. At the beginning of labor one finds a great wedge of tissue between the rectal finger and the pubis. At the end of the first stage there is only a moderately thick wall between the finger in the rectum and the thumb on the perineum. At first the bulky perineal body could be pulled outward by lifting the rectal finger toward the vaginal outlet; later the same movement finds a tense membrane which is attached to the fundal muscle. During contraction it can be felt to grow more tense. These findings tell the attendant what the uterus is trying to do even better than does palpation of the cervix by vagina.

It is not uncommon to have the cervix thinned and completely retracted over the presenting part for some time before the uterus is ready to empty itself. The attendant has watched a long tedious first stage and he thinks it ought to be over. He examines the patient vaginally and finds that he cannot feel any part of the cervival rim. Yet the membranes have not ruptured and the patient has no inclination to bear down. She does not feel like bearing down because the true supports of the uterus are not yet completely pulled up out of the pelvis. The posterior portion of the lower uterine segment is not yet ready for the pushing action of the fundal muscle. Until the fundus gets a good grip on the whole circumference to which a second stage uterus is attached, it does not do any pushing. The head will not slip down the posterior wall of the pelvis because the rectovaginal septum is not tense. It rumples and wrinkles in front of the head when the patient bears down and she tells the attendant that it doesn't do any good.

At this point occurs the most frequent obstetrical error. The attendant thinks that the second stage should begin and he institutes measures suitable to the second stage. Every possible one of these measures is a mistake because the uterus is still pulling; it hasn't started to push. It may be that the uterus will require as long as four to six hours more time to get ready to push even after the attendant can feel none of the cervical rim in front of the presenting part. Ordinarily it is much shorter. The following findings are indicative of the work the uterus still has to do in the business of pulling up its supports. The vaginal finger will find that the head is wedged tightly against the sides of the pelvis. A bit of tissue from the bases of the broad ligaments still remains to be pulled up. Anteriorly the head seems to need a shoe horn to get it down behind the pubis. It is held up in that manner because the posterior portion of the lower uterine segment is not yet ready for expulsive labor. If the full hand be introduced into the vagina a lip of the cervix can be felt high posteriorly which has not been entirely retracted above the largest diameter of the head. It usually takes the uterus longest to get its posterior attachments ready for expulsive labor.

One who habitually studies the processes of the first stage of labor by means of rectal examinations gains an appreciation of the neatness with which the uterus goes about its business. He tends to get away from the notion that

the amount of dilatation of the cervix is the only guide to its progress. He learns that considerable time is required for natural completion of an anatomically perfect lower uterine segment. And above all he learns that, when rightly managed, the uterus is a remarkably efficient organ. He learns to leave it alone.

HISTORY AND ORIGIN OF SYPHILIS

ROBERT EMMET JAMESON, M.D., Davenport

In reviewing the writings of different authors on the subject of syphilis one finds different opinions. Bones of mummies have been examined and different writers have had their say. Their opinions have been expressed and without facts on which to base them. In 1863 Dabry published a translation of Chinese manuscripts about 4,500 years old. In these manuscripts he considers that syphilis and its treatment were mentioned. Again we find opposition to these views by Japanese authorities who deny the accuracy of Dabry's conclusions.

If we are to believe that present day history and acknowledged authorities on the history of syphilis we must admit that syphilis was not known, or had it been accurately or positively described until after Columbus and his sailors visited Europe after their visit to America in 1492.

To support the above view, McDonah in his book on syphilis, under History of Syphilis, states that Romans rich and poor alike, led lives of unspeakable sexual filthiness. Had syphilis been in existence its incidence and treatment would have caused widespread remark.

From the above notes it would seem that the evidence of the early existence of syphilis in the old world was quite unsatisfactory. Lief Ericson, a Norwegian, in the year 1000, discovered a new land naming it Vineland, which is today known as America.

Now as to the character of Lief Ericson as compared to the character of Columbus who visited America some 500 years after Lief Ericson's discovery of Vineland. Lief Ericson was married, sent as missionary to Vineland. He was known to be honest, honorable, fair and just to all those with whom he had dealings. On his first visit and later visits to Vineland was accompanied by his wife and some of his sailors and their wives and daughters accompanied them. We do not find in history any records of immorality, nor do we find any records of disease or epidemics of disease in Norway after his return from Vineland, although he had seen, traded and mingled with Indians.

Columbus, on the other hand was wanted by his country (Italy) for debts due Italy from him, which seems to have been a very good reason for his leaving Italy.

In 1470 we find Columbus in Portugal. While there attending All Saints Convent for worship, one of the inmates noted his expression of divine worship and became interested in him. Columbus easily yielded to her charms. In 1484 Columbus left Portugal in secrecy to escape government spies. Diago, his lawful son, he took with him but deserted his wife. Next we read of him as a forlorn traveler with a little boy at the convent Rabida. Leaving his boy in the convent he later secured a letter from the Friar of the monastery, this Friar was also confessor to Queen Isabella. Next history tells us that he made friends with the Cardinals and through their influence gained an audience with King Ferdinand. In 1487 Columbus had in the meantime gained a reputation through his intimacy with Beatrice Enquez and an illegitimate son by her.

Next history advises us that through the influence of a Friar Columbus gained an audience with Queen Isabella. Columbus was to succeed, but his success was an error in geography and a failure in policy and morals.

Queen Isabella decided that he should make the visit to the new land (which had been his one great desire, plus his hope of finding gold). Boats, three in number, were fitted out for the trip. Crews must be had for the boats. He had some difficulty in securing sailors. Those who volunteered were men who were found in jails and prisons and they were offered four months pay in advance, and their freedom upon their return to Spain. (History advises us also, that Columbus was a shrewd man, that he had knowledge of the new land, as he had been a map and book seller, and records of Lief Ericson's discovery were available.) We will at least admit that Columbus was a well read man and must have had good personality when we see him as a beggar, poorly clad, a fugitive from justice and in a few short years he had made friends with Cardinals, Friars, King and Queen alike and finally convincing Queen Isabella who made his visit possible.

His crews secured and ready for the trip we find next that he arrives in the new land. Indians surrounded his boats, he makes note of them as being poor people without a religion, naked but of good form and face.

The above is mentioned to indicate the character of Columbus and his sailors, and the possibility of his moral dealings with the Indians, etc. One does not have to stretch his imagination in

the least to see the possibility of a standard of morals such as Columbus and his crew had. Columbus held many of the Indians as slaves, sold them as slaves, worked them in mines. Many died under treatment he gave them. Columbus's desire to discover the new land was gold.

Syphilis was unknown until after the arrival of Columbus from his visit to America in 1492, as the following authorities on the subject of syphilis agree: Morton, Hazen, Marshall and French, Thom, Thompson, Pusey and McDonah.

A Portuguese physician, Ruy Dias De Isla, was practicing medicine in Barcelona in 1493, the year Columbus returned from his visit to America. Dr. De Isla leaves a record of his conviction that syphilis came from Hayti and that it appeared first in the crew of Columbus. La Bubas in Italy called it the French disease, being introduced into Spain by Columbus and his sailors and Indians he had with him. After Columbus and his sailors visited Europe in 1492 and the dispersal of King Charles' army a fearful epidemic of syphilis followed and the progress of this epidemic can be traced from contemporary history, as follows:

Following the epidemic of the new disease after Columbus' arrival in Europe from America in 1492.—Both medical and lay writers began to describe a disease of the genitals which was accompanied by constitutional effects, and which was an entirely new disease to them. That syphilis was a new disease is shown by the fact that none, not one of the afflicted nations had a name for it. The Italians called it the Spanish or French disease and not unjustly so, for it was probably introduced by Spaniards serving under Charles VIII. The French called it the French disease because the defeated troops of Charles brought it back with them from the Italian campaign. The English called it the French disease because it reached England through France and the Scots and Turks also gave it the name of the French disease. The name syphilis was first mentioned by an Italian physician Frascator, who in 1530 published a poem "Syphilis Sive Morbus Gallicus".

The spread of the epidemic was as follows: Italy and Spain, 1494; France, Germany and Switzerland, 1495; Holland and Greece, 1496; India, 1498; Japan, 1569. The above countries and years in which the epidemic of syphilis was noted, with what history records give us, that one can readily be convinced of the epidemic and new disease being spread by Columbus and his sailors.

Having now established the origin of syphilis, later day facts regarding syphilis may be of interest.

Dr. John Hunter innoculated himself with what he supposed to be gonorrheal pus and later developed syphilis, this was the necessary proof for the identity of the two diseases. He however disbelieved in hereditary transmission of syphilis.

Dr. Hernandez in 1792 innoculated seventeen convicts with gonorrheal pus, all developed gonorrhea, which was more evidence regarding the two diseases (syphilis and gonorrhea) for it was not accepted at this time by all physicians that there was a difference between the two venereal diseases.

Ricord did not recognize the difference between soft or simple chancre and hard chancre. Rollet in 1852 showed the difference from examinations from infecting and infected persons. Rollet showed the existence of mixed chancre caused by double infection and Ducrey in 1889 discovered the bacilli of soft chancre. Van Sweiten in 1772 first made note of syphilis of the nervous system, Fournier a century later. In 1875 he discovered the syphilitic origin of tabes and general paralysis. Ricord, Hutchison and Fournier are today recognized as the fathers of clinical syphilology.

A sudden change at the beginning of the twentieth century has tended to supplant for clinical, pathological syphilology. In 1905 Schaudin and Hoffman discovered the "spirochete pallida", alleging it to be the cause of syphilis. In 1907 Wassermann's non-specific complement fixation test was first discovered; in 1909 Ehrlich's discovery of salvarsan. These three discoveries may aptly be called "The German syphilitic trinity".

Summary

Lief Ericson, a Norwegian, missionary, honest, fair, and just in his dealings, with no history of disease in those of his crew, or with those with whom he came in contact, made several visits to the new land, Vineland (America) and no record of disease or epidemic following his return to his native country among those with whom he associated.

Columbus, a fugitive from justice, wife deserter, his notoriety with Beatrice and an illegitimate son by her, his crews made up mostly of criminals freed from prisons and jails; brought a new disease, in fact, a terrible epidemic in those countries visited by him on his return from his visit to America in 1492, the countries in which the new disease developed and as described by medical and laywriters, later named syphilis.

Columbus, while he may not enjoy the honor of having discovered America, he has the honor, if honor it may be called, of being the first source of syphilis to the world.

The Journal of the Iowa State Medical Society

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THE REGISTRATION ACT

Referring again to the Registration Act, the question of penalty has been raised.

This is made clear in the statement that "every license expires June 30, 1925", and if one is found practicing without a registration card giving the number of his original license, he is subject to the penalty prescribed for persons practicing without a license.

There is no special machinery provided for the repeal of the law. The State Society has a legislative committee and each local society should have such a committee to consider questions relating to the welfare of the profession, where legislation is concerned. A cooperation of the local committee with the state committee would at least keep the profession informed as to threatened unfriendly legislation. Of course personal contact with a member's legislator is important, especially when such legislator conceives the idea that he is appointed by some power to improve the moral and social welfare of the state; but the arrangement of a well conducted group of experienced and influential physicians will accomplish more.

Dear Doctor Jones,
Wall Lake, Iowa.

I am glad to receive your criticism, because it gives me an opportunity to answer and explain some things without appearing to be constantly complaining. No one likes a "scold" and one gets tired of a scolding editor, or officer. The shifting of responsibility or "passing the buck" has come to be a recognized policy everywhere.

Now as to publication of papers. When a paper is read before the State Society, it is turned in to the official stenographer who takes down the discussion. These papers and discussion are taken home by the stenographer and the discussion extended and sent to the members who participated in the discussion, for correction or change. When all the discussion on a given paper is in, the paper, with discussion, is forwarded to the secretary, who checks it up and sends it to the editor, who goes over it for any error that may have been overlooked. Here is the point of delay. In a certain number of cases the author on reading his paper discovers some error he wishes to correct or some change he would like to make, and asks the privilege of taking the paper home for the changes, and delays or forgets to return it until after earnest solicitation by the editor or secretary. Others ask to use their papers for the purpose of reading before some local society—another source of delay. The greatest source of delay is in returning the discussions. It is now the 15th of September and not one of the papers read at the May meeting have been received, except the President's Address, and the papers of the eye and ear section, because the discussions are not in. About the middle of August, 1925, I received the manuscript of a paper from the secretary, with the note that "this is the last of the 1924 papers".

How can this be corrected? It may be said that if the papers and discussions were not handed in, in a reasonable time, the papers should not be published. I am sure the editor would hear from some one or many of the 2500 members. Today, the 15th of September, I have nineteen papers in type and ready for publication, but only seven of the nineteen has the author's proof been returned. Almost every author finds a few words he would like to change when he sees the printed copy. We generally have twenty papers ready except the return of the author's proof, and to secure the papers for the forthcoming Journals we are obliged to publish two or three papers without the author's approval, and we often receive complaints in consequence. If the author orders reprints, we make the suggested changes in the reprints, but the unchanged words are the permanent record in the Journal.

As to the county society reports we are largely dependent on the clipping bureau, only the signed ones are from the secretary of the societies. We have made some improvements in this respect through the efforts of the executive secretary,

but a large proportion of the society reports come from the newspaper clippings. Almost all the personal notes come from this source.

Another source of trouble comes from the local society secretary sending in the report of his society too late—after the form has been made up—and they must go over and we therefore consider late as better than never.

The contract made by the board of trustees provides that a Journal of sixty-four pages, including advertising, shall be published each month, but we assume the responsibility of publishing more. For instance, the August number has 80 pages and the July number 100 pages. In most of the western states the dues are $10 per year, and pay their responsible officers more generously. When you consider what the members of the Iowa State Medical Society get for $5 dues, the Journal and Medical Defense Committee's work, and otherwise, they should not complain.

We recognize the progressive spirit of the Iowa profession, but until the State Society places the above noted activities on a commercial basis, every member should feel under a moral obligation to co-operate and help those who give so much of their time and energy to building up and establishing the good name of the State Society.

What you say in criticism has come to the writer many times and has caused much worry and anxiety.

I am suggesting that you use your influence in urging members to prepare their papers with more care. I have had some difficulty in making out the names of the authors in some cases, or where the paper was read—in a society paper—and have two or three papers we have not been able to publish because no name or place appear on the manuscript. We have typewritten papers so pale that we can read the manuscript only with difficulty. All papers should be double-spaced, but not a few have the typewritten lines so close together that one line runs into another and are therefore difficult to read and cause the printer much trouble. Some changes are made in the typewritten copy with a pen that are quite difficult to decipher. Again, many papers are evidently dictated to an inexperienced stenographer and have not been edited by the author, which have given the editor a whole evening to correct. We suppose the author had in mind that it was for him to furnish the intellectual features of the paper and for the editor to arrange them.

We have been criticised for publishing papers by inexperienced and amateurish writers who had little or nothing to say. This is a valid criticism and should be observed. We do not accept such papers unless they have been read before the State Society or authorized by the local society. Our excuse in adopting a liberal policy has been, that the writing of good papers has only been reached by experience and many trials in expressing one's self in print. Many good writers have had this experience and look over their earlier efforts with considerable amusement. A Journal like ours should encourage, especially young men, to prepare papers for their local societies, with the reward of publication, but it exhausts one's patience to have papers come in so carelessly prepared that the editor must in good part rewrite them, and struggle with sentences to determine just what the author meant.

The editor desires to thank Dr. Jones for his free criticism of that part of his work which has caused him so many hours of anxiety. The criticism is particularly opportune in that it gives him license to preach to and scold his friends and associates in a manner he would not venture to do otherwise.

One other point we would like to mention is the fact that a considerable proportion of the papers read before the State Society in May do not reach us until February or March of the following year; I refer to the manuscript. On September 28 the first installment of eighteen papers for 1925 reached us except the eye and ear section and the President's Address.

MALPRACTICE

Again. We have received a letter from a watchful doctor to the effect that he is "mad" and is "getting madder every minute"; as to his present condition we are not informed. For some time past we had been receiving letters from various doctors over the state as to a malpractice indemnity insurance company in Des Moines called the "Professional Insurance Company". We did not know anything about this company and requested the executive secretary to look it up, and after we had secured the information, we published it in the Journal for the information of our members, being particular to note who made up the company, giving their titles and degrees, innocently assuming that this information would enable our members to determine if they would like to carry a policy in this company.

It is presuming on the intelligence of our members to call particular attention to many of the absurd claims made. Malpractice is a very definite thing and not influenced by delightful and sympathetic sayings or by assurances that they will "assist and guide your local attorneys" and "train you so that successful malpractice suits against you will be impossible", or "to guide you

away from malpractice entanglements". We have to deal in courts of law with hard facts. All these commercial malpractice insurance companies are in business for profit and not because of a desire to benefit doctors or distressed humanity, but for gain. It is a business and is conducted as such and any other claim would be suspicious, at least, if not silly and foolish.

The policy of the Journal has been to decline advertisements of malpractice insurance. We are firmly of the belief that commercial malpractice insurance companies increase the number of suits and increase the chances of judgments, therefore, to carry these advertisements would be inconsistent with our belief.

It is generally believed that doctors purchase indemnity of insurance corporations and the corporation pays the judgment and not the doctor, and the jury finds it easy to assess a judgment against a corporation, which they would not do otherwise. The fact of commercial insurance assures a financial backing that makes a judgment or a forced settlement good (all judgments of individuals are not good); claim attorneys find more chances if doctors carry indemnity insurance.

Commercial indemnity insurance is a great comfort to the doctor who has failed in his defense, but his risks are greater. In the present state of affairs there appears to be no other way but to carry indemnity. We have said all this before, but have been prompted to say it again by our "mad" doctor friend, who appears to have a horrible fear that the Iowa profession has been corrupted by the Journal and that all will be taking out policies with the new osteopathic company. We say osteopathic company because it will be observed that the D.O. degree predominates.

In a non-official capacity, we would suggest that you carry indemnity policies, but keep them secret, and permit the State Society to appear for you. The committee do not regard it material what company you insure in, whether it be osteopathic, chiropractic, Christian Science, whether Methodist, Baptist or Presbyterian, but it is essential that the company has complied with the insurance laws of Iowa, and that is what we found to be true of the corporation under consideration. The other points are matters of choice.

There is one matter that might be considered in this connection, which we have referred to in a previous number of the Journal, and that is, that the chiropractors are exposed to the risk of malpractice suits. Formerly it was supposed that chiropractors were not practitioners of medicine, but chiropractors, and that not being practitioners of medicine, were not liable for accidents in medicine, and that people who employed chiropractors only employed them as such and that the chiropractor was not liable for the results. This view was held by the district court in a Wisconsin case and the case was dismissed on that ground. But the supreme court of Wisconsin reversed the lower court, holding that chiropractors held themselves out as treating disease and were liable for errors in diagnosis, ordered that the case be tried on its merits. This and other cases where the courts held that chiropractors might be liable for results in practice, has compelled these people to make some provision for malpractice defense and as reliable commercial malpractice companies are not willing to carry this kind of liability, they have been compelled to organize companies of their own. Whether the Professional Insurance Corporation is an offspring of the chiropractors, we do not know. We have heard of commercial enterprises employing taking selling devices, and this may be one of them.

A DELIGHTFUL CUSTOM

On April 7 the Jackson County Medical Society held its seventh annual banquet at the Bellerive Hotel, Kansas City. This annual banquet took the place of the regular meeting of the society for that night and former presidents and members in practice more than fifty years were the guests of honor.

At the meeting April 7 one hundred and ninety-eight members were present. There were five honored guests, physicians who have been in practice more than fifty years, namely: Dr. John R. Snell, Dr. C. A. Dannaker, Dr. Wm. C. Morris, Dr. Chas. W. Burrill, Dr. Chas. P. Cathcart. Nineteen of the former presidents were also present and seated among the guests of honor.

STERILIZATION OF THE UNFIT

In England under the common law system the rights of individuals would have a somewhat different application than in the United States in that the law would have a uniform application over the entire country, while in the United States statutory law would prevail as in the sterilization of the unfit. If the legislative body of a state authorizes sterilization of the unfit, and the statute is not held unconstitutional, the surgeon may perform the operation under the provisions of the act. If there is no statute the English law would probably prevail.

To determine the risk which the surgeon assumes in performing this operation the British Medical Association submitted the question to Sir Travers Humphreys for an opinion.

Sir Travers holds "that any physician who performs vasectomy on the male or salpingectomy on the female on eugenic grounds would be acting illegally, even though the consent of both parents was obtained. The operation of sterilization is legally an assault. The only legal justification for performing it on a person who from mental weakness is incapable of giving a reasoned consent would be that the operation was necessary on grounds of health. The legal risk involved in such an operation would attach to all persons concerned, the physician who performed it and the parents who gave consent. The physician would have to answer to a criminal indictment for unlawfully wounding. A civil action for damages could also be brought by the defective or his or her next friend in the same manner as actions are now brought by infants, and damages might be recovered from the physician."

The opinion goes on to state that the jury might be influenced by the fact that the welfare of the public was involved in the particular case and that the operation was justified on the ground of public policy.

But the physician should exercise great care in these and other apparently justifiable operations in securing legal consent from the personal involved from parents and guardians, or the court. Not a few losing suits for damages have been instituted against physicians for neglecting these precautions.

HYPERTROPHIC ARTHRITIS OF THE VERTEBRA

Certain cases of low back pain caused by slight injury are subjects of claims against employers in which the symptoms are altogether in excess of what might be expected, considering the nature of the injury. Inasmuch as the cost of compensation is borne by the consuming public, it is a matter of considerable importance to determine what underlying conditions may contribute to the disability.

Before a physician can intelligently testify as to the nature and permanency of the injury, an x-ray examination should be made with reference to the existence of hypertrophic arthritis. If such a condition is found, it is fair to presume that it antedated the injury and will therefore explain why a slight injury has disabled the workman. As it is a common practice to employ laborers without a physical examination, the employer may be held accountable to a certain degree for a reasonable liability for the results of an injury, however slight, but if it can be shown that an arthritis of the vertebra existed prior to the employment, the question of compensation would be materially modified. It may, of course, be contended that a disability following a slight trauma was not the result of an alleged injury, but the natural result of the disease when an x-ray examination reveals the existence of a hypertrophic arthritis.

All this is important in measuring a reasonable adjustment.

BASAL METABOLISM

Dr. Burton E. Hamilton of the Frank H. Lahey Clinic, Boston, Massachusetts, in the discussion of basal metabolism in the diagnosis of toxic goiter, published in the Surgical Clinics of North America of December, 1924, holds that basal metabolism estimations are only made after a diagnosis of thyroid toxicity is suspected. He also holds that to be of value the test must be made in a carefully conducted laboratory. That individuals vary greatly in their reaction to the test. Repeated readings on succeeding days show astounding variations—usually from a higher to a lower reading, sometimes in the other direction. This is true of toxic and non-toxic individuals.

Dr. Hamilton offers the following illustration:

"A patient admitted to the hospital, and not yet examined clinically, is said to have a basal metabolism reading of plus 35. One has no idea as to whether that patient is toxic. If, on examination, the patient shows a clear picture of thyroid toxicity, one is satisfied with the basal metabolism estimation and the diagnosis and proceeds accordingly. If one is not sure of the clinical signs, the test is repeated. Individual instances of variation of basal metabolism from clear clinical diagnosis and treatment can be quoted ad infinitum. On the other hand, in statistical reports on groups, basal metabolism estimations have shown clearly that: (1) in the toxic states it averages high; (2) in non-toxic states it averages low; (3) in a group of patients clinically changing with surgical treatment from 1 to 2 it first averages high and then averages low. One would not be satisfied to attempt clinical diagnosis of thyroid toxicity without the aid of basal metabolism; nor would any diagnostician dare to depend on this alone."

The position taken at the Lahey Clinic as to the value of basal metabolism in the diagnosis of toxic goiter, is practically the same as held at the Mayo Clinic.

THE GROWING CAUSES OF THE DECLINE IN CHIROPRACTORS

A chiropractor of Constantine was fined $100 and costs in the circuit court at Centerville, Michigan, June 5, it is reported, following a plea of guilty to a charge of practicing medicine without a license.

A chiropractor of Belleville, Illinois, was found guilty by a jury in the county court June 24, on a charge of practicing without a license.

A chiropractor of Montgomery, Alabama, was convicted on a charge of treating human beings without a license from the state board. The case was taken to the court of appeals and then to the supreme court, which affirmed the findings of the lower court.

Chiropractic bill defeated in the legislature of the Territory of Alaska 11 to 5.

Chiropractic bill defeated in legislature of Massachusetts providing for separate boards of chiropractic examiners.

The state health department ordered several chiropractors of Hancock County, Illinois, to discontinue practice, two who refused to obey the order were fined $100 each and costs, for practicing without a license.

THE HARRISON NARCOTIC LAW AND PRACTICE OF MEDICINE

The provisions of the Harrison Narcotic Law have been the source of much worry, anxiety and misunderstanding on the part of physicians, and courts of law have held physicians guilty of criminal acts in presenting or dispensing narcotic. It would hardly seem competent for Congress to exercise direct control of the practice of medicine beyond the fair standards of practice. That is, in regard to the use of remedies recognized by his school of medicine. But it is recognized that Congress may pass laws for revenue purposes, and this applies to the legislation relating to the use of narcotics, as the supreme court says: "the object of the narcotic law is to provide revenue and whatever moral end it may reach as a revenue measure, but never intended to interfere with professional conduct".

The Journal of the American Medical Association publishes in the August 1, 1925 number, a full text of the court's decision as follows:

The supreme court of the United States in reversing a judgment which affirmed a conviction of defendant Linder of violating the Harrison Narcotic Law and in remanding the cause for further proceedings says that, "in effect, the indictment alleges that the accused, a duly registered physician violated the statute by giving to a known addict four tablets containing morphine and cocaine with the expectation that she would administer them to herself in divided doses, while unrestrained and beyond his presence or control, for the sole purpose of relieving conditions incident to addiction and keeping herself comfortable. The indictment did not question the physician's good faith, nor the wisdom or propriety of his action according to medical standards. It did not allege that he dispensed the drugs otherwise than to a patient in the course of his professional practice or for other than medical purposes. The facts disclosed indicated no conscious design, to violate the law, no cause to suspect that the recipient intended to sell or otherwise dispose of the drugs, and no real probability that she would not consume them.

The declared object of the narcotic law is to provide revenue, and this court has held that whatever additional moral end it may have in view must be reached only through a revenue measure and within the limits of a revenue measure. Congress cannot under the pretext executing delegates' power, pass laws for the accomplishment of object not entrusted to the federal government. Obviously, direct control of medical practice in the state is beyond the power of the federal government. Incidental regulation of such practice by Congress through a taxing act cannot extend to matters plainly inappropriate and unnecessary to reasonable enforcement of a revenue measure. The enactment under consideration levies a tax upheld by this court, on every person who imports, manufactures, produces, compounds, sell, deals in, dispenses or gives away opium or coca leaves or derivatives therefrom, and may regulate medical practice in the states only so far as reasonably appropriate for or merely incidental to its enforcement. It says nothing of "addicts" and does not undertake to prescribe methods of their treatment. They are diseased and proper subjects for such treatment, and this court possibly concludes that a physician acted improperly or unwisely or for other than medical purposes solely because he has dispensed to one of them in the ordinary course, and in good faith four tablets of morphine or cocaine for relief of condition incident to addiction.

Mere pretense of such practice, of course cannot legalize forbidden sale, or otherwise nullify valid provisions of the statute, or defeat such regulations as may be fairly appropriate to its

enforcement within the proper limitations of a revenue measure.

In refering to another case the court says it cannot accept as authority the view that a physician who acts bonafide and according to fair medical standards, may never give an addict moderate amounts of drugs for self-administration in order to relieve condition incident to addiction. Enforcement of the tax demands no such drastic rule, and if the act had such a scope it would certainly encounter grave constitutional difficulties".

It will be seen from the reading of this opinion that this direct control of the practice of medicine is with the state and not the federal government. The federal act is a revenue measure, but if the physician uses his profession as a practice to traffic in narcotics he will come in contact of the federal law and be subject to severe penalties.

SERVANT OR SLAVE

"The inclosed $1.30 is payment received after being subpoenied to court, traveling sixteen miles, acting as an expert witness and being on the witness stand for half an hour."

Please print in the State Journal as a warning to fight shy of legal entanglement.

R. A. Hills, M.D., Russell, Iowa.

Unfortunately there is no remedy for this. Dr. Hills should have received mileage for the distance traveled, but it has been held in Iowa that if a fee higher than the ordinary witness fee is provided for, it must be by the action of the board of supervisors or by private agreement. If a witness is called by subpoena and refuses to testify, he is liable to be sent to prison for contempt of court.—(Editor.)

SOCIETY PROCEEDINGS

Cass County Medical Society

The general meeting of the Cass County Medical Society was held at the Calumet Cafe, Atlantic, at 6:30 p. m., October 14. The first proceedings of the society was a banquet at the Calumet, with a banqueting table forming three sides of a square, on the two sides of which were seated seventeen doctors, together with their wives and two nurses. Dr. R. A. Becker, president of the society, presided. An elegant three-course dinner had been prepared by the Calumet people.

After the dinner Dr. F. J. Becker of Atlantic, gave an interesting and instructive talk on Our Profession from Within. It was well received.

Following Dr. Becker, Dr. Frank W. Porterfield of Waterloo, who was present as our guest and who years ago was a practitioner of medicine and surgery in Atlantic, was called upon for a few remarks. The Doctor, as is his habit, responded graciously. The Doctor desiring to leave at 9:30 p. m. for his home in Waterloo, and being on the program with a paper entitled The Endocrines, the business portion of the society was left for the last, and Dr. Porterfield at once proceeded with his paper, which was discussed by several doctors present.

In passing we will say, the ladies were taken out to the movies by Atlantic ladies connected with the profession.

The second paper on the program was on Diabetes Insipidus, by Dr. R. L. Barnett of Atlantic. The discussion of Dr. Barnett's paper was opened by Dr. W. S. Greenleaf of Atlantic, who was followed by a number of other doctors.

Dr. A. Weaver of Cumberland, who was to have reported a case, was unable to be present.

The last paper was by Dr. W. F. Graham of Atlantic and was entitled, A Case of Somnambulism.

A committee selected at the April meeting, composed of Doctors Weaver and Anderson of Cumberland, Doctors Benquite and Miller of Massena, of which Dr. C. L. Campbell of Atlantic was chairman and which was to communicate with the Adair County Medical Society with a view of consolidating the two societies, under the name of Cass-Adair Medical Society, was not ready to make a report, and the time was extended to the next meeting.

Dr. F. J. Becker of Atlantic moved that free thirty minute examinations of school children, of whom 1500 are now being labored with by Atlantic doctors, be discontinued. The motion was seconded by Dr. H. A. Johnson of Atlantic. After a free discussion, the motion was carried.

A proposal that a heart and lung clinic be held in Atlantic by Doctors Peck and Minert of Des Moines, was tabled. The consensus of opinion was, the local profession could handle this matter.

On motion of Dr. W. S. Greenleaf of Atlantic, and seconded by Dr. James Maynard of Adair, that the annual dues be raised from $6.50 to $8.50, with two plates free at the annual general meetings with banquets, was carried unanimously.

M. F. Stults, Sec'y.

Des Moines County Medical Society

With about fifty local and visiting doctors from nearby towns in attendance, the Des Moines County Medical Society resumed its regular monthly meeting, by holding a meeting and dinner at Hotel Burlington, Wednesday afternoon, September 9. The program started about 3 o'clock in the afternoon and dinner was held at 6 o'clock.

A number of interesting topics were discussed by authorities, during the course of the program. Among the speakers were Dr. William Von Luckum, of Rochester, Minnesota; Dr. August Suthoff, director of the state hospital for insane at Madison, Wisconsin, and Dr. Hugo W. Traub of Chicago. Dr. Crow of Burlington was scheduled to speak but was

unable to be present. Doctors from many towns in this vicinity were in attendance.

An inspection of the three hospitals of Burlington was made Wednesday by Dr. J. B. Tyrrell of the American College of Surgeons at Chicago. He is making a survey of many of the hospitals of the country, and expressed himself as well pleased with the hospital facilities of this city.

Hardin County Medical Society

The mid-summer meeting of the Hardin County Medical Association was held in Eldora, Friday, September 4. A banquet for the members of the association and their wives was held at Pine Lake at 6 o'clock, at which there was a goodly number present.

Following the banquet the members went to the Odd Fellows hall where interesting talks were given. While the program for the members was in session the ladies were entertained at the movies.

Those in attendance from Iowa Falls were Dr. C. F. Cron, Dr. C. M. Wray, Dr. C. W. Mangun and Dr. Bessie J. Garver.

Iowa County Medical Society

The Iowa County Medical Society met in a special session at the public library in Marengo, Thursday, September 7, at 2:30 p. m.

The following program was given:

Case Report, Thrombosis—Septic and Non-Septic, Dr. F. C. Schadt, Williamsburg.

Case Report, Melanosarcoma, Dr. Ciney Rich, Williamsburg.

When Should Cholecystostomy be Performed, Dr. J. L. Augustine, Ladora.

Empyema, Dr. Howard L. Beye, professor of surgery, S. U. I. Medical School, Iowa City.

Officers—President, Irvin J. Sinn, M.D.; vice-president, L. B. Amick, M.D.; secretary-treasurer, Ciney Rich, M.D.; delegate to state convention, Henry G. Moershel, M.D.; alternate, Jasper L. Augustine, M.D.

Board of Censors—H. G. Moershel, M.D., term expires 1925; J. E. Dvorak, M.D., term expires 1926; F. W. Bush, M.D., term expires 1927.

We had an excellent turn out and free discussion on the part of most of the members present, made the meeting an exceptionally good one. A rising vote of thanks was extended Dr. Beye for his able paper. The meeting adjourned to Eby's Cafe for refreshments.

Ciney Rich, Sec'yTreas.

Linn County Medical Society

New officers of the Linn County Medical Society: Dr. B. L. Knight, Cedar Rapids, president; Dr. M. E. Adams, Central City, vice-president; Dr. W. E. Peschau, Cedar Rapids, treasurer; Dr. L. M. Downing, Cedar Rapids, secretary.

L. M. Downing, Sec'y.

Polk County Medical Society

The Polk County Medical Society met for its regular meeting in the Oak Room of the Fort Des Moines Hotel, September 29, 1925. The meeting was called to order at 7:30 p. m. by the president, Dr. W. W. Pearson.

The minutes of the June meeting were read and approved.

Dr. Habenicht presented a case of Myelopathic Albumosuria with copious excretion of Bence-Jones proteose.

Dr. H. C. Willett presented a patient with Bromoderinia and discussed the case.

Program

1. The Interstate Post Graduate Clinical Tour—A. C. Page, M.D., and J. C. Rockafellow, M.D.
2. Some Points on the Differential Diagnosis of Functional and Organic Diseases of the Nervous System—T. B. Throckmorton, M.D.

It was moved by Dr. Osborne that flowers be sent to Dr. Conkling, who is confined to his home with sickness. Duly seconded and unanimously carried.

The secretary presented the matter of furnishing "Hygeia" to the county schools as was done last year. It was moved and seconded that the society buy fifty subscriptions to "Hygeia" and have them placed in certain schools in the county, cost to be $85. Unanimously carried.

The application of Dr. Johnson was presented to the society and it was referred to the board of censors.

The secretary read a letter from the "Science Extension" concerning men of note who were coming to this country from foreign countries during the year. The secretary was instructed to obtain further details concerning the matter and report at the next meeting.

The following bills were presented: Secretary-treasurer, salary, July, August, September, $75; Iowa Printing and Supply Co., $6.30.

The matter of the Polk County Clinic this year was presented and discussion was called for. As there were no suggestions the subject was dropped.

Eighty-two members and ten visitors were present. Total number present ninety-two. Meeting was adjourned at 10:30 p. m.

L. K. Meredith, Sec'y-Treas.

Scott County Medical Society

I have been rather remiss in sending in my reports on the Scott county meetings and have conceived the idea of sending reports on all of them in this letter and you may do as you wish about publishing any or all of them.

April 14, 1925

Our society concluded that the multiplicity of medical meetings was cutting down the attendance and interest, and the lack of these two elements made it shameful to ask anyone of note to travel any distance to talk to the meetings, and thus there was the possibility at least of a tendency to deterioration of all of the organizations. To meet this possible

evil the Scott County Society and the Rock Island (Illinois) County Society agreed upon a plan to hold joint meetings alternating between the cities of Davenport, Rock Island and Moline, thus making larger attendance, more enthusiasm, attraction for the best speakers, and cutting down on the number of monthly medical meetings.

Under the plan just outlined the first joint meeting was held at the Le Claire Hotel, Moline. Thirty-five attended the dinner and over 100 were present at the scientific meeting. The business sessions of the societies were held separately before the program. Agreement was reached to close the offices on Wednesday afternoons from May 1 to November 1, and to carry an advertisement in the papers to that effect. The transfer of membership of Dr. B. Frank Walters from Ramsey County, St. Paul was accepted. (Dr. Walters succeeded to the practice of Dr. Lee Weber, but has since returned to practice in St. Paul, Minnesota.)

Program: Movie reel, Working for Dear Life, stressing the desirability of periodical health examinations. Loaned by the Metropolitan Life Insurance Company. Diagnosis of Chronic Abdominal Disease, Dr. David Berkman, Mayo Clinic, Rochester, Minnesota. Diagnosis and Treatment of Exophthalmic Goiter", Dr. Chas. Elliott, Chicago, Illinois. He emphasized points in early diagnosis, saying this should be made by the man first seeing the case, and then stressed early surgical treatment before visceral damage has been accomplishd. X-ray, radium, Lugol's solution and rest give a certain amount of relief but early surgery is best.

May 4, 1925

The second joint meeting with the Rock Island County Society was held at the Davenport Chamber of Commerce. Twenty-five attended the dinner during which Peter McArthur and Nat Ossman sang songs and entertained the diners. Dr. R. P. Carney told of the engagement of two of the members, Drs. Ott and Doonan and presented each with a rolling pin symbolic of the authority vested in each of them in his household.

Application of Dr. J. W. Richards, Le Claire, was referred to the censors. Committee appointed to arrange a fee table and study the problem of health examinations. Dr. R. P. Carney on behalf of the board of trustees of Pine Knoll Sanitarium invited the two societies to meet at that institution at some time in the fall. The invitation was accepted.

Program: Meeing the Menace of Tuberculosis, movie reel loaned by the Carlyle Ellis Film Company, New York, depicting the method of control and cure of tuberculosis in New York. Problem of Lighting and Illumination as it Affects the General Practitioner, Dr. W. F. Boiler, Iowa University Medical School. The Clinical Application of Some of the Newer Concepts of Immunity. Dr. Don M. Griswold, department of preventive medicine, Iowa University.

June 9, 1925

The Scott County Society was the guest of the Rock Island County Society, arrangements being made for golf in the afternoon, dinner in the evening, followed by the scientific program, all at the Short Hills Country Club in Moline. The dinner and program were attended by sixty doctors and their wives.

Program: Dr. James F. Cooper, New York, director of the Clinical Research Department of the American Society for Birth Control, talked before the general meeting after the dinner, on the general phases of birth control. Before the scientific meeting he talked about the technique of birth control. Dr. Dean Lewis talked on fractures, illustrated with lantern slides. Dr. Oliver J. Fay, Des Moines, read a paper on Some Bone Lesions of Obscure Etiology, illustrated with lantern slides.

September 8, 1925

The regular joint meeting with the Rock Island County Society was held at the Pine Knoll Sanitarium, Davenport. The new addition to the institution was inspected after which a delightful dinner was served. Attorney C. W. Jones, chairman of the board of trustees welcomed the societies to the sanitarium and pointed out that it was one of the best equipped in the state at this time. Dr. George Braunlich for the Scott County Society and Dr. A. E. Williams for the Rock Island Society responded with graceful acknowledgment for the courtesy shown and assured the trustees of their interest and support of the institution. Dr. R. P. Carney, medical director of the sanitarium, outlined the work of the organization and welcomed the doctors to bring their patients and cooperate with him in their care.

The application for membership of Dr. G. W. Lorfeld was read and referred to the censors.

Program: Clinical Observations in Europe, Dr. J. S. Weber and Dr. D. J. McCarthy. Diagnosis and Treatment of Non-malignant Diseases of the Cervix Uteri, Dr. Carl W. Davis, Milwaukee.

Dr. Davis described the method for application of the cautery to the cervix for chronic cervicitis with eversions or cysts, citing the method as superior to amputation of the cervix as well as being capable of accomplishment in the office. He also described a cone shaped excision of the cervix as being preferable to transverse amputation of the cervix where that operation would be indicated. He illustrated his talk with beautiful hand colored slides.

Gastric Ulcer, a motion picture reel, demonstrating the various types of gastric ulcer and their diagnostic points in the x-ray.

Arranged by Dr. Lewis Gregory Cole, New York.

Paul A. White, Sec'y.

Tama County Medical Society

The Tama County Medical Society held its October meeting in Traer on the 9th.

After a one o'clock chicken dinner at Hotel Oxford at which twelve doctors and their wives were present, the company repaired to the auditorium of the public library where the regular meeting was held.

Dr. McDowell of Gladbrook read a paper prepared

by Dr. A. F. Walters, also of Gladbrook, who was unable to attend. Subject, Treatment of Wounds. Dr. E. T. Launder of Garwin presented a paper on Recreation—giving an interesting experience of a seventy-five hundred mile automobile trip recently taken throughout the West by himself and Mrs. Launder. Dr. A. J. Farnham of Traer presented two unusual and very interesting clinical cases. The first being a case of Polycythemia Vera. The second, showing a transplantation of the one remaining ureter into the skin over the crest of the ilium.

After the adoption of a new constitution and by-laws it was decided to hold the next regular meeting in Tama.

Albert A. Crabbe,
Chrm., Publicity Committee.

Winnebago-Hancock Medical Society

The members of the Winnebago-Hancock Medical Association met at the Forest City Golf Club September 8, for one of the several meetings that this organization holds each year. There were twenty-three members and guests present.

Dr. Throckmorton, of Des Moines, a specialist on nervous diseases, read a paper on Some Points of Diagnosis Between Functional and Organic Diseases of the Nervous System, after which Drs. Woodward, Crabbe and Kenefick discussed the many points that were brought out in Dr. Throckmorton's paper.

Dr. Beam of Rolfe, medical counsellor of the tenth congressional district, then gave a short talk on the organization of medical associations and what they aimed to accomplish through organization. The meeting was cut short due to the fact that Drs. Throckmorton and Beam were scheduled to appear at an association meeting at Estherville the same evening.

Austin Flint-Cedar Valley Medical Society

The autumn meeting of the Austin Flint-Cedar Valley Medical Society held Tuesday, October 6, 1925, at Nashua, was called to order by the president, Dr. J. McDannell at 11 a. m. The minutes of the last meeting were read and approved. The program for the morning was then given as printed. It consisted of the following papers:

Ovarian Pregnancy—Dr. R. M. Mayne, Greene.

Madelung's Deformity—Dr. W. J. McGrath, Elkader.

Some Surgical Conditions Found in the Lower Abdomen—Dr. M. J. McGrane, New Hampton.

The meeting was then adjourned for lunch and reopened at 1 p. m. A short business session was held at which time the resignation of Dr. L. A. West as secretary was read. It was moved by Dr. Cutler and seconded by Dr. Evans that the resignation be accepted. Carried. Dr. W. A. Rohlf nominated Dr. L. R. Woodward of Mason City for the office of secretary. This was seconded by Dr. Stuart. There were no further nominations and Dr. Woodward was unanimously elected to the office. The place of the next mid-summer meeting was brought up for discussion. It was moved by Dr. Starr and seconded by Dr. W. A. Rohlf that the president and secretary be authorized to arrange for the place of the next meeting. This was carried.

An application for membership was received at this meeting from Dr. L. L. Carr of Clermont.

The afternoon program was then given as printed with the exception of the paper on Intestinal Obstruction by Dr. J. E. Brinkman of Waterloo, who was unable to be present. The program was as follows:

Chorea—Dr. F. R. Sparks, Waverly.

Diagnosis and Management of Abortions—Dr. P. E. Stuart, Nashua.

Intestinal Obstruction—Dr. J. E. Brinkman, Waterloo.

Practical Therapeutics—Dr. C. C. Smith, Clarksville.

Past President's Address—Dr. C. F. Starr, Mason City.

A Few Observations of European Clinics—Dr. W. A. Rohlf, Waverly.

All of the papers presented were intensely interesting and promoted free discussion.

At 6:30 the Austin Flint banquet was held at the opera house. The menu and entertainment were most thoroughly enjoyed by the one hundred guests who attended. The banquet was followed by a dance which provided a fitting end to a successful day.

The ladies were entertained at a luncheon at the hotel at 1 p. m., following which they were taken to the Little Brown Church and then to the home of Mrs. P. E. Stuart where a very delightful musical was given.

The Nashua doctors and their wives are to be congratulated for the excellent entertainment provided throughout the day which made the meeting most successful.

L. A. West, Sec'y.

Sioux City Medical Society

Dr. Henry Hanson, member of the international health board of the Rockefeller Foundation, was the principal speaker at a meeting and banquet of the Sioux City Medical Society at the Jackson Hotel September 9.

MEDICAL LIBRARY ASSOCIATION AND HIGH COST OF GERMAN MEDICAL PUBLICATIONS

At the annual meeting of the Medical Library Association held in Atlantic City in May, one of the most important subjects under discussion was the present attitude of the German medical publishers in the high prices charged foreign subscribers for their medical publications and the greatly increased output of their periodicals.

In compliance with the action taken, the executive committee is now making an investigation of this matter. As a result of its findings, it is to decide whether or not concerted action on the part of medical libraries of America will cause the German

publishers to curtail their output and reduce the cost of their publications to their American customers.

A number of the libraries in the association have donated freely of their duplicates and other organizations have provided subscriptions for American medical publications to aid German libraries and physicians in replenishing their depleted files and in acquiring current literature. It appears from the action of the German medical publishers toward American purchasers of their publications that this evidence of good will and cooperation on our part has been and is little appreciated.

All individual subscribers and purchasers of German medical publications are asked to lend their endorsement to the effort now being made by the libraries. Those willing to join in the movement in order to bring about united action on the part of both libraries and individual subscribers are requested to communicate with Miss Margaret Brinton, librarian, Mayo Clinic, Rochester, Minnesota.

PACIFIC COAST SURGICAL ASSOCIATION

Representative surgeons of the Pacific Coast met, April 11, at the Hotel St. Francis, San Francisco, and organized the Pacific Coast Surgical Association. Cities represented included Seattle, Spokane and Everett, Washington; Portland, Oregon, and Oakland, Santa Barbara, San Diego, Los Angeles, Pasadena and San Francisco, California. Dr. Charles D. Lockwood, Pasadena, was elected president; Drs. Stanley Stillman and Wallace I. Terry, both of San Francisco, vice-presidents, and Dr. Edgar L. Gilcreest, San Francisco, secretary-treasurer. The council comprises Drs. James Tate Mason, Seattle; Harold Brunn and Philip K. Gilman, both of San Francisco; Paul Rockey, Portland, Oregon, and Clarence G. Toland, Los Angeles. The next meeting will be February 26-27, 1926, at Del Monte, California.—Jour. A. M. A.

SOME EXPERIMENTS IN FEEDING POTASSIUM IODIDE

The Iowa Agricultural Experiment Station at Ames, Iowa, has been doing extensive work in the administration of potassium iodide to livestock. Even though no fetal athyrosis or hairlessness of new born pigs has been noted at the station during the past fifteen years, nor any sign of iodine deficiency detected, it appears that the swine (sus scrofa) were in need of iodine for additions of potassium iodide to the ration of young growing pigs in three different years increased their rate of growth some 10 per cent, as measured by live weight, and likewise increased their dimensional growth in height, length, and in leg circumference. The potassium iodide also increased the nutritive value of the feed nutrients injested.

The work in potassium iodide feeding to swine has recently been compiled in bulletin form at the Iowa station. The new bulletin contains a number of maps showing the relative distribution of simple goitre of man in the United States, prevalence of exophthalmic goitre in the United States and the iodine content of drinking water in various sections of the nation. Anyone interested in the work of the Iowa station in thes iodide feeding tests may secure a copy of the new iodine bulletin free by addressing the Bulletin Section, Ames, Iowa. The bulletin is known as research No. 86, "Studies in Iodine Feeding". It was written by John M. Evvard and C. C. Culbertson.

GOLDEN RULE SUNDAY, DECEMBER 6

Dr. Wendell Phillips, president of the American Medical Association, has accepted the chairmanship of the Golden Rule Sunday Co-operating Committee as the representative of the medical profession. The object of the committee is to promote international good-will and to focus attention on the needs of the war orphans of the Near East.

Golden Rule Sunday falls this year on December 6. On this day you are asked to eat a humble meal of bread and stew such as the homeless children under American care in the Near East eat every day in the year. Then make as adequate provision for them as you would like to have made for yourself if conditions were reversed, remembering: "Whatsoever ye would that men should do unto you, do ye even so unto them."

Aside from caring for the war orphans of the Levant, Dr. Phillips calls attention to the great medical work that the Near East Relief has initiated, especially in Greece, where the necessity for stamping out malaria among the orphans had led to wider service to the entire community. The most notable illustrations of this are to be found in Macedonia and the ancient city of Corinth, where malaria has been reduced as a result of an organized campaign conducted under the direction of Near East Relief doctors and nurses. The complete absence of typhus, where last year there was an epidemic carrying off large numbers of victims is largely attributed to the precautionary measures taken in connection with the institutional work of the Near East Relief, cooperating with governmental agencies.

The "K" Fund, provided by one of the many friends of Near East Relief, has, during the past year, enabled the organization to reach outside of the orphanages and give elementary medical care in the refugee camps and villages about Salonica, the great refugee port of Greece.

Another important development of the medical work in the Near East, where there is a notable dearth of trained nurses, has been the organization of a nurses' training school in Athens and Alexandropol, the metropolis of Russian Armenia, where the older orphan girls are given training as nurses.

December 6 marks the third annual observance of Golden Rule Sunday. Last year the appeal sent forth to aid 50,000 war orphans under American care in the Near East. Today there are about 35,000 needing aid, the other 15,000 having either been adopted by families or graduated into industry. Of

those who remain 80 per cent are less than fourteen years of age, so such a drastic cut will not be possible next year. It will probably take at least four or five years more before the task is completed.

Orphanage centers are now located in Syria, Palestine, Greece, and Russian Armenia. One hundred and fifteen Americans direct the work assisted by native personnel. Industrial training is a part of the educational program in all orphanages for the children must be ready for self-support by the time they are fifteen or sixteen years of age.

LIFE INSURANCE WITHOUT MEDICAL EXAMINATION

The British Medical Association does not look favorably on life insurance without medical examination. The medical secretary not infrequently receives letters from members informing him that they have been asked to give information about the previous health of patients who have been accepted for life insurance without medical examination, and who have died shortly afterward. His advice to them is invariably that they should not give any information without the written consent of relatives of the deceased. The object of insurance companies in making such inquiries is the chance of getting information regarding the previous health of the deceased which may enable them to dispute the claim and thereby evade a financial liability without taking the usual steps to protect themselves against undue risk. Whether a fee is offered or not is considered beside the point. The insurance company seems to be looking to the physician to pull the chestnuts out of the fire. The association advises physicians to refuse information and to inform the relatives that they should tell the insurance company quite plainly that if the claim is not settled promptly they will suc in the courts.—Jour. A. M. A.

FIELD ACTIVITIES COMMITTEE

Dear Doctor:

We are writing to ask the county medical societies and individual physicians to give every possible encouragement and support to the Christmas seal sale which is conducted annually by local health organizations affiliated with the State Tuberculosis Association.

May I suggest that you convey the contents of this letter to every member of your county society and ask each man to offer his services as a speaker, worker or in any other desired capacity through the local Christmas seal chairman. As a society the offer of your cooperation to the county chairman will be appreciated.

If you have not learned the names of the Christmas seal chairmen through the local press or otherwise, the Iowa Tuberculosis Association, Des Moines, will be glad to inform you.

In previous communications we have spoken of the mutual value of the cooperation between the State Medical Society and the county societies on the one hand and the Iowa Tuberculosis Association and its local units on the other. Most of you heard Dr. Pearson's tribute in his legislative report at the state meeting, to the work of the executive secretary of the Iowa Tuberculosis Association in behalf of measures in the legislature in which physicians were interested. You also recall that the State Association is furnishing consultation clinics in tuberculosis and heart for the benefit of county medical societies, dating them only on invitation of the county medical societies. As you know these clinics entail no expense whatever to the physician, the local share of the cost being paid from Christmas seal funds in the hands of the local health association and the balance of the expense being carried by state headquarters. Through the state association also a good deal of publicity beneficial to the medical profession is secured from time to time and the Tuberculosis Association has as a part of its program the promotion of the idea of frequent physical examinations by the family physician.

In these and many other ways the helpfulness of the state association and its local units acting under its advice has been proven and to our mind entitles the Christmas seal sale to the most hearty active support.

Sincerely yours,

Walter L. Bierring,
Chairman.

CHRISTMAS SEALS

Twenty-five million penny Christmas seals are being distributed by the Iowa Tuberculosis Association. They will be sold throughout every county in the state by local public health organizations during the annual Christmas seal campaign which opens formally December 1st.

The quota for Iowa, if the seals were laid side by side, would extend from Omaha to Chicago or would make a belt both ways across the state.

The proceeds of the seal sale are used by the local associations in various forms of child health work, nursing, health education, fresh air camps, clinics, etc., and a portion by the State Association in the prevention of tuberculosis both in humans and animals, and in general health work.

This is the eighteenth annual Christmas seal sale. During this period in which the money thus raised has been used in preventing disease and promoting health the tuberculosis death rate has been reduced 55 per cent, infant mortality 20 per cent and the general death rate 10 per cent.

The color scheme of this year's seal is the conventional Christmas green and red and the design contains holly, mistletoe, lighted candles and the familiar double-barred cross symbolic of the world-wide anti-tuberculosis movement.

Twenty-two years ago a postal clerk in Denmark, Einor Holboell by name, seeing thousands of cancelled stamps pass through his hands at Christmas

time, had an idea. It resulted in the Christmas seal.

In 1907 Jaboc Riis wrote a magazine article about the good done by Christmas seals in Denmark. This gave Miss Emily P. Bissell, of Wilmington, Delaware, an idea.

The first American Christmas seals sold by Miss Bissell and her co-workers realized $1000 to pay on the site of the first sanatorium in Delaware.

The first seals in Iowa were sold by A. E. Kepford, at that time employed by the board of control of state institutions.

The Iowa Tuberculosis Association was organized in 1915.

The annual seal sale in Iowa has become a recognized and popular institution.

Christmas seals are now sold in every one of the forty-eight states of the Union. Last year 425,000,000 were sold.

Something to Show for it

In 1905 when the National Tuberculosis Association was organized, the death rate from tuberculosis was 202.6 per 100,000 population. Last year it was 93, a decrease of 54 per cent.

In Iowa since the Board of Control of State Institutions and the Iowa Tuberculosis Association began their campaign against this disease, the tuberculosis death rate has been reduced from 76 to 39.5. Only 6 of the states have a lower death rate than Iowa. These states are all west of the Mississippi river. Iowa's death rate is less than one-half that of the average in the country.

When the first seals were sold in this country there were only 100 sanatoria with 10,000 bed capacity. Now there are 700 with 66,000 beds. In the former year there were only 6 hospitals and clinics. Now there are over 600. Then there were no tuberculosis nurses; now there are 3500 specially trained tuberculosis nurses and over 7000 general public health nurses doing tuberculosis work. Then, there were no open air schools; now, there are 1000. In 1905 there were no state associations and only 25 local tuberculosis associations. Now, there are 48 state associations and 1500 local.

In 1905, in Iowa, there were no state sanatoria and no county public hospitals. Now, there is a state sanatorium with capacity for 400 beds and 4 county sanatoria. The bed capacity in this state, including that of the state institutions and private hospitals, rates high, nearly one for every annual death, which is the standard set by the National Association, and which is attained in very few states.

In Iowa in the past five years, 227,000 school children annually have either been taught health habits through the Modern Health Crusade system or have received health supervision from school nurses. In this group the number of physical defects have been reduced as follows: teeth defects from 60 to 36 per cent; tonsils and adenoids from 55 to 14.5 per cent; vision from 12 to 8.7 per cent; hearing from 5 to 1.5 per cent; under-weight from 60 to 20.7 per cent.

In the last ten years the general death rate has dropped 13 per cent and the infant mortality rate 26 per cent.

Two hundred forty-one thousand school children in Iowa still have physical defects which can be corrected. This figure shows the necessity of public health nursing and medical inspection in the schools and of the universal training in practical health methods to build up resistance.

Iowa now has an excellent physical education law which was pronounced by Dr. Thomas D. Wood, head of the department of health education of Columbia University, as one of the best pieces of health legislation that was ever enacted in any state.

The Modern Health Crusade and other forms of health education work promoted by the Iowa Tuberculosis Association have been so thoroughly introduced into Iowa schools that for past five years Iowa has been recognized as leading the nation in school health work, capturing the inter-state silver cup and most of the price pennants awarded by the National Tuberculosis Association.

Miles and Millions

Twenty-five million Christmas seals will be distributed throughout Iowa in December from the headquarters of the Iowa Tuberculosis Association in Des Moines and a goodly number of them will be sold by local public health organizations in every county.

This quantity of seals if placed side by side would reach from Omaha to Chicago, or would make a belt across the state in both directions.

One Mile

What can be done with a mile of seals, $633.60, in a local community?

Here is some of the work which has been done in rural Iowa counties:

Tuberculosis and heart clinics have been held with the result that people have been educated to the idea of going to the family physician for regular medical examinations. Active cases of tuberculosis have been discovered and placed in sanatoria before it was too late. Persons not having the disease in active form, but in danger of a breakdown, have been advised how to build up their health and ward off the disease. Local physicians have been interested in the early diagnosis of tuberculosis and heart disease.

The Modern Health Crusade or other forms of practical health work have been introduced into the schools.

Special campaigns such as clean-up week and special health days or weeks have been promoted.

Large quantities of health literature have been distributed.

Schools have been equipped with measuring scales. Hot lunch equipment has been furnished. Milk lunches have been established. Equipment has been purchased for playgrounds.

"Health Training in Schools", a handbook of practical health methods, has been supplied to teachers.

Health exhibits have been held at fairs.

The subject of health has been given a great deal of publicity in the papers.

Sixteen and One-Half Feet

In small rural school districts and small towns, a great deal has been done with a few rods of seals.

A rod of seals will supply a school with two copies of "Health Training in Schools", or with health songs, or health plays, or with several sets of health posters.

A rod will pay for the loan of a health moving picture.

A rod will finance the distribution of adults of a great deal of health literature.

Ten Miles

Ten miles of seals in a large community will finance a public health nurse, a permanent clinic, nutrition classes in the schools, open air schools, a preventorium, a health center, a community health survey, and a medical and dental inspection in the schools.

All of these items and many more represent the service rendered by the State Tuberculosis Association and its local units, to the welfare of the state, made possible by the annual sale of Christmas seals.

Who's Who?

Who buys Christmas seals?

About one in every twelve grown people in the state now buys them. The number is getting larger every year. The reason that eleven out of every twelve people do not buy them, is because there are not enough volunteer workers to reach the people and to show them the valuable results of a small investment in community health.

President Coolidge buys them. With characteristic brevity when a Modern Health Crusader came to see him in the White House garden he said: "Of course I want some Christmas seals."

"I am proud to be decorated with the cross of double bars", said General Pershing to the little girl who had to stand on a chair to reach his shoulder.

Irvin Cobb even became serious-minded for a few minutes and advised everybody "Do your Christmas stamping early".

Will Rogers went to the roof of a theater where the Follies were in New York and roped a high stack of seals.

"Paste seals all over my face", said Douglas Fairbanks on the steps of the New York library.

"We'll pitch the old enemy out", said Christy Mathewson, famous pitcher, after he came back from his long stay in the sanatorium.

"I buy a cent's worth of seals every day", said a newsboy last year in the Des Moines post office lobby.

SCHOLARSHIPS FOR GRADUATE STUDY

"Scholarships on the Oliver-Rea Foundation for graduate study in medicine are available at the New York Post Graduate Medical School and Hospital. Inquiries should be addressed to the dean, 301 East Twentieth street, New York City."

William D. Cutter.

NOTICE OF EXAMINATION FOR ENTRANCE INTO THE REGULAR CORPS OF THE UNITED STATES PUBLIC HEALTH SERVICE

Examinations of candidates for entrance into the Regular Corps of the U. S. Public Health Service will be held at the following-named places on the dates specified: At Washington, D. C., December 7, 1925; at Chicago, Illinois, December 7, 1925; at New Orleans, Louisiana, December 7, 1925; at San Francisco, California, December 7, 1925.

Candidates must be not less than twenty-three nor more than thirty-two years of age, and they must have been graduated in medicine at some reputable medical college, and have had one year's hospital experience or two years' professional practice. They must pass satisfactorily, oral, written and clinical tests before a board of medical officers and undergo a physical examination.

Successful candidates will be recommended for appointment by the president with the advice and consent of the senate.

Requests for information or permission to take this examination should be addressed to the surgeon general, U. S. Public Health Service, Washington, D. C.

H. S. Cumming,
Surgeon General.

SEVENTY-FIFTH BIRTHDAY OF BURLINGTON RAILROAD

September 2, 1925, is the seventy-fifth birthday of the Burlington. It is unnecessary for me to recite the changes or achievements during that period for you are familiar with them. We have reason to be proud of what has been accomplished and the growth and useful service of the company can only be maintained with the continued cooperation and good will of all employes in whatever position or wherever located. I send my congratulations and best wishes.

(Signed) Hale Holden.

RAILROADS LEAD IN SAFETY

The American railroads have earned the right to be considered authorities upon the matter of safe operation.

During the year 1924 there were only 149 fatalities among the 931,000,000 persons carried—or but one fatality for every 6,314,000 persons carried safely.

This result reflects the persistent and effective efforts of railroad officers and employes to safeguard the movement of passengers and indicates that safety is not a mere phrase in railroad parlance.

There are now over 18,000,000 passenger and commercial automobiles in use in this country—with approximately 19,000 fatalities and 450,000 injuries per year.

Beyond question there is much carelessness and reckless operation of automobiles on streets and highways.

While only a small proportion of these accidents occur on railroad crossings the American Railway Association's slogan "Cross Crossings Cautiously" should be adopted by everyone. Caution at crossings will beget caution elsewhere.

PERSONAL MENTION

Dr. Jean Jongewaard has entered upon the duties of medical adviser for women at Iowa State College, taking the position left vacant by the resignation of Dr. Mary Sheldon. Dr. Jongewaard is a graduate of Illinois Medical College, class of 1923; interned at Research Hospital in Kansas City, Missouri. She did locum tenens for a time in Kansas City for Dr. Leonard. For the past eight months she has been conducting Shepherd-Towner Clinics in South Dakota.

Dr. P. V. Ketchum of Cambridge has located in Des Moines, following a summer spent in advanced work in Iowa City and Chicago.

Dr. Wilbur S. Conkling is said to be seriously ill at his home in Des Moines. The many friends of this well known physician will be deeply grieved and hope for his speedy recovery.

Drs. Wm. H. Rendleman and John I. Marker announce the removal of their office from 401 Lane building to room 631 Union-Davenport Bank building, at Third and Brady streets, Davenport.

Dr. C. P. Soper of Floyd has sold out his practice and equipment to Dr. E. A. Nash of Peterson, who took over the work September 16, after taking some post-graduate work in Chicago.

"BIOLOGICAL PRODUCTS"

This term, as commonly understood, means simply serums, or serums and vaccines. There are many other biological products, but these two predominate in professional estimation of the class as a whole. The manufacturers of serums and vaccines are licensed by the federal government after due investigation of the equipment, material and personnel of the plant. This ensures the quality of the finished product, up to a minimum standard.

But there is competition among the different manufacturers, and the best selling point is not simply that the goods are up to standard, but that they are better than the law requires, as good in fact as the latest discoveries in applied bacteriology render possible. Equipment above and beyond the minimum is a great advantage, and long experience is another. To give his patient the best possible service, the physician should, if he thinks there is any difference between one manufacturer's product and that of another, specify his preference in ordering supplies.

Our readers should not miss Parke, Davis & Company's advertisement headed "Differences in Biological Products" which appears in this issue.

MARRIAGES

Dr. John F. Veltman of Winterset, Iowa, was married on September 4 to Miss Esther Jongewaard of Orange City. Dr. Veltman is a graduate of Northwestern University, class of 1924, and interned at Methodist Hospital in Des Moines. Mrs. Veltman completed nurses training at Presbyterian Hospital, Chicago, in 1922 and has since then been on duty there as a graduate nurse.

Dr. Harold Smith of Iowa City and Miss Aetna Hunt also of Iowa City were married August 24, 1925. Dr. Smith graduated from the College of Medicine, Iowa State University, in 1921.

Dr. E. L. Lamp of Bellevue and Miss Agnes Marie Yates of Tomah, Wisconsin, were married at the Community Church, Clinton, September 2, 1925.

Dr. G. H. West of Armstrong and Miss Martha Hansen of Des Moines were married in Chicago, September 8, 1925.

OBITUARY

Dr. David Crawford Brockman was born at Cedar Rapids, Iowa, September 15, 1853, the second son of Walter Leak and Helen Brockman. In the spring of 1855 the family moved to Shellsburg, Iowa, and in 1868 to Blairstown. At this time Dr. Brockman entered the Blairstown Academy, which he attended three terms. Following this short course at Blairstown he engaged in teaching school. In the spring of 1870 he entered the preparatory department of Cornell College, and for the next seven years he divided his time between work to pay his way and school at Cornell College. At the beginning of the school year of 1876 he entered the medical department of the Iowa State University and was graduated March 8, 1878.

Dr. Brockman practiced first at Marengo, Iowa, and February 1, 1872 moved to Ottumwa, where he practiced to the end of his useful life

Dr. Brockman was active in his efforts to elevate the standards of medical practice and to this end cooperated in every way to bring about helpful organizations, as may be shown by the list of important medical societies to which he belonged: President Wapello County Medical Society, 1893-4; president Tri-State Medical Society, 1896-7; president Iowa State Medical Association, 1905-6; president Iowa Railway Surgeons' Association, 1906-7; Fellow of American College of Surgeons; member of Western Surgical Association.

In addition to the above he was U. S. pension examining surgeon, 1884-1892; local surgeon C. R. I. & P. Ry., 1879-1892; adjunct to chair obstetrics and gynecology, medical department, Iowa State University, 1888-1892; surgeon Illinois Central and Ft. Dodge, Des Moines and Southern Ry., three and five years respectively.

Practiced general medicine and surgery until about 1905 when he gave up general practice and limited work to surgery and consultation.

Dr. Brockman united with the Presbyterian church at Blairstown in 1869. Was elected ruling elder at Marengo in 1884, which office he has held continuously except for a few years after coming to Ottumwa.

DR. DAVID CRAWFORD BROCKMAN

He was married November 5, 1879 at Marshalltown, Iowa, to Sarah Augusta Mallory. To this union five children were born.

His wife Augusta died July 19, 1908, after an illness lasting many years. February 2, 1910, he married Lucy Nottingham Warden, at Ottumwa, Iowa.

He died August 21, 1925, of angina pectoris.

Dr. C. T. Brown of Cedar Rapids died suddenly from a paralytic stroke while making his rounds at St. Lukes Hospital. Dr. Brown was born on a farm near Springville, Linn county, August 1, 1866. Graduated from Cornell College in the department of civil engineering in 1892. Later Dr. Brown entered the Iowa State University as a medical student, but after two years entered the Chicago Homeopath Medical College. He began practice in Tipton, later moved to Waverly and finally located in Cedar Rapids in 1909. Dr. Brown was a member of Linn county, Iowa State Medical Society and of the American Medical Association. In 1903 he married Miss Irene Chaffee of Elwood, who survives him.

Dr. T. W. Shearer, formerly of Des Moines, died recently at his home in Houston, Texas.

Dr. Shearer's parents emigrated from Scotland to the United States in 1848 and located in Janesville, Wisconsin, where Dr. Shearer was born in 1856. Later the Shearer family moved to Story county, Iowa. Dr. Shearer graduated from the Iowa State College at Ames in 1881 with the degree B.S. He studied medicine with the writer and graduated from the College of Physicians and Surgeons, Chicago (University of Illinois). He was elected professor of chemistry, Iowa College of Physicians and Surgeons (Drake University, Des Moines) and located in practice in Des Moines. This was before the days of full time medical professors. After three years his health failed and he moved to Chambers county, Texas, and engaged in the cultivation of rice and in general business affairs.

"Dr. Tom" married Miss Hattie Hutton, who was a classmate at the Iowa State College, and to them was born five sons and two daughters, who, with Mrs. Shearer, survive him.

Dr. Shearer was a lineal descendent of Robert Bruce, notwithstanding his business relations, he practiced medicine forty years. Due to his Scotch ancestry, he was a resolute and determined man and was successful in all his undertakings and with a well trained mind he was fitted to be a leader in his community.

Dr. W. H. Shelton, formerly of Pulaski, Iowa, died at Los Angeles, California, August 24, 1925, at the age of ninety-three years.

Dr. Shelton came to Davis county from Indiana with his parents in 1845. He was admitted to the practice of medicine in 1860, following his graduation at Pulaski, where he continued practice for more than a half a century and until old age forced him to retire a few years ago.

BOOK REVIEWS

NEW AND NON-OFFICIAL REMEDIES, 1925

Containing Descriptions of the Articles Which Stand Accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1925. Cloth. Price, Post-paid, $1.50. Pp. 461+XL. Chicago: American Medical Association, 1925.

New and Non-official Remedies is the publication of the Council on Pharmacy and Chemistry through which this body annually provides the American medical profession with disinterested critical information about the proprietary medicines which are offered to the profession and which the Council deems worthy of recognition. The book also contains descriptions of non-proprietary medicines which the Council considers worthy of consideration.

In addition to a statement of the actions, uses and dosage of each product, many of these are arranged in classes and these classes are introduced by a general discussion of the group; thus the silver preparations, the iodine preparations, the arsenic preparations and the biologic products are preceded by a thoroughly up-to-date discussion of the group.

A glance at the preface shows that, in addition to the description of the new drugs which were accepted during the past year, the book has been extensively revised; many of the preparations listed in the previous edition have been omitted and the

statements of the properties of others have been revised to bring the descriptions in accord with present day knowledge. Of particular interest is the revision of the general articles; thus the article on endocrine products has been entirely rewritten to bring this chapter in accord with the series of articles on glandular therapy which were published in 1924 under the auspices of the Council. A general article on medicinal dyes has been added.

A section of the book (brought up-to-date each year) gives references to proprietary articles not accepted for New and Non-official Remedies. This list, in conjunction with the book proper, constitutes a cumulative index of proprietary medicines which physicians may consult when some proprietary prod-

Physicians cannot dispense with the newer remedies that are being brought out, yet they can neither judge them on the basis of the manufacturers' claims nor have they the opportunity or time to determine their merits. For this reason every physician should possess a copy of the annual volume of New and Non-official Remedies which the Council on Pharmacy and Chemistry puts at his disposal.

SURGICAL CLINICS OF NORTH AMERICA

Volume V, Number 1; 294 Pages with 142 Illustrations. W. B. Saunders Company. Price Per Clinical Year, Paper $12.00, Cloth $16.00 Net.

The February, 1925, number of this series is a New York number made up of clinics of important hospitals by experienced clinical teachers. Goiter surgery received a fair degree of attention at the hands of Dr. Eugene H. Pool, followed by a rather full consideration of gastric and duodenal surgery by Dr. A. A. Bery at Mt. Sinai Hospital.

Dr. Wm. B. Coley presents an interesting discussion on "Sarcoma of Long Bones", Dr. Charles Elsberg on "Tumors of the Spinal Cord", and Dr. John J. Moorhead on "Traumatic Surgery". Dr. Nathan W. Green presents an especially interesting study on "Lung Suppuration".

We note the tendency lately of presenting a smaller number of clinic subjects but a fuller and more complete study of subjects selected. We think there is an advantage in this method.

SAFEGUARDING CHILDREN'S NERVES

By James J. Walsh, M.D. and John A. Foote, M.D. J. B. Lippincott Co.

The practical little book entitled "Safeguarding Children's Nerves", by James J. Walsh, M.D. and John A. Foote, M.D., which has recently been published by J. B. Lippincott Company, is one which every father and mother should read. The entire subject matter is well arranged, comprehensively elaborated and reduced to plain readable language. The advice suggestively imparted in this little volume is invaluable.

F. A. Ely.

LECTURES ON PATHOLOGY DELIVERED IN THE UNITED STATES, 1924

By Ludwig Aschoff, M.D., Professor of Pathologic Anatomy, University of Freiburg, Germany. With 35 Illustrations. Paul B. Hoeber, Inc., New York, 1924. Price, $5.00.

The lectures presented in this volume are the special lectures delivered by Professor Aschoff while in this country in 1924, before important medical societies, as the Edward G. Janeway Lectures of the Mount Sinai Hospital in New York, the Lane Lectures of the Leland Stanford Medical School in San Francisco, the Osler Memorial Lecture, Los Angeles, and the Harvey Lecture in New York. Also several lectures delivered in various important cities of the United States.

The three Janeway Leectures presented at Mount Sinai Hospital were under the following titles: Reticulo-Endothelial System; The Pathogenesis of Human Pulmonary Consumption; Concep of Inflammation. The Lane Lectures consisted of a presentation of Pathological Fatty Changes, The Normal and Pathological Morphology of the Suprarenals; Artherosclerosis; Ovulation and Menstruation. Other lectures were on Orthology and Pathology of the Extrahepatic Bile Passages, The Origin of Gall Stones, The Site of Formation of Bile Pigment, (Lane Lecture) Thrombosis, The Relation of Mucosal Erosions to the Development of Ulcer of Stomach (Osler Memorial Lecture), The Goiter Problem, Especially the Goiter of Puberty; A Morphological Study, and Renal Secretions and Renal Diseases (Harvey Lecture).

These lectures are philosophical in their nature and carry the reader far beyond the usual method of presentation.

ANNUAL REPORT OF THE SURGEON GENERAL OF THE PUBLIC HEALTH SERVICE OF THE UNITED STATES

For the Fiscal Year 1924. Government Press, Washington, D. C.

We have here the report of the several divisions of public health service of the different sections of the country as to the prevalence of infectious diseases. By an examination of this report we are informed as to the existence of infectious diseases and as to the measures adopted to prevent them. We also gain an idea of the activities of the public health service in protecting the country, the people of the United States, against dangerous forms of disease.

ANNUAL REPRINT OF THE REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR 1924

Cloth. Price, postpaid, $1.00. Pp. 82. Chicago: American Medical Association, 1925.

This volume contains the reports of the Council on Pharmacy and Chemistry that have been adopted

and authorized for publication during 1924. Some of these reports have appeared in The Journal of the American Medical Association. Others are now published for the first time.

The annual volumes of the "Council Reports" may be looked on as the companion volumes to New and Nonofficial Remedies. While the latter contains the medicinal preparations that are found acceptable, the reports contain the reasons why certain products were not accepted. Thus the present volume contains reports on the following products which the Council denied admission to New and Nonofficial Remedies: Aolan; Aspatol; Atussin, Peptoproteasi, Paraganglina Vassale, Fosfoplasmina, Asmoganglina and Endo-Ovarina Tablets; Borosodine; Carsinol; Colodine and Colobromidine; Ferrasin; Glyeuthymenol; Hoyt's Gluten Flakes; Iodeol; Loeflund's Food Maltose; Mistura Creosote Comp. (Killgore's) and Tablets Cascara Comp. (Killgore's); Neo-Riodine; Nicomors; Peptone Solution for Hypodermatic Use (Armour); Pixalbol; "P-O-4"; Pollantin; Promonta; Pruritus Vaccine Treatment-Lederle (Montague Method); Restor-Vin; Some "Mixed" Vaccines of G. H. Sherman and Tersul Hiller.

The volume also contains reports on products which were included in former editions of New and Nonofficial Remedies but which will not appear in the 1925 edition because they were found ineligible for further recognition. Among these are polyvalent antipneumococcic serum, colon bacillus vaccine, gonococcus serum and gonococcus vaccine.

The volume contains a number of reports of a general nature: for instance a report on the therapeutic value of benzyl benzoate; a report on anaphylaxis produced by thromboplastic substances and a report on the theraupeutic use of digitalis.

Physicians who keep fully informed in regard to the value of proprietary remedies will wish to own this book.

FRACTURES AND DISLOCATIONS

Immediate Management, After Care and Convalescent Treatment with Special Reference to the Conservation and Restoration of Function. By Philip D. Wilson, A.B., M.D., F.A.C.S., Instructor in Orthopedic Surgery, Harvard Medical School and William A. Cochrane, M.D., Ch.B., F.R.C.S., Edinburgh, University Tutor in Clinical Surgery, University of Edinburgh; 978 Illustrations. J. B. Lippincott Company.

The effect of compensation laws has increased the interest of the medical profession in injuries to the Skelerar System, particularly to surgeons engaged in industrial practice. The opportunities afforded by the World War in trying out and testing heretofore approved methods and of new ones suggested by conditions of war and industry has led to intensive study of fractures and dislocations, and the production of books treating of these subjects.

Of course the principles have not changed the principle of reducing fractures and dislocations promptly, and of restoring as far as possible the parts to their normal position and function. The method of diagnosis and treatment have undergone some modification. The use of the x-ray in diagnosis is no longer a question. The chief thing that now interests us is the treatment, or we may say, the means of retaining the reduced fracture in place. If every surgeon was a good mechanic he could devise methods from simple means, but as many are not good mechanics rather specific directions are necessary. If every hospital could have a fracture service presided over by especially fitted men the best results could of course be obtained. But such conditions could be secured only in great hospitals. Most of the fracture cases will be treated in the smaller hospitals, and not a few in their homes, by general surgeons of limited experience.

The book before us is one which should be of great service to the surgeons who will treat a large proportion of the fracture cases. The authors present the use of plaster Paris in an interesting way: it is shown that plaster Paris in some ingenious form may be used to great advantage in nearly every form of fracture. Very careful directions are presented as to application, the dangers to be avoided, the length of time to be continued, etc.

After reading this book we are convinced that a surgeon may adapt a plaster splint to almost any form of fracture with a feeling of security.

This book should be the constant companion of the fracture surgeon.

OPERATIVE SURGERY

Covering the Operative Technic Involved in the Operations of General and Special Surgery. By Warren Stone Bickham, M.D., F.A.C.S., Former Surgeon in Charge of General Surgery, Manhattan State Hospital, New York; Former Visiting Surgeon to Charity and to Touro Hospitals, New Orleans. In Six Octavo Volumes Totaling Approximately 5400 Pages with 6378 Illustrations, Mostly Original and Separate Desk Index Volume. Volume Six Contains 989 Pages with 1224 Illustrations. W. B. Saunders Company, 1924. Cloth, $10.00 Per Volume. Sold by Subscription Only. Index Volume Free.

This, the sixth volume, completes the set, constituting a library on operative surgery. The last volume of this great work includes operations on the male and female organs of generation.

After considering operations upon the seminal vesicles and ejaculatory ducts and upon the prostate gland, the author takes up operative work upon the female organs of generation in the same thorough manner that has characterized the former volumes thus constituting a work of 577 pages on gynecologic operative surgery. The remainder of this volume, including 245 pages, is devoted to obstetric surgery, including the operations employed in midwifery practice.

Passing in review the six volumes on operative surgery, there seems to be nothing omitted from the minor operations of interest to the general surgeon, to the most difficult work of the special surgeon. The field covered is immense in its scope, and quite beyond the limits of a detailed review. The volumes may be considered as a whole or in part as each volume is complete in itself.

The set thus presented to the profession is very attractive in binding, illustrations and the paper. The publishers, as well as the author, are to be congratulated in the excellence of the work in every particular.

ABT'S PEDIATRICS

By 150 Specialists, Edited by Isaac A. Abt, M.D., Professor of Diseases of Children, Northwestern University Medical School, Chicago. Set Complete in Eight Octavo Volumes Totaling 8000 Pages, with 1500 Illustrations, and Separate Index Free. Volume 6, Containing 736 Pages with 127 Illustrations. W. B. Saunders Company, 1925. Cloth, $10.00 Per Volume. Sold by Subscription.

Again we call attention to this important work on the diseases of children. The sixth volume is devoted to infectious diseases. The introductory chapter is by Fritz B. Talbot, M.D., clinical professor of pediatrics, Harvard Medical School; chief children's medical department, Massachusetts General Hospital, on Body Temperature and its Regulation.

This chapter is essentially an interpretation of the significance of temperature of the body in the study of diseases which are infectious in character. Variations in temperature are so constantly observed, and are of such important significance in diagnosis and prognosis, that the fever thermometer is in constant service. But it is equally important that its value be pointed out in a carefully considered paper on the various conditions of the patient.

"Typhoid and Paratyphoid Fevers", are presented by Dr. J. H. Mason Knox of Johns Hopkins.

A most important subject is "Acute Rheumatic Fever in Children", by Dr. Maynard Ladd of Harvard University. The injury to the heart which so often follows even in apparently mild cases of rheumatism, creates a feeling of anxiety and the danger is such that the practitioner should avail himself of every means of averting a heart lesion. The author warns against waiting until a heart lesion declares itself before employing appropriate treatment. There is perhaps no disease in children that should invite closer care than rheumatism.

"Diphtheria", by Drs. William H. Park and Archibald J. Dickson of New York, is another disease which invites our serious consideration. The immediate danger is such as to place us at once on our guard, and the means at our command are such as to make the remote danger less than in rheumatism.

"Scarlet Fever", one of the dreaded diseases of childhood, is treated by Dr. George H. Weaver of Chicago. This contribution is particularly interesting, partly on account of its historical and statistical discussion. We are presented with an encouraging statement to the effect that while there is no considerable decrease in its prevalence, the death rate has shown a steady decline during the past fifty years. The section on treatment is full and extremely valuable.

We have space for one more form of disease which is extremely prevalent, and in mild types and uncomplicated, is without danger; there are, however, cases of measles with complications which are dangerous and need close care and treatment. The contribution on "Measles" is by Dr. Charles Herrman of New York.

The contribution by Dr. Dean Lewis on "The Peculiarities of Surgery in Childhood" should be noted, but space forbids a further consideration of the very important subjects treated in this volume.

SURGICAL PATHOLOGY

By William Boyd, M.D., M.R.C.P., Ed., Pathologist to the Winnipeg General Hospital, Winnipeg, Canada. Octavo of 837 Pages, with 349 Illustrations and 13 Colored Plates. W. B. Saunders Company, 1925. Price, $10.00.

The book before us is one of rare interest in that it deals with the science of surgery. It would seem that many engaged in the practice of surgery, have in mind the thought that the essential thing is to determine the nature of the condition and plan an operation or some form of treatment to relieve the patient. This is, of course, the fundamental fact to be considered. But much more than this is necessary for the surgeon of today—we do not need to say the accomplished surgeon—for the surgeon who is not to a certain degree familiar with the nature of the processes going on in a diseased organ or tissue, is not in a position to estimate the value of a course of procedure. The value of pathology in its relation to surgery is not new as measured by time in surgery. We have before us three volumes on this subject: "Surgical Anatomy", by Dr. Samuel D. Gross, published in 1845. "Surgical Pathology", by Sir James Paget, published in 1870, and "Surgical Pathology", by Dr. William Boyd, published in 1925. These three works published at rather long intervals, have the same purpose in view: the presentation of scientific facts in relation to surgery as they were known at the particular time. Dr. Boyd, in the second chapter, considers "Surgical Bacteriology", of which his predecessors knew nothing at all. This lies at the foundation of the third chapter, "Inflammation—Healing", and as we pass from one surgical subject to another, from one organ or tissue to another, we meet the underlying scientific factor, the special bacterium, the type of infection, the change wrought in the tissue, the effect and consequences upon the structure and functions of the organ.

If we consider the appendix, for example, Dr. Boyd presents its anatomical structure; the type of

inflammation; the etiology; the effect of types of inflammation and associated conditions. Fundamentally appendicitis is due to an infection. This will apply to all forms of surgical diseases, the exact character known or unknown.

Again, the breast, we have presented the structure and function. Dr. Boyd states that "the common affections of the breast are acute inflammation, chronic mastitis and tumors. Syphilis is of rare occurrence, and still more rare is tuberculosis"—all infections, the cause is therefore well known. Eighty years ago Dr. Gross says, "Of the essence of disease, very little is known; indeed, nothing at all; nor can the utmost ingenuity hope to remove the veil which still envelops the subject, until the physiology and pathology of the muscular and nervous systems shall be better understood".

Books of this character are of uncommon interest, in that they reveal the advancement and changes which have taken place in the science of surgery.

THE TECHNIC OF LOCAL ANESTHESIA

By Arthur E. Hertzler, A.M., M.D., F.A. C.S., Professor of Surgery in University of Kansas; Surgeon to the Halstead Hospital, Halstead, Kansas; to St. Luke's Hospital, Kansas City, Etc. Third Edition, with 140 Illustrations. C. V. Mosby Company, St. Louis, 1925.

The discovery of agents capable of producing an anesthetic effect on tissues without danger to them or to the patient from absorption, has lead surgeons to develop a technic that will enable him to perform many operations without the inconvenience or danger of a general anesthesia. In view of the great fact that local anesthesia has not been standardized, different surgeons very naturally employ certain generally accepted anesthetic agents according to individual preferences, and while the technic is much the same, there are individual differences.

Dr. Hertzler was early in the field and with his large experience and exceptional surgical judgment has developed a technic that appeals to the surgeon who employs local anesthesia. This method of rendering a large proportion of surgical operations practically painless, has led surgeons to employ local anesthesia more and more and in seeking a guide for a successful issue Dr. Hertzler's book will be found most satisfactory.

INTERNATIONAL CLINICS

A Quarterly Illustrated Clinical Lectures and Especially Prepared Original Articles on the Various Branches of Medicine and Surgery. Edited by Henry W. Cattell, A.M., M.D., Philadelphia, and C. H. Mayo, M.D., Rochester, Minnesota. Volume IV, No. 34, Series 1924. J. B. Lippincott Company.

This volume before us is one of unusual interest and entitled to special notice. The first paper is by James F. Coupal, M.D., Major M.C., U. S. A., Washington, D. C. Report of six cases of Blastomycosis.

The Food Factor in Pellagra, by Searle Harris, M.D., Birmingham; a Clinical and Bacteriological Analysis of the Bacillary Dysentery Cases in Ancon Hospital, 1919-1923, by Roland C. Conner, M.D. and Lewis B. Bates, M.D., Ancon Hospital, Canal Zone. Administration of Quinine in Acute Malaria with Special Reference to the Value of Intramuscular Injections, by N. P. McPhail, M.D., United Fruit Company.

The Results of Noguchi Treatment and the Prophylactic Measures employed in the 1921 Yellow Fever Epidemic in Belize, by Lieut.-Col. James Cran, M.D., Belize, British Honduras.

There are some sixteen other papers of particular interest and merit, one in particular we may note. The Clinical Classification of Congenital Cardiac Disease, by Maude E. Abbott, M.D. and Wilfrid T. Dawson, B.A., of Woman's Medical College of Pennsylvania.

Another contribution is by James Burnet, M.A., M.D., of the School of Medicine of the Royal College, Edinburg, Scotland, Mental Diseases in Infancy and Childhood.

The remaining papers are of much interest, but space forbids special mention.

THE DIAGNOSIS OF CHILDREN'S DISEASES

With Special Attention to the Diseases of Infancy. By Professor Dr. E. Feer, Director of the University Children's Clinic, Zurich, Switzerland. Translated by Carl Ahrendt Scherer, M.D., F.A.C.P. J. B. Lippincott Company.

The book before us is one of unusual interest and importance in that it is devoted to the diagnosis of children's diseases. In the introduction many important facts are pointed out in relation to the purposes of this volume.

Without quoting from the introduction we may say that the reader should take up this before entering upon the study of the text, as a helpful aid in following what the author has in mind. Inasmuch as diagnosis of children's diseases is dependent upon a careful history taking we have this feature pointed out in due, exact and scientific manner before conditions of disease are taken up. The things to be considered under this head are illustrated by numerous cuts.

In considering questions of diagnosis we have first, Nutrition and Development, which are fundamental in character. Following is the appearance of the head, the skin, general edema, anasarca, hair, nails, etc. Diseases of the Bones and Joint, Special Sense Organs Deglutition, Air Passages, Heart, Abdomen, Liver, Blood, Anemia and Blood Diseases and the Nervous System.

We have mentioned a number of important structures and organs which are to be considered with their relations to each other in arriving at a diagnosis. In a diagnosis of children's diseases, for obvious reasons, observation is of first importance and this the author has kept fully in mind as shown

by many illustrations which show the appearance of the child under observation.

No attempt has been made to point out appropriate treatment, the purpose being to show how a diagnosis may be made as being of first importance.

We cannot speak too highly of the value of this book, not only to the general practitioner, but also to the pediatrician.

HYGIENIC LABORATORY BULLETIN NO. 138

Studies on the Bio-Assay of Pituitary Extracts Concerning the Use of a Desiccated Infundibular Powder as a Standard in the Physiological Extracts, Etc., Published by the Treasury Department, United States Public Health Service. Government Printing Office, Washington, D. C.

TRUTH ABOUT MEDICINES

New and Non-Official Remedies

Pituitary Extract Obstetrical—Merrell—A slightly acid aqueous solution containing the water soluble principle or principles of the fresh posterior lobe of the pituitary body of cattle, preserved with 0.5 per cent of chlorbutanol. It is standardized so that 1 c.c. has an activity on the isolated uterus of the virgin guinea pig corresponding to not less than 80 per cent nor more than 120 per cent of that produced by 9.005 gm. of standard, defatted, dried powdered posterior lobe of the pituitary gland of cattle. For a discussion of the actions and use of pituitary solution, see Pituitary Gland (New and Non-official Remedies, 1925, p. 260). Pituitary extract obstetrical—Merrell is marketed in ampules containing 0.5 c.c. and 1 c.c. The Wm. S. Merrell Co., Cincinnati.

Pituitary Extract Surgical—Merrell—A slightly acid, aqueous solution containing the water soluble principle or principles of the fresh posterior lobe of the pituitary body of cattle, preserved with 0.5 per cent of chlorbutanol. It is standardized so that 1 c.c. has an activity on the isolated uterus of the virgin guinea pig corresponding to not less than 80 per cent nor more than 120 per cent of that produced by 0.01 gm. of standard, defatted, dried, powdered posterior lobe of the pituitary gland of cattle. For a discussion of the actions and uses of pituitary solution, see Pituitary Gland (New and Non-official Remedies, 1925, p. 260). Pituitary solution surgical—Merrell is marketed in ampules containing 1 c.c. The Wm. S. Merrell Co., Cincinnati.

Solarson.—A 1 per cent solution of ammonium heptenchlorarsonate rendered isotonic by the addition of sodium chloride. Solarson contains from 0.255 to 0.275 gm. of arsenic (As) in 100 c.c. Experimental evidence indicates that the arsenic of solarson is readily liberated in the system and is well utilized. It is claimed that solarson has an advantage over the cacodylates because its arsenic is better utilized, and over the arsenilates in that subcutaneous and intramuscular injection produce less pain and are less liable to produce toxic effects. Solarson is used as a means of obtaining arsenic effects in the treatment of anemia, chlorosis, malaria, neuroses and dermatoses. Solarson is supplied in ampules containing 1.2 c.c. Winthrop Chemical Co., Inc., New York.

Bismosol—A solution of potassium sodium bismuthotartrate (containing 35 per cent bismuth), 10 gm.; piperazine, 0.3 gm., in an aqueous solution of glucose sufficient to make 100 c.c. Bismosol is proposed as a means of obtaining the systemic effects of bismuth in the treatment of syphilis (Bismuth Compounds, New and Non-official Remedies, 1925, p. 73). Bismosol is administered intramuscularly. It is supplied in ampules containing 1 c.c. Powers-Weightman-Rosengarten Co., Philadelphia.

NEW AND NON-OFFICIAL REMEDIES

In addition to the articles enumerated in our letter of June 30, 1925, the following have been accepted:

Eli Lilly & Co.:
- Diphtheria Toxin-Antitoxin Mixture 0.1L plus.
- Typhoid Mixed Vaccine, Prophylactic and Therapeutic.
- Schick Test, 50 test package.

H. A. Metz Laboratories:
- Neosalvarsan Dose XII.

Parke, Davis & Co.:
- Germicidal Discs of Potassio-Mercuric Iodide—P. D. & Co.

Powers-Weightman-Rosengarten Co.
- Bismosol.
- Bismosol Ampules 1 c.c.

In addition to the articles enumerated in our letter of July 31, 1925, the following have been accepted:

E. Bilhuber, Inc.:
- Theocalcin.
- Theocalcin 7½ Gr. Tablets.

Lederle Antitoxin Laboratories:
- Anti-Anthrax Serum 20 c.c. Vial.
- Tuberculin Pirquet Test ("T.O.") 10 Capillary Tubes.
- Tuberculin Pirquet Test ("T.O.") 25 Capillary Tubes.

Merck & Co.:
- Iodin 40 Per Cent.
  - Ampules Iodipin 40 Per Cent. 1 c.c.
  - Ampules Iodipin 40 Per Cent. 2 c.c.

H. A. Metz Laboratories:
- Novarsenobenzol—Billon 0.15 Gm. Ampules.
- Novarsenobenzol—Billon 0.3 Gm. Ampules.
- Novarsenobenzol—Billon 0.45 Gm. Ampules.
- Novarsenobenzol—Billon 0.75 Gm. Ampules.

H. K. Mulford Co.:
- Proteins Dried—Mulford.
  - Almond Protein Dried—Mulford, Apple Protein Dried—Mulford, Asparagus Protein Dried Mulford, Banana Protein Dried—Mulford, Barley Protein Dried—Mulford, Bean (Lima) Protein Dried—Mulford, Bean (Navy) Protein Dried—Mulford, Bean (String) Protein Dried

—Mulford, Beef Protein Dried—Mulford, Beet Protein Dried—Mulford, Buckwheat Protein Dried—Mulford, Cabbage Protein Dried—Mulford, Cantaloupe Protein Dried—Mulford, Carrot Protein Dried—Mulford, Cat Hair Protein Dried—Mulford, Cattle Dander Protein Dried—Mulford, Cauliflower Protein Dried—Mulford, Celery Protein Dried—Mulford, Chicken Protein Dried—Mulford, Chicken Feather Protein Dried—Mulford, Clam Protein Dried—Mulford, Clam Protein Dried—Mulford, Cocoa Protein Dried—Mulford, Codfish Protein Dried—Mulford, Coffee Protein Dried—Mulford, Coli (Communis) Bacillus Protein Dried—Mulford, Corn Protein Dried—Mulford, Cucumber Protein Dried—Mulford, Diphtheroid (Polyvalent) Bacillus Protein Dried—Mulford, Dog Hair Protein Dried—Mulford, Dysentery Bacillus (Polyvalent) Protein Dried—Mulford, Eggplant Protein Dried—Mulford, Egg White Protein Dried—Mulford, Egg Yolk Protein Dried—Mulford, Flaxseed Protein Dried—Mulford, Friedlander Bacillus Protein Dried—Mulford, Goose Feather Protein Dried—Mulford, Gonococcus Bacillus (Polyvalent) Protein Dried—Mulford, Guinea-Pig Hair Protein Dried—Mulford, Horse Dander Protein Dried—Mulford, Horse Serum Protein Dried—Mulford, Influenza Bacillus Protein Dried—Mulford, Kapok Protein Dried—Mulford. Lamb Protein Dried—Mulford, Lettuce Protein Dried—Mulford, Lobster Protein Dried—Mulford, Mackerel Protein Dried—Mulford, Meningococcus Bacillus (Polyvalent) Protein Dried—Mulford, Micrococcus Catarrhalis Bacillus Protein Dried—Mulford, *Oat Protein Dried—Mulford, Onion Protein Dried—Mulford, Orange Protein Dried—Mulford, Orris Root Protein Dried—Mulford, Oyster Protein Dried—Mulford, Paratyphosus Bacillus "A" Protein Dried—Mulford, Paratyphosus Bacillus "B" Protein Dried—Mulford, Pertussis Bacillus (Polyvalent) Protein Dried—Mulford, Pea Protein Dried—Mulford, Peanut Protein Dried—Mulford, Pepper (Black) Protein Dried—Mulford, Pneumococcus Bacillus (Polyvalent) Protein Dried—Mulford, Pork Protein Dried—Mulford, Potato Protein Dried—Mulford, Rabbit Hair Protein Dried—Mulford, Rice Protein Dried—Mulford, Rice Powder (Polish) Protein Dried—Mulford, Rye Protein Dried—Mulford, Salmon Protein Dried—Mulford, Spinach Protein Dried—Mulford, Squash Protein Dried—Mulford, Strawberry Protein Dried—Mulford, Sheep's Wool Protein Dried—Mulford, Staphylococcus Bacillus (Albus and Aureus) Protein Dried—Mulford, Streptococcus Bacillus (Polyvalent) Protein Dried—Mulford, Sweet Potato Protein Dried—Mulford, Tea Protein Dried—Mulford, Tomato Protein Dried—Mulford, Tobacco Protein Dried—Mulford, Tubercle Bacillus (Human) Protein Dried—Mulford, Tubercle Bacillus (Bovine) Protein Dried—Mulford, Typhosus Bacillus Protein Dried—Mulford, Veal Protein Dried—Mulford, Walnut Protein Dried—Mulford, Wheat Protein Dried—Mulford.

Protein Extracts—Mulford:

Almond Protein Extract—Mulford, Apple Protein Extract—Mulford, Asparagus Protein Extract—Mulford, Banana Protein Extract—Mulford, Bean (Lima) Protein Extract—Mulford, Bean (Navy) Protein Extract—Mulford, Bean (String) Protein Extract—Mulford, Beef Protein Extract—Mulford, Beet Protein Extract—Mulford, Buckwheat Protein Extract—Mulford, Cabbage Protein Extract—Mulford, Cantaloupe Protein Extract—Mulford, Cat Hair Protein Extract—Mulford, Cauliflower Protein Extract—Mulford, Celery Protein Extract—Mulford, Chicken Protein Extract—Mulford, Chicken Feather Protein Extract—Mulford, Cattle Dander Protein Extract—Mulford, Clam Protein Extract—Mulford, Cocoa Protein Extract—Mulford, Codfish Protein Extract—Mulford, Coffee Protein Extract—Mulford, Coli Bacillus (Communis) Protein Extract—Mulford, Corn Protein Extract—Mulford, Cucumber Protein Extract—Mulford, Diphtheroid (Polyvalent) Bacillus Protein Extract—Mulford, Dog Hair Protein Extract—Mulford, Dysentery Bacillus (Polyvalent) Protein Extract—Mulford, Eggplant Protein Extract—Mulford, Egg White Protein Extract—Mulford, Egg Yolk Protein Extract—Mulford, Flaxseed Protein Extract—Mulford, Friedlander Bacillus Protein Extract—Mulford, Goose Feather Protein Extract—Mulford, Gonococcus Bacillus (Polyvalent) Protein Extract—Mulford, Guinea-Pig Hair Protein Extract—Mulford, Horse Dander Protein Extract—Mulford, Horse Serum Protein Extract—Mulford, Influenza Bacillus Protein Extract—Mulford, Kapok Protein Extract—Mulford, Lamb Protein Extract—Mulford, Lettuce Protein Extract—Mulford, Lobster Protein Extract—Mulford, Mackerel Protein Extract—Mulford, Meningococcus Bacillus (Polyvalent) Protein Extract—Mulford, Micrococcus Catarrhalis Bacillus Protein Extract—Mulford, Milk Protein Extract—Mulford, Mushroom Protein Extract—Mulford, §Orange Protein Extract—Mulford, Orris Root Protein Extract—Mulford, Oyster Protein Extract—Mulford, Paratyphosus Bacillus "A" Protein Extract—Mulford, Paratyphosus Bacillus "B" Protein Extract—Mulford, Pertussis Bacillus (Polyvalent Protein Extract—Mulford, Pea Protein Extract—Mulford, Peanut Protein Extract—Mulford, Pepper (Black) Protein Extract—Mulford, Pneumococcus Bacillus (Polyvalent) Protein Extract—Mulford, Pork Protein Extract—Mulford, Potato Protein Extract—Mulford, Rabbit Hair Protein Extract—Mulford, Rice

(Continued on Advertising Page xxix)

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SOME COMMENTS CONCERNING THE RELATIONSHIP OF TUBERCULOSIS TO CERTAIN FUNDUS CHANGES, WITH ESPECIAL REFERENCE TO PERIPHLEBITIC RETINITIS*

T. B. Holloway, M.D., Philadelphia

The diagnosis of intraocular tuberculosis, as this applies to the fundus of the eye in the absence of characteristic iritic manifestations, is not always a simple matter, but on the contrary is frequently attended with many difficulties and that despite the most exhaustive examinations.

Of the choroidal types, the miliary form is probably the easiest of recognition, the conglomerate type and the disseminated and exudative forms are in no sense as suggestive as far as etiology is concerned. A few cases are on record where a solitary tuberculous tumor occurred at the nervehead and I have seen one case, not on record, where such a possibility seemed likely, but a tuberculin test was negative.

In 1908 George Coates placed on record his excellent study of six cases of retinal disease with massive exudation and reviewed the literature of analogous cases. He referred to forms with and without gross vascular changes and among the cases reviewed there were a few that were associated with tuberculosis elsewhere in the body, several with an adenopathy and in a few instances a positive tuberculin reaction. When this exudative mass is peripheral, which it is occasionally, he points out that perhaps the usual clinical diagnosis is tubercle of the choroid, either active or obsolescent. The retinal exudate in this type of disease is deep, the course insidious, the individuals are usually young males who appear to be in excellent health and their personal and family histories are frequently negative. In one of Coats' reports (Morton's case) there were recorded aneurysmal-like dilatations of the retinal vessels associated with the massive exudates.

In 1912 Leber reported concerning two personal observations of aneurysms of the retinal vessels, and reviewed eleven other cases that he found on record. In one of the two groups discussed he referred to the development of circinate-like patches. In one of his cases an apical lesion was present and a positive general and focal tuberculin test was obtained.

In 1910 deSchweinitz and myself placed on record the histories of two cases belonging to this group which were not included in Leber's series. In both cases there were evidences of incipient pulmonary tuberculosis and no other positive findings aside from a slight intestinal toxemia. Since exhaustive examinations has failed to elicit any definite etiologic factor that could be shown to be the cause of this type of retinal disease, the possibility of tuberculosis has been intimated by various observers, among them deSchweinitz and myself.

Since then a few additional observations have been made, such as the case reports by Pringle, Hata and Miyashita, and Nisyake (B. J. O., 1921, V, p. 448). The last named observers, as the result of their pathologic examinations, believe that the disease may be traced to a hereditary weakness of the blood-vessels and that it is of the nature of an angio-fibromatosis followed by retinal degeneration and that it comes into close relationship with the type case first recorded by Fuchs and later dwelt upon by v. Hippel, the condition now usually referred to as angiomatosis retinae. However, they do not wholly exclude the possibility of an inflammatory change and if such were assumed, they think a tuberculous origin the most probable.

Now I have referred briefly to these various fundus conditions, not in any sense in an endeavor to show that all of these conditions are tuberculous, but simply to point out the difficulties of a positive diagnosis of tuberculosis in certain fundus pictures, and still further to emphasize not only the importance of a complete and exhaustive examination as this relates to the various branches of medicine, but also the necessity of it, if progress is to be made.

*Presented before the Seventy-Fourth Annual Session, Iowa State Medical Society, Des Moines, Iowa, May 13, 14, 15, 1925.

Let us remember that if we exclude congenital anomalies, refractive errors, the effects of radiant energy, neoplasms, and trauma, practically all of the intraocular manifestations encountered in ophthalmology are secondary to pathologic changes affecting distant or adjacent parts. Therefore cooperation is essential, if the examinations are to be made which are so desirable in these cases.

While most of these debatable fundus conditions are of interest, few are more so than the type of retinitis that is associated with definite periphlebitic changes, usually peripheral, and not infrequently with hemorrhage into the vitreous which is often of recurrent type. It is usually observed in young individuals, runs a chronic course, and when associated with vitreous hemorrhage leads to a sudden loss of vision; it is apt to present a slowly but constantly changing picture and proliferative retinal changes are not uncommon. Two cases of this type are recorded below, one under constant observation for six years, the other for seventeen months. The first case is valuable from an ophthalmic viewpoint, because it was possible to observe the fundus changes over long periods of time; and also because of the manifestations presented.

Case 1. J. L., aged twenty-five, first seen at my office November 11, 1919, eight weeks after his discharge from the army. He stated that on October 23, 1919, he saw a sharp flash before his eyes and then noted that the vision of the left eye became suddenly clouded. An oculist was immediately seen and he was advised that he had an intraocular hemorrhage. During the next few days there was a gradual improvement in vision, but about one week later the vision of the same eye suddenly became obscured again and to a greater extent than upon the previous occasion, in fact, for three days he "could not see at all" with the affected eye. He was not aware of any trouble with the right eye.

Upon examination the vision of O.D. was 6/6?? and O.S. 6/6???. Right eye: The vitreous showed a marked pinpoint hyalitis. Aside from appearing hyperemic the disc was healthy. A vague haze extended along the superior temporal vessels and through the macular region. The superior temporal vein was full but not engorged, and along a vertical branch which arose about 2.5 disc diameters from the disc there were several small pinhead sized lesions. One of these in the crotch of a vein was fresh and delicate, three others were yellowish and evidently in the subsiding stages. Far out in the periphery one of the terminals was entirely replaced by a white line adjacent to which were several tiny hemorrhages. Further out along the superior temporal vein a white puff could be seen in the crotch formed by two veins and beyond this there was a similar lesion adjacent to the vein at the point of origin of a terminal branch. In the extreme periphery somewhat below the horizontal meridian, the terminals of the vessels showed a group of typical lesions; these began with a slight puff lying on each side of the vessel, just beyond this the whole vessel was obliterated by a superimposed white exudate, about the size of a pea. Just beyond this the vessel divided and both branches for 1.5 disc diameters were replaced by white lines, but further on the vessel could be seen again but with varying degrees of distinctness owing to a surrounding haze, doubtless an edema. Between the vessels and adjacent to them could be noted a number of thin split-pea sized hemorrhages and one peasized exudate. Along the inferior temporal vein in the far periphery, there was a large peasized yellowish atrophic lesion immediately beneath the vessel. Beyond this for 1.5 to 2 disc diameters, the vessel was practically replaced by a white line and in the vicinity on each side were grouped small puff-like exudate and tiny hemorrhages; these were likewise surrounded by patches of edema. The inferior nasal vein arose as a branch of the inferior temporal and well towards the periphery where the vein divided, both branches were slightly blurred by overlying whitish puffs. About one disc diameter from this point there was a tiny convolution of capillaries somewhat similar to what one sees at times in cases of angiosclerosis of the retinal vessels, while one disc diameter further on the whole vessel was replaced by a white line. The whole area between and about these vessels was hazy, due to edema, and scattered through it were small vague saturated areas and small hemorrhages; the largest and most conspicuous of these saturated lesions was near the crotch of the vessels.

The upper nasal vein at a division far out in the periphery, showed slight haziness of the branches for a short distance beyond the fork. Just beyond this where another branch was given off a similar appearance could be noted, while in the extreme periphery there was an angular patch of edema with small saturated areas and tiny hemorrhages. All of the veins with the exception of the superior temporal were of average diameter.

Left eye: The lower portion of the fundus was completely obscured by a hemorrhage into the vitreous; above were numerous flocculent and punctate vitreous opacities.

The patient was sent to the Polyclinic Hospital for study, November 13, 1919. P. M. H., chickenpox, measles and mumps. For several years subject to sore throat. Three years ago was told by an oculist that he was threatened with iritis. Fifteen years ago a sling-shot concussion of the left eye, the vision was impaired for several hours. Abscess of groin eighteen years ago. Denied gonorrhoea and lues.

S. H.: Electrical engineer. In army fourteen months; served in signal corps overseas. Does not use alcohol or tobacco.

F. H.: Negative.

November 14, 1919, H. = 98 per cent, reds 5,020,000, poly. 86 per cent, trans. 3 per cent, lymph.

28 per cent, large mono. 1 per cent. Coagulation time three minutes.

A Wassermann test was negative. A dozen urine examinations were made; indican being present in a half dozen specimens, calcium oxalate in several, but no albumin, sugar or casts.

November 15, 1919, skin normal; teeth good; no adenopathy. Heart and lungs negative; abdomen negative. Patellar reflexes slightly increased; no Babinski. Blood-pressure 140-85 (Dr. Goepp).

November 15, 1919, no sinus tenderness. Nasal septum slightly excoriated anteriorly on both sides and irregularly thickened. Inferior turbinates contracted and slightly reddened. Middle turbinals rather full, the left touching the septum. Faucial tonsils small, containing small amount of caseous material. Nothing to suggest sinusitis. (Dr. Butler).

November 29, 1919, x-ray examination: No evidences of sinus disease. Slight absorption at left upper incisor, but doubt the presence of an abscess. Pyorrheal absorption between the lower central incisors. (Dr. Pfahler.)

November 25, 1919, positive reaction to O.T. The temperature ranged from 98 to 98.3.

While in the hospital the vitreous of the left eye cleared sufficiently to warrant detailed description. Flocculent opacities could be noted below in the vitreous with punctate opacities elsewhere. In the upper periphery, adjacent to a vertical vein, there was a pinhead-sized puff with five tiny adjacent atrophic lesions, while nearby a similar number of tiny semi-atrophic lesions could be seen. The superior nasal vein divided 3.5 disc diameters from the disc and just beyond this there was a bean-sized whitish exudate above the vein with two hemorrhages below it. In the periphery at the dividing point of the superior temporal vein, a small exudate occupied the fork, while above it a tiny exudate was adjacent to a small arterial branch. Beyond this were several small exudates and scattered hemorrhages. At one point a tiny vessel appeared as a white line with surrounding edema and several tiny hemorrhages. In the extreme lower periphery one could see through the disturbed vitreous the termination of a large angular whitish mass of irregular contour, which extended as far towards the ciliary region as one could see. He was discharged December 9, 1919.

On December 24, 1919, two weeks after discharge, the patient telegraphed that he had had another hemorrhage and he was readmitted to the hospital on December 26, 1919. Upon admission he stated he thought he had a slight hemorrhage while on his way to the hospital. Vision O.D. 6/9??, 6/6??; O.S. 6/40. Right eye: about as before. Left eye: faint red reflex, no view of fundus.

He complained of some pain in a left premolar; the tooth was extracted. As before, examinations were negative. (Given injections of tuberculin). He remained in the hospital until January 17, 1920 and during this time there was a marked absorption of the vitreous hemorrhage, to the extent that the upper peripheral lesions could be noted and even below the outline of the posterior tip of the large white mass could be discerned.

February 19, 1920, vision O.D. 6/4.5 (½), O.S. 6/9??. The patient was last seen October 24, 1924, at which time he was refracted with the following result: O.D. +.25 cyl. ax.90° = 6/6+; O.S. —.25 S = —.25 cyl. ax.60° = 6/6+.

Case 2. A. J., male, aged twenty-three, was referred to me January 16, 1924, at the Wills Hospital, by Drs. Blackwell and Fee. It was reported that during the first week in October there was a sudden loss of vision in the right eye, not accompanied by pain or inflammatory signs. Vision O.D. = Hand movements at one foot; O.S. = 6/9.

Right eye: No fundus reflex owing to vitreous hemorrhage; there was a crescentic opacity down and out in the posterior part of the lens or on the capsule. T.n.

Left eye: The vitreous showed numerous fine punctate vitreous opacities. The disc was healthy but of somewhat dusky appearance. Far out in the nasal periphery, lying in close relationship to the vessels, were several discrete pinhead to split-pea sized lesions. In the upper periphery and slightly to the temporal side were three larger areas likewise in close relation to the vessels. The middle one of the three was partly surrounded by a hemorrhage. A Wassermann test was negative. As the result of an x-ray examination two suspicious teeth were extracted.

On February 5, 1924, he was admitted to the Polyclinic Hospital for further study. As the patient spoke practically no English it was difficult to get a thorough history. He stated he had always been healthy; he denied loss of weight, cough, night sweats, expectoration or hemoptysis, also venereal disease. His parents were living and well.

A genitourinary examination was negative. There were no clinical signs of involvement of the accessory sinuses; the turbinates were full and the nasal septum deviated slightly to the right. The tonsils were hypertrophied and infected. They were subsequently removed. X-ray examination: sinuses, negative; anterior clinoid process showed an enlargement. There was marked mottling throughout the lungs with peribronchial thickening resembling that after influenzal infection. The hilus shadows were very heavy.

The general medical examination was negative aside from signs suggesting fibroid changes of both upper lobes. (Piersol).

Urine: sp. gr. 1920; no albumen or sugar. No casts, pus, or red cells; many phosphate crystals. Blood: hemoglobin 85 per cent; red cells 5,020,000; white cells 10,200. Poly. 72 per cent; small lymph. 20 per cent; large lymph. 5 per cent; transitional 3 per cent. Clotting time nine minutes. Wassermann test negative. Per 100 c.c. blood: sugar 120 mg.; creatine 1.4 mg.; uric acid 7.7 mg.; urea, 9 mg.; chlorides, 450 mg. (Nael).

While in the hospital the temperature fluctuated between 98 and 98.4, on odd occasions as low as 97,

and on one occasion 99 for three days. The pulse ranged about 70.

On March 16, 1924, the faintest suggestion of a returning reflex could be noted in the right eye about the periphery. April 12, 1924, vision O.D.—Hand movements; O.S. = 6/6. At time of discharge on June 14, 1924, there was still no appreciable vision with O.D.

The patient reported to me at the University Hospital July 18, 1924, when a whitish reflex could be noted in the extreme lower periphery of the right eye, doubtless emanating from an exudative patch. In the lower vitreous there was a vague suggestion of grayish cloud-like membranes. No view of the central structures could be had. In the left eye there were punctate vitreous opacities; the disc appeared to be healthy but adjacent to it there was a beginning patch of proliferative tissue. Up and out as well as below in the periphery, were flat, disc sized areas of proliferation. It was difficult to study the small lesions in the nasal periphery owing to their position and the hazy media. No hemorrhages were visible, in fact since he first came under observation but one small hemorrhage in the nasal periphery has been observed.

During the next three months he was seen every two to three weeks until October 25, 1924, when he came to the hospital and reported that three days before he had a sudden loss of vision in the left eye. Examination readily determined a large vitreous hemorrhage most marked in the lower two-thirds of this structure. He was immediately admitted to the hospital. Another series of general examinations failed to find anything conclusive; an x-ray of the chest was negative. Owing to toothache two bicuspid teeth were extracted; the roots were rotten and a small amount of pus was present.

Within three weeks the central fundus structures could be seen in the left eye, although vaguely, and in the extreme lower periphery could be noted a whitish reflex. Within two weeks more this resolved itself into a marked patch of irregular shape, whitish in color and separating it from a much larger similar patch was a sheet-like hemorrhage, doubtless overlying a lesion of the same type. He was discharged on December 15, 1924, at which time the vitreous of the left eye showed marked clearing. Extending into the vitreous from the exit of the vessels on the disc there was a greenish white proliferative strand with irregular translucent terminals, which could be seen with a + 6.00 lens. The margins of the whitish exudative patch could be seen sweeping the lower periphery and from its position and the contour of the visible portion it must have extended to the ciliary body; the layer of hemorrhage was still visible but was thinner. The proliferative patch up and out was well defined and almost surrounding a grayish edematous area was a strand of proliferative tissue that almost formed a circle. Vision O.D. = Counts fingers at 5 inches; O.S. = 6/9 +1.

On January 29, 1925, vision O.D. = 6/12; O.S. = 6/6. During the preceding month the vitreous of the right eye had become much clearer and the disc could be seen vaguely for the first time; it appeared healthy. The vision remains the same at the present time.

COMMENTS

While v. Graefe had referred to spontaneous retinal hemorrhage, cases of this type received more attention after the report by Eales in 1880, under the title of "Cases of Retinal Hemorrhage Associated with Epistaxis and Constipation". In a contribution two years later he suggested that they be designated as primary recurrent retinal hemorrhage and offered the suggestion that it was a neurosis affecting the circulatory and digestive systems. Since that time many case reports of recurrent hemorrhages have been placed on record. In 1921, 110 cases were elaborately tabulated by Finnoff. Among these, various etiologic factors were cited as responsible; tuberculosis was credited with the largest number, but syphilis, gastrointestinal conditions including constipation, certain urinary findings such as oxaluria and phosphaturia, focal infections, menstrual and endocrine disturbance, and alterations of the blood and circulation have all been credited or suggested in certain instances. It is of interest to note that in the largest number of cases, the cause was undetermined. Since that time a considerable number of other cases have been cited in the literature, with the same varied findings or etiologic possibilities. But a few months ago Friedenwald contributed an excellent article on the vascular changes noted in these cases.

Noel has been credited as the first to suggest the tuberculous character of the lesions present in these cases, but the observations of Stock and Axenfeld emphasized the importance of tuberculosis as a causal factor, and suggested the toxins as the offending agents.

In 1913 Steffen recorded the history of a case with recurrent hemorrhages and in addition to the retinal changes there was an optic nerve atrophy. She credits Gilbert with being the first to point out the fact that the optic nerve may become affected in these cases.

In 1914 Fleischer, in his microscopic findings in a case of juvenile periphlebitic retinitis, found that in the vicinity of the retinal veins there were typical groups of epithelioid and giant cells, in places showing slight necrosis, and forming nodules lying on one side of the vessels or sheaths surrounding them. The vein lumen was narrowed by these nodules, and in places constricted or occluded by endothelial proliferation. Inflammatory changes were confined to the vicinity of the vessels. In spite of his failure to find the tubercle bacillus, he felt that the nature of the

findings warranted his conclusion that hemorrhages of this type were dependent upon actual tuberculous foci, and were not due to tuberculous toxins. He inclined to the belief that while the primary infection was hematogenous, it spread backwards from the anterior part of the eye by way of the lymph paths.

In 1922, after referring to similar findings by Axenfeld and Plocher in 1921, Suganuma, in the microscopic examination of an eye of this particular type, found periphlebitic changes throughout the retina; cellular masses consisting of epithelioid cells with lymphocytic infiltration about the periphery and occasionally giant cells. Serial sections demonstrated a single tubercle in the middle layer of the choroid. The retinal veins were surrounded by cellular masses consisting of epithelioid and giant cells. The walls of the vessels were infiltrated and separated into lamellæ. None of the retinal tubercles showed necrotic changes, but some were partially or entirely composed of connective tissue cells and surrounded or interlaced with delicate connective tissue fibres. It was believed that the endothelial proliferation gave rise to an endophlebitis with narrowing or obliteration of the lumen, and as the result of this, secondary hemorrhagic changes occurred in the retina and vitreous. He assumed a direct hematogenous route from a pulmonary lesion, inasmuch as there was no anterior involvement of the globe such as occurred in Fleischer's case. He believed the disease to be a genuine tuberculous periphlebitis of the retina. Thus, three eyes of this type have been examined microscopically and the findings were sufficiently characteristic to justify a diagnosis of a true tuberculosis, but in none was the tubercle bacillus found.

As above inferred, some of these cases have developed both with and without demonstrable tuberculous lesions elsewhere in the body. A certain number have been subjected to x-ray examination for possible lung or mediastinal glandular involvement in accordance with suggestions of Siegrist, Heine and others, and in both patients whose reports are here submitted such examinations were made, and in one instance repeated without positive findings. But can we definitely exclude tuberculosis, even with negative clinical and x-ray findings? It would seem questionable if the case report cited by Jackson is considered, and probably this is but one of many similar cases. This patient had a pulmonary hemorrhage, but all findings were negative despite x-ray examinations and study by a group of tuberculosis experts. At his death a pulmonary lesion not larger than a filbert was found, that had gone to complete cavity formation.

Naturally, in the discussion of these cases the role of the toxins has been brought out, and recently Whitehead, in recalling the mediastinal glands as a possible source (A. J. O., 1923, 6, p. 47) has called attention to one hundred fatal war injuries on men of good physique, where evidences of tuberculosis were found in 42 and a glandular involvement in 32 per cent. Even with the presence of tuberculosis elsewhere in the body, few would contend that this necessarily implied that the ocular lesion need be tuberculous. But in the absence of any other demonstrable lesions with a positive general and focal reaction to tuberculin, however undesirable a frank focal reaction may be in these vascular cases, and in view of the microscopic findings on record, I believe it would be a justifiable conclusion. This would be still more probable if the symptoms continued after the eradication of any existing focal disturbances.

Luedde's excellent contribution to the use of tuberculin has emphasized the diversified opinions, even among the laboratory group, that still prevail in regard to it. Personally, I have always tried to use it with caution and never indiscriminately. While I have never seen any ill effects from small doses, I have seen a vicious intraocular hemorrhage follow the use of 1-1000 mg. and in another instance an intense focal reaction that persisted for weeks. I likewise have seen a general and focal ocular reaction follow the von Pirquet dermal test. It is interesting to note that from the observations and questionnaire investigations of Luedde, he concludes that a focal reaction to a tuberculin injection points strongly to a tuberculous lesion, but not positively. He further points out that in three-fourths of the cases of suspected ocular tuberculosis where a subcutaneous tuberculin test was used, a focal reaction occurred in the nasal mucosa or accessory sinuses. As a consequence he suggests the possibility of the bacilli or their toxins being carried to the eye from the nasal mucosa by the lymph currents.

Aside from tuberculosis in some of these cases of recurrent hemorrhage, there is no doubt but what syphilis has been a causal factor and with syphilis I would include focal infection. In fact in 1918 Appleman reported from my clinic the histories of two cases illustrative of these possibilities.

In regard to the endocrines Van Duyse (cited by Davis, T. A. O. S., 1920, v. 18, p. 55) has recorded the history of a case of recurrent retinal hemorrhage where the endocrines were regarded

as at fault. In this country Zentmayer introduced this possibility in 1920 (A. J. O., v. 3) owing to the asthenic type of certain of these individuals, the oversize of three of his patients and the beneficial effects of thyroid extract, which had been used by a number of observers including himself. He suggested (T. A. O. S., 1920, v. 18, p. 62) that the adrenals may be at fault. On the other hand Fridenberg has pointed out that certain of these patients are of the typical hyperthyroid type. Wilmer, Krause and others have also referred to the possibility of an endocrine origin.

The notes of the two cases here cited are too full to refer to in detail, particularly the first case, where I have been able to follow the details of the most delicate changes for a number of years, but several points may be elaborated upon. The first patient certainly had three and possibly four intraocular hemorrhages in the left eye, but despite constant and diffuse retinal changes the right eye was never so affected. The first two were doubtless into the lower vitreous; the evidences of the third, followed in two days by a probable fourth, were much more marked, the vision sinking to 6/40. In the second case there was an overwhelming hemorrhage in the right eye and seven months later he returned with a hemorrhage into the lower part of the vitreous of the left eye and, of course, with a decided reduction in vision.

While it may be true that the absorption of these hemorrhages is as a rule astonishingly rapid, the fact remains that they are not always so, for in the second case it was five months before even a suggestion of a pinkish reflex could be obtained, and one year before the faint outlines of the disc could be observed, although a yellowish reflex from a large peripheral exudative mass could be noted previously. In another case, not here recorded, it was four months before the fundus structures could be seen.

The source of the hemorrhages in these cases has been a matter of some discussion. Reference has already been made to this in the pathologic reports already referred to, but the vessels of the ciliary body have also been considered as a possible source, and in certain instances the choroidal circulation has been regarded as the point of origin. In the two cases under discussion, three of the four eyes developed vitreous hemorrhage and in each eye after the vitreous had cleared sufficiently to study the fundus a large, more or less irregular mass of exudate was noted in the extreme lower periphery. It was of the massive type, white and had a definite elevation, but only the posterior portion of it could be seen. From its shape and position it would be fair to assume that it extended at least as far forward as the ciliary body, still at no time did either of these patients show definite clinical signs of a cyclitis or iridocyclitis. In each instance a portion of the exudate was covered by a layer of hemorrhage. In the first case my notes show that by December 2, 1920, the large exudate had almost completely absorbed and only a faint trace remained; ultimately, by March 7, 1921, it entirely disappeared. In the second case these massive exudations are still quite evident. While it cannot be definitely proven, it is my opinion that in each instance the hemorrhage arose from the vicinity of these exudates.

Both of these cases exhibited definite proliferative changes, the types exhibited in Case 1 have been of especial interest. On October 29, 1920, when examining the left eye an unusual appearance was noted in the macular region, the lesions were vague and ill-defined and although studied with both the reflecting and electric scope, with concentrated and subdued illumination, it was impossible to say whether the appearances noted were reflexes or beginning exudative or proliferative changes. Three weeks later, this doubt was dispelled, for one could note spread out over the macular region, which up to this time had not shown any perceptible lesions, a delicate milky fenestrated web not unlike a spider web, but with wider and more irregular spaces. There was a tendency for a few strands to creep towards the disc along the terminal of a small macular vessel that emerged down and out on the disc. In certain places fine vessels were crossed by the filaments of the web. The process was most marked directly in the macular region. This picture changed so slowly that even by June 22, 1921, the process was chiefly macular, although the filaments were coarser and tended more toward the inferior temporal vessels, one to two disc diameters below the disc. At this time, however, a new proliferative process down and in along a branch of the inferior nasal vein was just budding; I shall refer to this later on. These slow progressive changes continued during the next four months until by October 26, 1921, much of the sheet or web-like appearance in the macular region had disappeared but the strands that remained were slightly coarser, of a milky translucent appearance, and several rather conspicuous ones curved below and around the disc over the retinal vessels. At this time the vision was O. D. 6/9+; O.S. 6/6?

By January 26, 1922, the macular changes had entirely lost their characteristics, only slight visible traces remaining, but there was present over

a central oval area a series of delicate, radiating, milky, and somewhat translucent lines, arranged in stellate form. In my notes I referred to these as probably folds or changes in the hyaloid, rather than lines of edema in the retina. Lister, in his contribution on "Detachment of the Vitreous", has described the same appearance as "foldings of the hyaloid". No strands could now be seen to cover the smaller macular vessels, but could be noted below the disc, and one of these curved upward to form a delicate proliferative patch the shape of a biconcave lens that extended between and to two horizontal vessels that came off the nasal side of the disc. A half disc diameter to the nasal side of it a curved cord-like strand extended between the same vessels. When seen on April 4, 1922, the macular striæ were longer but of the same appearance; strands crossed the vessels below, a few extending downwards but most of them in a more or less horizontal direction. The lower end of the curved strand that extended between, and now just over, the two vessels could now be traced along the course of a branch of the inferior nasal vein, well out to the mid-zone. At about the point where it appeared to terminate a small irregular hook seemed to arise from or adjacent to the vein, and extend to a pea-sized placque of proliferative tissue that projected into the vitreous, and from this there radiated seven tiny vascular loops, like ribs from an umbrella, that extended beyond the visible periphery of the placque. This could be seen with a + 6.00 sph.

By December 9, 1922, the remaining strands including the biconcave patch on the nasal side of the disc seemed to be more condensed. Striations were still visible in the macular region and apparently extending from the foveolar reflex was a single strand that coursed inwards across the inferior temporal vessels and split up into ramifications.

A striking change was noted on October 18, 1923. A strand that extended from the base of the biconcave proliferative patch on the nasal side of the disc extended downwards and outwards to a point a couple of disc diameters below the disc and terminated in a shepherd's crook with one end apparently free. It was thicker than the other strands and suggested an elastic band that had been released from tension and was shortened and thickened as the result of it. Down and out from the free end there was a pear-shaped tear in the retina about one-half a disc diameter in size, with an undermining of the margins for apparently 3 mm. A branch of an inferior vein passed along the lower and outer undermined border but beyond the margin of the tear and at its approach a thin and tortuous vessel came off the vein or its vicinity, extended forward into the vitreous for a short distance where a split-pea-sized placque of proliferative tissue was attached. The vessel, however, continued beyond this for some distance to terminate in a vascular loop. To my mind this represented a tear in the retina as the result of traction from a proliferative strand, although there may have been some adherence of the vitreous to the retina, to which Sir William Lister referred in 1922. There was no exudative patch any place near this tear. It may be recalled that in Coats disease detachment of the retina has been recorded but usually near or in the vicinity of the exudation.

In another seven months a beautiful change had occurred in the first vascularized vitreous patch. Extending downward from the margins of the pea-sized placque was a filmy curtain, through which the vascular loops extended, but they passed beyond its apparent margin to terminate free in the vitreous. Upon movements of the globe, the filmy vascular curtain would be distended, giving one a very realistic picture of a jelly fish. In October, 1924, just where the tortuous vessel arose from or near the venous branch, a delicate red line had appeared that was doubtless the earliest signs of another tear in the retina.

I have not dwelt upon the changes that developed in the right eye for they were more in accord with those usually seen. Constantly changing discrete lesions, with whitish thin sheet-like proliferative changes as well as numerous vascular changes were noted. Some of these white sheet-like proliferative areas seemed to develop without the presence of hemorrhage at their point of origin, but one white patch down and in was always bordered or capped at some portion of its circumference by a thin hemorrhagic extravasation. At one point a medium sized vein made a series of loops similar to radiator coils, and plastered over these were patches of proliferative tissue or much accentuated lymph sheaths.

Naturally since these proliferative changes develop in those conditions in which retinal hemorrhages are prone to occur, namely, trauma, cardio-vasculo-renal disease, syphilis, diabetes, and to quote Neame, "there is no reason why metastatic infection should not be included", various factors concerning the circulation have come under consideration. Thus, the blood-pressure has been discussed for years, but it has been found to be decidedly variable, as was borne out in these two cases, where in the first case it was 140-85 and in the second 90-60. There has been likewise a lack of consistency in the blood coagulation time

in these cases, again borne out in the histories here reported, in the one instance three minutes, in the other nine minutes. Other observers have suggested the presence of some abnormal irritating element in the blood which is peculiar to these individuals who develop proliferative changes; thus, Genet believes this factor rather than the hemorrhage is responsible for these manifestations.

In the study of 121 cases of proliferative retinitis Scholz has been quoted as finding juvenile hemorrhagic cases responsible for 34 per cent, syphilis for 6.6 per cent and trauma for 22 per cent. In his discussion of this subject Parsons points out that the greatest amount of mesoblastic tissue occurs about the vessels at the disc and in the optic cup and that it is in his neighborhood that the greatest amount of reaction would result. He points out that in the periphery, the smallness of the hemorrhage and the small amount of tissue capable of proliferating act as deterring factors. However there are many, such as Schreiber, Suganuma and others, who believe that a proliferation of the glial tissue also occurs.

Certain investigators such as Koyanagi and Oguchi studied this question after the injection of blood into rabbits' eyes. The former found a growth of glial tissue from the bases of Muller fibres spreading over the retina and primary degenerative changes in the retinal tissue, and while the latter also found a glial hyperplasia, credited to the irritation produced by migratory cells, he accepted Parsons' views as to the origin of true proliferative retinitis. Collins and Mayou as well as others, believe it originates from the endothelial cells of the vessels.

Neame has recently made an excellent report on this subject, in which he gives the microscopic report of Wallace's case as well as five others, but unfortunately none of these were of the periphlebitic type.

The question as to whether these changes develop without hemorrhagic manifestations is difficult to answer. In my first case, proliferative changes certainly developed at areas where a hemorrhage was never seen, although numerous hemorrhages were visible elsewhere in the fundus and may have acted indirectly. On the other hand it is conceivable that in certain cases repeated small hemorrhages might occur too far forward to be seen or may have been present and absorbed before a case came under observation. Recently Finnoff has recorded such changes without hemorrhagic manifestations. In several instances I have noted the strand-like proliferation in cases of exudative choroiditis where no hemorrhages were present at the time of observation, but I have never observed it in a case without intraocular hemorrhage, where the case was followed through from the onset.

Most clinicians probably believe that toxins of one type or another are capable of producing certain types of intraocular inflammations; and certain of the laboratory group, for example Kolmer, admit of its possibility, although the statement of Flexner that we know little or nothing about their action, may be perfectly true. If such be the case, I do not see why, under certain conditions, they might not be capable of producing certain types of proliferative change.

These two cases presented three types of proliferative change; the strand or cord-like form that extended over the retina; the flat sheet-like form likewise spread over the retina and the vascularized type that projected into the vitreous. In certain places there was a definite absorption as far as one could see of the first two types; while the third type has shown an extremely slow progress. Considering the fact that definite exudative masses were present in the extreme periphery of three of the four eyes described, some may question whether these were not cases of Coats disease, for they occurred in the same type individuals, but both cases gave definite bilateral manifestations. Personally, I do not believe they were cases of retinal disease with massive exudation, and they illustrate very well the difficulties attending the diagnosis in such cases, as well as the fact that the splendid report of Coats in itself an extraordinary piece of work and timely, still leaves certain types of cases that strongly simulate the condition he has so ably described, but still cannot be classified with it clinically.

Treatment—After all examinations have been completed, any focus of infection should be eliminated when this is possible and any systemic condition vigorously treated. Probably better results have followed the use of tuberculin than any other treatment, but the initial dose should be small. Finnoff has rightly called attention to the importance of very small initial doses in the treatment of those vascular cases; he begins with 1-500,000 mg. and doubles the dose from day to day. Fibrolysin and thyroid extract seem to have been of service in certain cases, but in connection with the use of the latter drug it may be well to recall that instances of vitreous hemorrhage of the non-recurrent type have been recorded in cases of Graves disease. (Jeandelize, Bretagne and Richard, Y.-B., 1924). The iodides locally and internally as well as the local use of dionin may also be of service. Ormond has given a full review of the treatment of intraocular hemorrhage and his report may be referred to with profit. I

have not employed milk, anti-diphtheric serum and typhoid vaccine in these cases, but if used in these vascular cases I believe it should be done with extreme caution. I would refer those interested in foreign protein treatment to the very excellent contribution of T. D. Allen, which is to be presented at the coming American Medical Association meeting, although no case of periphlebitic retinitis is referred to.

During the past few years a number of contributions have appeared concerning the withdrawal or aspiration of the vitreous in these cases. Spanyal and Braun have recorded favorable results, but the former cautions against its use too soon after a hemorrhage. Grunart has recorded good results from paracentesis in cases of hemorrhagic retinitis and vitreous hemorrhage.

Finally reference may be made to autohemotherapy as advocated by Gonzalez and only recently referred to by Dominguez. The latter states it may be used in tuberculous or febrile conditions where milk is contraindicated. Two to five c.c. of blood are withdrawn from the ulnar vein and immediately reinjected intramuscularly. I have not had any experience in the type case immediately under discussion, with any of these operative methods or with the foreign proteins just referred to.

PERFORATIONS OF FRONTAL SINUS WALL IN CHRONIC EMPYEMA*

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When perforation of a frontal sinus wall occurs complicating a chronic empyema within the sinus, we have presented a condition which, being seldom seen, arouses considerable interest and speculation in our minds. It seems unusual that so few occurrences of this nature take place. Chronic frontal sinus empyema is quite frequently seen and during acute frontal sinus empyema perforation is not uncommon. The two conditions are somewhat comparable to the rapid bone destruction seen in some acute mastoid infections as contrasted with the sclerosis and excess osteogenesis seen in many cases of chronic otorrhea.

At any rate, authorities seem to agree that in chronic frontal sinus disease perforation of the walls rarely occurs. It is occasionally affected as the result of an acute exacerbation of a chronic infection associated with a non-patulous frontonasal duct, a duct obstructed by swelling, edema, or hypertrophy of the soft tissue, or from obstructing polypi within the sinus, duct or frontoethmoid cells, or from unusually thick, viscid pus in conjunction with the above. In such a case the sinus content may accumulate to such a degree that pressure degeneration of the lining membrane or blood-vessel walls occurs. Nourishment thus being shut off, a localized osteitis is set up with necrosis and perforation. This is aided at times by a thrombo-phlebitis of the veins penetrating the sinus wall and the setting up of an external periostitis with softening of the bone and breaking down of the wall in this area.

A second type of perforation is affected in previously operated cases if an unobliterated area of diseased tissue remains in a recess of the sinus and perforates the bone in effecting an exit for the products of infection. In other cases of chronic frontal sinus empyema perforation occurs as the result of insufficient drainage with a rise in tension of the sinus content and consequent bone absorption without corresponding osteogenesis. This condition is more frequently paralleled in mucocele of the frontal sinus.

Bony defects of congenital origin or due to trauma may also, in the presence of chronic sinus infection, give egress to the sinus content, as may also the bony foramina for nutrient vessels and nerves. Perforations have occurred as the result of syphilis and tuberculosis.

When even the most inadequate drainage facilities are present the sinus content rarely accumulates to such a degree that pressure necrosis occurs, nor does the lining membrane or bony wall reach an extreme condition of pathology without such discomfort to the patient, that treatment is instituted before perforation takes place. Saprophytic infection rarely becomes of importance, due to the fortunate fact that drainage occurs from the dependent part of the sinus. Contrast the stench of a maxillary empyema of long standing with the usual absence of any offensive odor to frontal sinus drainage. And finally it is probable that, even in the most severe cases, there are times when the sinus is, except for a hyperplastic membrane and polypi, almost empty of secretion, thus allowing for a rebuilding of the defenses weakened by previous attacks and the osteogenetic repair and strengthening of the bony wall.

According to Skillern, perforation of any of the walls as a result of chronic suppuration, is a rare condition and comparatively seldom met with. Most of the cases, which have come under observation, have been due to an unsuccessful external operation. The orbital wall is perhaps most frequently affected and, when rupture occurs, it is directly below the inner extremity of

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the eyebrow at that portion which contains the small foramina for the passage of communicating veins. The anterior wall when affected, usually shows the perforation above the inner end of the eyebrow. The posterior, or cerebral wall, is affected much less often than the two preceding, due to the exceptionally good nutrition furnished by its double layer of periosteum. At operation the septal wall is also occasionally found to be perforated. The symptomatology of this condition may be illustrated by the following case reports:

Case 1. A farmer, aged thirty-eight, was kicked in the head twelve years ago by a horse. Healing was complicated by bone necrosis in the left parietal region which healed following surgical treatment and has given no further trouble. The patient's nose was also broken in this accident. Since then he has had left sided nasal obstruction, catches cold easily, has almost constant nasal discharge and has been subject to frequent left-sided frontal headaches which have gradually increased in severity. Two weeks ago the patient contracted a mild cold. As usual his headaches became more severe at this time but he had no fever, nor was he confined to bed. After one week, swelling and induration of the left upper lid and of the tissues over the left brow appeared. The eye is now closed by this tumefaction. There is very little pain at present. The nasal discharge has increased in amount and is now thick and purulent.

Examination of this otherwise healthy man showed the left eye completely closed by a non-fluctuating swelling which involved an area extending from the midline four centimeters above the brow laterally to the hair line. There is a scar from some previous operation in the left parietal region, about which no pathology is apparent. The nose is deformed externally and intra-nasal examination reveals a septum badly deflected to the left, polypi present in left ethmoid region and a profuse purulent discharge. The x-ray shows clouding of the left frontal, ethmoidal, and maxillary sinuses. Under local anesthesia an incision was made over the point of greatest swelling and a probe could be passed through a dehiscence in the anterior wall over the lateral extremity of the orbital ridge. Pus under pressure appeared on incising over this point.

At operation the sinus was opened and found filled with thick pus. The entire orbital ridge was rough and superficially necrosed and at the lateral extremity of the sinus the orbital wall was also necrotic. After thorough curettage of all diseased tissue and drainage of ethmoid and maxillary sinuses healing occurred and the patient when seen one year later had had no further trouble.

Case 2. A female, aged thirty-seven, came to the office for treatment of the right upper lid which for one week had been tensely swollen. She complained of no other symptoms excepting a rather severe frontal headache of a type similar to those she had had for several years at varying intervals. The swelling had occurred rather suddenly while she was suffering from a mild cold such as those to which she is quite susceptible. The ordinary symptoms of chronic trouble such as pain on stooping forward, morning headaches, moderate discharge and frontal tenderness had been present for years. Yet symptoms pointing to acute frontal sinus involvement were very vague. On exploratory incision of this "abscess" a probe was passed into a large right frontal sinus through an opening over the supra orbital notch. Intranasal examination revealed little else than a septum badly deflected to the affected side. Sinus x-rays showed cloudiness of the right frontal and maxillary sinuses. The patient was to have entered the hospital the following day for operation but did not again appear for a period of three weeks. Excepting for profuse external drainage through the frontal sinus fistula the picture was unchanged. A submucous resection was performed as a preliminary step following which an external frontal sinus operation was performed. There was found enormous destruction of the orbital wall, a dehiscence one centimeter square over the supra-orbital notch and a purulent and necrotic ethmoid. The maxillary sinus was also drained. The patient left the hospital in three weeks and was discharged from my service in five weeks from the time of the operation with a surprisingly good cosmetic result. I have seen her eighteen months later apparently entirely well.

Case 3. C. D., age twenty-two. Three days before this patient entered my service he had bumped his forehead against an automobile window with almost negligible force. Swelling occurred at once and has gradually increased until both eyes are now closed. This patient gave a history of having had almost continued colds for the past four years. He has been unable to work steadily for two years, because of the pain attendant upon stooping or lifting any weight. These pains are located in the frontal region and are exaggerated each time he has a cold. Morning headaches are constantly present. Nasal obstruction, bilateral in character, has increased until at present almost total obstruction is present. There is a chronic purulent nasal discharge.

Examination revealed a diffuse, non-fluctuating frontal swelling greatest over the globella. Both eyes are closed by edema. No crepitus is present. Each nostril is almost occluded by ethmoidal polypi. A profuse discharge is present.

The x-ray revealed an enormous frontal sinus on each side, the anterior wall of which is very thin. No fracture is present but at one point, almost in the mid-line three centimeters above the brow, a bony defect may be seen. The sinuses are each clouded, as are the ethmoids on each side.

The patient refused external operation so a local intranasal drainage of the frontal sinuses and ethmoids was performed. Under treatment the external swelling had almost disappeared in two days and the patient, living in a nearby town, insisted on leaving for the week end but returned on Monday

with the swelling present in a form more exaggerated than before, temperature 103°, leucocytes 20,000, and with a severe headache and dizziness. Under local anesthesia an incision was made over the glabella and pus under pressure was evacuated. A probe passed directly into the frontal sinus. The eye-grounds could not be examined. A spinal tap was refused. Under sinus irrigation and hot nasal irrigations at the hospital this temperature was down to 100° F. the following morning when an external operation was performed. The external wall was of paper thinness. A perforation was present in the center of the forehead, the septal wall was found perforated and a perforation one centimeter in diameter was present in the posterior wall of the right sinus. The dura was covered with old granulations. Each sinus was filled with numerous small polypi. Free nasal drainage was established after thorough curettage of all diseased tissue and the wound approximated with two tension sutures after packing with iodoform gauze. Three days later, the swelling having decreased sufficiently, the packing was removed and tube drainage instituted after which the wound was closed. The patient left the hospital in ten days and has had no trouble for the past six months.

Our third case is of especial interest in that, whether we accept the frontal dehiscence as being a true perforation or caused by recent trauma, we still have a more unusual condition present—a perforation of the posterior, as well as of the septal wall. Case 1 might perhaps be construed to represent perforation from without into the sinus. I do not believe this to be the case, however, as the extreme degree of obstruction to nasal drainage as well as the sinus pathology were sufficient to account for the condition. Case 2 illustrates to a marked degree the very moderate signs and symptoms produced by a frontal sinus involvement of many years' duration.

No revolutionary conclusions have been evolved from my observation of these cases. I have been struck by one or two outstanding facts, however, which I shall give in lieu of any orderly conclusions.

In the first place one is often amazed, in these cases of chronic frontal sinus empyema which have gone on to perforation, at the rather moderate inconvenience and pain which the patient has suffered during the chronic course of his trouble, as compared with the marked pathology finally produced by the disease process. And from this we may state that, apparently trivial frontal sinus symptoms, in patients coming to our offices for refraction or treatment of ordinary colds and headaches, is no excuse for an incomplete, and therefore inefficient examination. All of our scientific training through precept and experience as well as all diagnostic aids should be used, in order that a focus of infection in so vital a place may not be overlooked.

And secondly, these cases illustrate to a marked degree the rule that chronic disease of any of the nasal accessory sinuses is largely dependent upon impaired ventilation, circulation and drainage. We are all of us emphatic in our views on rhinologic conservatism, yet we know that sometimes one is conservative when radical. After all, at the present time when our therapy, operative or non-operative, has become more scientifically established, we should not hesitate to insist that in our specialty as well as in others, there is a place for preventive medicine and surgery.

SOME OBSERVATIONS ON THE MANAGEMENT OF CYSTITIS*

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Disturbances of the urinary bladder are very common, occurring at any age and in either sex. The three most frequent causes are infection, obstruction, and nervous disorders—either functional or organic. We are here concerned with infections as they pertain to the urinary bladder, the clinical picture of which the general practitioner sees as pain, frequency, and pyuria, commonly called cystitis.

It is with a considerable degree of reluctance that the word "cystitis" is used in the title of this paper, because in the past the term has been found misleading, with reference to diagnosis of disease in the urogenital tract. With the advent of more exacting diagnostic measures as the roentgenogram, renal function determination, urinalysis and the cystoscope, it has been determined that cystitis is a symptom complex in 90 per cent of cases, and a primary entity only in the remaining 10 per cent. For example in a series of eighty-seven cases of cystitis in women observed by Smith, 80 per cent proved to be renal in origin. Studies made by Stevens and Arthurs in 152 cases of irritable bladder in women revealed urethral stricture present in sixty-seven, or in other words, the origin of the bladder irritability was urethral in 43.5 per cent.

Anatomically the position of the bladder is unique. In the male it serves as a connecting link between the urinary and genital systems, while in the female it lies in close proximity to the pelvic structures, sharing in a way, the same, or a closely related circulation, nerve and lymph supply. Because of this relationship disturbances of function brought about by pathology in the

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kidney, uterus, prostate or in the urethra below reflect more or less directly in producing the clinical picture of cystitis (frequency, pain, and pyuria) in either a mild or severe form. In other words, cystitis represents the dial of an indicator, which registers by way of symptoms and, at times, local pathology, disease in either the genital or urinary systems or both.

Under such circumstances, it is obvious that the responsibility of the physician in undertaking the management of any case of cystitis is manifold, and includes the causative factors in the production of cystitis as well as the local condition itself. Thus if stricture, prostate and nervous disease have been excluded and the bladder has been explored for the presence of stone, new growth or other primary lesion, and the urinary tract for pyelitis, prostatitis or urethritis, then medication will give quick and decisive results in curing the patient, and such cure should be the aim and ambition of every member of our profession.

The Acute Stage—This includes all groups characterized by symptoms of pain and urgency regardless of time. This stage is distinguished from the chronic by the presence of these symptoms. The urinary picture in both may be very similar revealing the presence of pus and blood with the associated elements of infection. Oftentimes there is a terminal hematuria. Unfortunately, the stage of acute cystitis is frequently associated by the patient with a previous instrumentation, although a definite urinary infection may have preceded it. Personally, I believe that this accounts in a large measure for the noticeable timidity on the part of the physician in refraining from the use of local treatment in these cases—a procedure which I feel every physician should take upon himself to employ in order to secure earlier relief for his patient.

General Measures—In all cases with acute bladder symptoms, bed rest is imperative. Frequently a relapse follows when a patient is allowed to rise from bed too soon, and a second early rising may cause a further relapse. Rest and relaxation are just as important as in the management of disease of the thyroid. I consider that the initial confinement to bed should be for a period of a week to ten days after the cessation of symptoms and the urine has become clear.

Opium and its derivatives, given subcutaneously or preferably in the suppository form, offer invaluable aid in alleviating pain, especially at the onset. Prolonged use of morphine, of course, should be discouraged for reasons apparent to everyone. The patients are always grateful for moist hot fomentations placed over the groin and perineum. As advocated by Caulk and others, an alkali preparation of potassium and sodium acetate or citrate, in doses of 10 to 30 grains, with tr. hyoscyamus, may be given by mouth in order to render the urine alkaline. Probably more effective and a greater degree of alkalinity is to be obtained by the use of sodium bicarbonate given in large doses.

Local Treatment—Direct medication of the bladder is limited as a rule to the use of instillations. The organic silver preparations have retained their popularity for this purpose. Argyrol 10—20 per cent; neosilvol 10—20 per cent, and mercurochrome one-half to one per cent are very widely used. A general rule to remember, which by experience permits of no exceptions, with respect to all drugs used as instillations into the bladder is that they should be freshly prepared. Some clinics, I am informed, follow the custom of daily preparation of these organic salts. Local measures should afford immediate relief; if not they should be discontinued and the possibility of irritating residual urine be determined. Not infrequently, there is an individual intolerance to the drug used. Recently Watkins and Curtis have recommended the use of one-half ounce of one-half per cent mercurochrome for bladder instillations. They were impressed with the possibility that argyrol and silver nitrate were irritating because of the formation of a residue. The manner of giving the instillation is important and should receive consideration. Success or failure may be attendant, at this stage, upon proper, careful selection of the catheter used. A firm, smooth soft rubber urethral catheter of a medium size calibre, 16-22 French, is the most satisfactory. A small inelastic catheter may buckle and injure the membrane lining usually at the site of the internal urethral sphincter, which has already been subjected to spasmodic irritative contraction incident to the inflammatory process. The rapid introduction of a catheter is not necessary under any circumstances. The admonition of Keyes still holds good that, gentleness and cleanliness should always be held uppermost in mind and they are thus given in their rank or importance.

The Chronic Stage—Chronic cystitis is essentially secondary to some other lesion and such a diagnosis should always include the activating cause. As differentiated from the acute stage there may be no symptoms of pain and frequency. With injuries of the spinal cord and in tabes, the cystoscopic picture may be identical with that of an acute cystitis with all subjective symptoms

lacking, with the possible exception of frequency, due to the fact that the inflamed mucosa does not permit of dilation.

Chronic cystitis in youth is usually indicative of pyelitis, renal tuberculosis or stone. In the middle aged it as a rule signifies pyelonephritis, renal tuberculosis, stone, or the gonorrheal infection. In the aged, it usually accompanies tissue changes as prostatism, cystocele, carcinoma and secondary stone formation.

It is apparent that the care of chronic cystitis involves primarily the eradication and treatment of the factors producing it. Such eradication is not always possible or practical, as in cystocele, tabes or carcinoma.

Local measures involve daily irrigations with any of the following solutions: Silver nitrate 1:10000-1:5000; or potassium permanganate 1:6000; acriflavine 1:4000; saturated boric acid, or one-fourth to one-half per cent acetic acid solution if urine is alkaline or stale. Each solution is enthusiastically used by many, and all of them are more or less efficacious. The prime essential in general is to lower the degree and amount of infection and to alleviate symptoms. I have found by experience—that general measures and vigorous local treatment in practically all cases are unavailing in the presence of obstruction and inadequate drainage in any part or portion of the genitourinary tract. Stricture, malposition and prostatic hypertrophy are the most prevalent factors in this respect.

Internally, the most valuable aid at the physician's command is flushing the system with fluids, in particular the forced intake of water. Too frequently this is neglected. The value of flushing the system with the resultant diuresis is more than comparable to that of internal urinary antiseptics combined with the instillations and irrigations used locally. It is a wise procedure to verify the quantity of fluid intake, as the patient's statement may be erroneous as to the amount actually taken.

With respect to the use of hexamethylenamin, a compression product of ammonia and formaldehyde, it should be emphasized that it is effective only in the presence of an acid urine, and should, therefore, never be prescribed with potassium citrate or any other alkali. It has been noted by Walker, that hexamethylenamin given in 5 grain doses at first, should be rapidly increased to 15 and 20 grains three times daily after the patient's tolerance has been determined. A powerful action for a short time is better than a feeble action spread over a long time. Undoubtedly the greatest value of hexamethylenamin is in the field of prophylaxis. The recent use of hexylresorcinol by Leonard, given internally in gradually increasing doses over an extended period of sixty to ninety days, has already proved to be of great value, particularly in staphylococcic infections of the urinary tract. Much more is to be anticipated from the use of this drug in the future.

Tuberculous Cystitis—It should be emphasized that vesical tuberculosis is practically always secondary to a renal or genital tuberculosis. Extensive and thorough investigations by Alcock have proved that in many cases where a genital tuberculosis is present with an apparently clear urinary tract, the primary focus is in the kidney. Casper, Fenwick and Caulk have described cases of primary tuberculosis of the bladder but such instances are very rare. Sooner or later after the development of tuberculous lesions of the bladder, a mixed infection usually with the colon bacillus, intervenes, resulting in the production of the clinical symptoms of tuberculous cystitis. In two recent cases of vesical tuberculosis of moderate degree, no complaint referable to the bladder whatsoever was made.

Experience has taught that in every case of chronic cystitis, regardless of the nature of the past history which is oftentimes misleading, tuberculosis should be suspected. A diagnosis of this condition, however, should not be made until the tubercle bacillus has been isolated. Therapeutic measures sometimes are misleading. By this I mean, that some cases of cystitis of unknown origin will react favorably and improve on the standard courses of treatment. After the lapse of time the symptoms recur and the patient drifts into other hands, when a diagnosis of tuberculosis is made. The detection of tubercle bacilli in the urine, positive guinea pig inoculations, negative urinary cultures and the cystoscopic findings make the diagnosis absolute.

The most satisfactory results in the treatment of a tuberculous cystitis are obtained by the removal of the kidney focus when the lesion is unilateral. In the presence of bilateral renal disease or of secondary genital processes, the treatment must be confined to general local therapy. Operative measures on the bladder itself in the management of tuberculous cystitis are usually unavailing.

The general measures involve a proper hygienic and dietetic regime together with equable climatic surroundings. It is remarkable what these general measures will at times accomplish in advanced renal and vesical tuberculosis. A recent case of bilateral active renal tuberculosis with moderate systemic reaction became quiescent with rigid application of the above measures alone.

The local treatment of tuberculous cystitis is that of an acute cystitis. Some of these patients have less pain and tenesmus if they are left alone. In others the treatment par excellence is instillation of a solution of 10 per cent protargin mild; recently a one-half per cent solution of mercurochrome has proved beneficial. Carbolic acid, first advocated by Rovsing, seems to produce marked sedative effect on the bladder. This is used in strengths of 1 to 200 to 1 to 50. A one per cent solution of eucalyptus in olive oil employed as a retained instillation gives manifest relief. One should be cautioned never to use silver nitrate in tuberculous cystitis, and irrigations in general should not be employed.

Cystitis in Youngsters—Everyone is familiar with the distressing symptoms of acute cystitis and pyelitis in female children. Oftentimes this is accompanied by local signs of redness and edema of the labia and vaginal mucosa, with a fairly profuse purulent discharge. Because of this, a diagnosis of gonorrheal vulvo-vaginitis is oftentimes made, in spite of the fact that no gonococci have been found. Treatment is instituted without a favorable result.

As recommended by Hirst and others, the proper treatment is astonishingly simple and equally effective. It consists of injections into the bladder, after the bladder has been drained, of 5 c.c. of a 10 per cent solution of silvol or neosilvol to be retained if possible. Retention of the solution is not necessary; however, if retained it greatly lessens the number of treatments required in order to secure a prompt and satisfactory result.

Congenital anomalies, foreign bodies, and chronic pyelonephritis, generally prove to be the deterrent factors in the delayed recovery of youngsters. The application of general measures such as the forced intake of water, the use of bicarbonate of soda to render the urine alkaline or ammonium chloride or acid sodium phosphate, with hexamethylenamin to render the urine acid are the essential aids known at the present time.

Cystitis with Stone—Such a condition may occur at any age and in either sex. With respect to primary stones, women are notably exempt. The two periods of life in which stones most frequently occur are the first two and the fifth decades. The latter period is by far the most important because of the frequency of prostatic obstruction with which vesical calculi are commonly associated.

I know of no train of symptoms which is absolutely diagnostic of stone in the bladder. Irregular frequency of urination associated with pain is suggestive, particularly if aggravated by exercise as in walking or lifting. Sudden interference with the urinary stream may be indicative of stone. When associated with the usual symptoms of cystitis, confusion may arise. It was on account of this that Nitze, the genius, many years ago devised and perfected the cystoscope.

Either general or local treatment of cystitis in the presence of stone is futile. The removal of the stone is the one effective treatment. The answer to the common question asked is—there are no solvent agents known at the present time which will cause dissolution of stones within the urinary tract. To flush the system with large quantities of liquid will deter but not prevent the formation of stone.

The immediate care of cystitis with stone in which pain, frequency and urgency exist—demands the unstinted use of opium and its derivatives. Rectal suppositories containing one-half to one and one-half grains of powdered opium, with one-fourth grain of the extract of belladonna leaves in a cocoa butter base are very effective. Bed rest is imperative. Liquids should be given freely by mouth for the main purpose of kidney protection. Any attempt to change the urinary reaction from an acid to an alkaline one or vice versa is simply a loss of time and effort.

CONCLUSION

1. Almost everyone suffers from bladder disturbances at some period of life.

2. Cystitis is a symptom complex and rarely a primary disease entity.

3. Successful management resolves itself into an early diagnosis dependent upon careful observation and examination of the patient.

4. The employment of local treatment rather than general treatment will aid to lower the percentage of diagnostic error.

5. Rest and relaxation, with local instillations are most effective in the presence of acute symptoms.

6. In chronic cystitis, the employment of irrigations without adequate drainage is a loss of time and effort.

7. Vesical tuberculosis is indicative of renal or genital tuberculosis or both.

8. Operative interference is the only effective treatment for stone, tuberculosis and obstruction.

9. The criterion of successful treatment of cystitis should be the physical characteristics of the urine rather than by amelioration of symptoms.

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Discussion

Dr. William Jepson, Sioux City—As has been pointed out by the essayist, very few individuals escape cystitis at some time from the cradle to the grave. Secondly, the symtom complex of cystitis too often misleads the practitioner who will not devote the time necessary to determine what the cause of the symptoms may be. There is one particular phase of this question I desire to emphasize, namely: As Dr. Hornaday has said, tuberculosis of the bladder per se very rarely, if ever, exists, and if it is said to exist without evidence of a primary renal tuberculosis the matter may well come into question. I personally know of individuals who have gone as high as five and six years with a renal tuberculosis and never have had any vesical evidence of the existence of the disease. Yesterday in coming down on the train I was speaking with a gentleman who, I know, fourteen years ago was passing tubercle bacilli in the urine and is doing so today, and who is apparently in good health. Any patient who comes to the physician complaining of frequent urination and where there is no marked pathology in the bladder itself as shown by pus, etc., must come under suspicion, especially if he is not relieved at night. In other words, patients with tuberculosis of the kidney get up and urinate every twenty or thirty minutes at night when they should be at rest, which is the opposite of the history which ordinarily exists where the condition is due to some involvement of the bladder. As pointed out by the essayist, a biological test to determine the presence of tubercle bacilli in a guinea-pig or other susceptible animal is probably the only way by which we can become positive relative to the condition present. Thirdly, I would raise a question on one point made by the essayist, namely: That all tubercular kidneys should become the subjects of operation. I admit that in practically nearly all the cases we see this statement would apply. But it does seem reasonable, although I have no way of proving it, that now and then a tubercular focus of the kidney should be susceptible of cure as well as when located any other place in the body. One other thought in connection with the real danger associated with tuberculosis of the kidney, and that is it may involve the bladder and ascend the ureter on the other side; it is a most deplorable condition in that it means death of the individual. In removing the involved kidney the bladder is often involved. I cannot say that my experience has been extremely large, yet it has been my misfortune to have altogether more cases of tuberculosis of the bladder than I have cared for, and it has been one of the most difficult conditions I have had to deal with. In my experience best results have come from the instillation of a solution of carbolic acid of one to thirty or forty; I generally use it quite strong and two or three times until the water comes away clear. Results from that method of treatment have been better than from any other plan of therapy I have employed.

Dr. B. L. Knight, Cedar Rapids—I had the honor at the University of discussing this matter with Dr. Hornaday, so I would like to discuss the subject for a moment here. Personally I know little of allergy cystitis, but last Monday evening I was much impressed to hear Dr. W. W. Duke of Kansas City make a statement which might be of much interest to you. In referring to the subject of allergy he made the statement that a great many cases go unrecognized and if of the bladder, are diagnosed as cystitis, but in which no pus or other pathology is found in connection with the urine, only a frequency of urination. Dr. Duke explains this as being due to an urticaria in the genitourinary tract or of the bladder, produced, as all other allergies that ever have been found, with foreign protein of some kind. Therefore in some of our cases of cystitis it is possible that by studying them a short time and finding out where the allergy is, we may succeed in curing them without any direct bladder medication.

END RESULTS IN SUBMUCOUS RESECTION*

C. E. Chenoweth, M.D., Mason City

I believe the submucous resection of the nasal septum has, without question, been considered the most satisfactory of all nasal operations by the majority of rhinologists.

During the past decade many articles have appeared in the literature considering this subject and several authors have given their personal experiences with this operation, yet no one, to my knowledge, has given the end results from the patient's standpoint.

It was with these facts in view and a desire to know whether the procedure merited the confidence we have in it that prompted me to choose this subject.

I had hoped to present a larger series of cases

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but owing to the fact that reports were rather difficult to obtain I have had to use as my basis for study seventy-five cases from whom we have received reports. These cases have been operated at the Park Hospital Clinic, by Dr. Howard Fallows or myself, during the past two years. Each history has been reviewed as to the patient's complaints on admission and a questionnaire mailed them asking the following questions:

1. Were the symptoms for which they came alleviated?
2. Can you breathe through your nose easily?
3. Does your nose trouble you now?
4. Did the operation affect your general health in any way?

In a majority of cases we have been able to have the patient return and ascertain the present condition ourselves.

It may be interesting to note first, the various complaints which brought these patients to see us.

Of these the one predominating symptom was "difficulty in breathing through the nose", which occurred in thirty-five or 46.6 per cent. Twenty-six or 34.6 per cent complained of headache, twenty or 26.6 per cent of frequent colds, fourteen or 18.6 per cent of nasal discharge, ten or 13.3 per cent of post-nasal discharge, nine or 12 per cent of defective hearing, nine or 12 per cent of nose stopping up, three or 4 per cent each of the following, discharging ears, sneezing and hay fever, two or 2.6 per cent of tinnitus and one or 1.4 per cent each of the following, eyes tear, dryness of nose, nervousness, feels faint in warm room, pains in back of the head, ears feel like bubbles in them, stuffiness of head, dizzy spells, asthmatic attacks, aching throat and pain in left side of face.

Examination of these individuals showed that in thirty-four or 45.3 per cent the deflection was to the right, thirty-three or 44 per cent had deflections to the left, and eight or 10.7 per cent had thickened septums.

Thirty-six or 48 per cent had spurs. Eight or 10.7 per cent were traumatic in origin.

Twenty-seven or 36 per cent of the cases had some nasal or other complication and these were divided as follows: Six or 8 per cent had chronic tonsillitis, five or 6.6 per cent had a maxillary sinus involvement, five or 6.6 per cent had polypoid middle turbinates, four or 5.3 per cent had adhesions, two or 2.6 per cent each of the following, ethmoiditis, frontal sinusitis and sphenoidal sinusitis; one or 1.3 per cent each of the following: pansinusitis, left, adenoids and perforation of the septum due to a previous operation.

In the treatment of these cases fifty-eight or 77.4 per cent had only the submucous resection done. Seventeen or 27.6 per cent were operated at an earlier date or at the same time for the following conditions. Chronic tonsillitis four cases, two of which had been done previously and two being secondary tonsil operations were done at the time of operation, a procedure which we rarely follow. One radical antrum, two bilateral antro-meatals and one drainage of all sinuses on the left had been done previously. Two sphenoids were drained, two middle turbinates removed, three anterior third of middle turbinate removed and one adenoidectomy were done at the time of operation.

I shall not go into the technic of this operation as it is familiar to all. Following the operation we hold the flaps by a metal splint devised by Dr. H. E. Binger of St. Paul, which in our hands has proven more satisfactory than packing or the use of Simpson's intra-nasal tampoons. This is removed in twenty-four hours and the patient allowed to return home using only an astringent nasal ointment. Aside from returning for observation no other after treatment is carried out unless complications arise.

In considering the results we shall first give them from the anatomical standpoint. Sixty-three or 84 per cent had septums that were straight, eleven or 14.7 per cent had good space but the septums showed either some deviation or spur that was not removed as is shown in the accompanying table. In one or 1.3 per cent of the cases the septum looked much the same as before operation although it could be pushed from side to side. Six or 8 per cent showed perforations, one of which has caused the patient a little annoyance. This percentage seems rather high and could we have included all of our cases it would have at least been cut in two, however, it has been our desire to state the facts as they are for it is only by so doing that we may arrive at an honest conclusion. Five of these occurred at the time of operation and were in difficult cases. One of them occurred three weeks following the operation, due, I believe, to a frontal sinus draining and infecting the wound.

Now as to the result from the patient's standpoint. I will take these up in the order as given under complaints. Of those who had difficulty in breathing through the nose twenty-nine or 82.9 per cent were cured, six or 17.1 per cent were improved and report that they breathe easily part of the time. Twenty or 77 per cent of those having headache were cured, three or 11.5 per cent were improved, that is the headaches were less severe and not as frequent, and three or 11.5 per cent were not helped. Ten or 50 per cent of those with frequent colds were cured, eight or

40 per cent were improved and two or 10 per cent were no better. One or 10 per cent of those having post-nasal discharge was cured, four or 40 per cent were improved, one or 10 per cent was helped some and four or 40 per cent were no better. Seven or 77.7 per cent of those having defective hearing were no better, two or 22.3 per cent thought they were helped slightly. Five or 55.5 per cent of those having their nose stop up were cured, three or 33.3 per cent were improved and one or 11.2 per cent was no better. Two or 66.6 per cent of those with discharging ears were cured, one or 33.4 per cent was improved in one ear and the other remained as before operation. Three or 100 per cent of those with hay fever were not helped. Three or 100 per cent of those complaining of sneezing were cured. Two or 100 per cent of those complaining of tinnitus were not helped. One thought it was made worse.

One each of the following complaints was cured, eyes tear, feels faint in warm room, pains in back of the head, dizzy spells, aching throat and pain in the left side of face. Two, one complaining of stuffiness of the head and the other of asthmatic attacks were improved. One each of the following complaints was no better, dryness of nose, nervousness and ears feel like bubbles in them.

In answer to the question regarding their ability to breathe easily through their nose, seventy-one or 94.7 per cent could while four or 5.3 per cent still have some difficulty. Twenty-two or 30 per cent still have some nasal symptoms which are shown in accompanying chart.

As regarding the effect upon their general health many of the patients apparently did not understand although twenty-six or 34.7 per cent reported an improvement.

Conclusions

(1) Fifty-five and one-tenth per cent of all symptoms were cured, 23.4 per cent were improved and 21.5 per cent were no better, thus giving us definite results in 78.5 per cent of our cases.

(2) Of those having only the submucous resection 77.6 per cent were cured and of those having had other operations either before or at the same time 76.4 per cent were cured.

(3) Comparing the result from the anatomical view and from the patient's view we see that 8 per cent of those classified anatomically as improved are classified by patients as cured while 13.5 per cent of those classified anatomically as excellent results were from the patient's viewpoint unimproved.

(4) It would seem that by further classification and study we might be able to so select our cases that a higher percentage of cures could be obtained.

(5) I believe from my study that we can confirm the statement that the submucous resection is the most satisfactory of all nasal operations.

Case No.	Symptoms	Findings	Operation	Anatomical Result	Patient's Result
1.	Difficulty in breathing through nose.	Septum deflected to left. (Traumatic.)	Submucous.	Septum straight.	Breathes easily through nose.
2.	Difficulty in breathing through nose. Sneezing.	Septum deflected to left with spur.	Submucous.	Septum straight.	Breathes easily through nose.
3.	Difficulty in breathing through nose. Sneezing. Eyes tear.	Septum deflected to left with adhesions to middle turbinate. (Traumatic.)	Submucous.	Septum straight.	Breathes fine, cured sneezing and tearing. Has gained 26 lbs. and feels much better.
4.	Difficulty in breathing through nose.	Septum deflected to right with adhesion to inferior turbinate. (Traumatic.) Recurring tonsils.	Submucous. Tonsillectomy.	Septum straight.	Breathes easily through nose. Has frequent nose bleeds.
5.	Difficulty in breathing through right side of nose. Post-nasal discharge.	Septum deflected to right with spur.	Submucous.	Septum straight.	Breathes easily most of the time. Helped post-nasal discharge some. Thinks he has catarhal condition.
6.	Difficulty in breathing through nose. Repeated colds.	Septum deflected to right with spur.	Submucous.	Septum slightly deflected to left, high up. Has good space.	Breathes easily through nose. One cold all winter. Thinks general health improved.
7.	Difficulty in breathing through left side of nose. Post-nasal discharge. Frequent colds. Hay fever.	Septum deflected to left with spur.	Submucous.	Septum straight.	Breathes easily through nose. No discharge. No colds since operation. Hay fever still present.
8.	Difficulty in breathing through nose. Post-nasal discharge.	Septum deflected to left with spur. (Traumatic.)	Submucous.	Septum straight.	Breathes easily through nose. Post-nasal discharge no better.
9.	Difficulty in breathing through nose. Frequent colds. Nasal discharge.	Septum deflected to left. (Traumatic.)	Submucous.	Septum straight.	Breathes easily through nose. Does not catch cold easily. Discharge better. General health improved.

Case No.	Symptoms	Findings	Operation	Anatomical Result	Patient's Result
10.	Difficulty in breathing through nose. Dryness of nose. Headache.	Septum deflected to left with spur.	Submucous.	Septum straight.	Breathes easily through nose. No headache. Feels better generally. Still has dryness of nose.
11.	Difficulty in breathing through nose. Frequent colds.	Septum deflected to left with spur. Bilateral Highmorian sinusitis.	Submucous.	Septum straight.	Breathes easily through nose. Has discharge from nose as before. (Been advised as to Antra.)
12.	Difficulty in breathing through nose. Frequent colds.	Septum deflected to right. Polypoid middle turbinate, right.	Submucous. Turbinectomy.	Septum straight.	Breathes easily through nose. No discharge. General health improved.
13.	Difficulty in breathing through nose. Postnasal discharge.	Septum deflected to left with spur.	Submucous.	Septum straight.	Breathes well most of the time. Stuffy sometimes. Still has Postnasal discharge. General health much better.
14.	Difficulty in breathing through nose. Defective hearing. Tinnitus.	Septum deflected to left with spur.	Submucous.	Septum straight.	Breathes easily through nose. Did not help ears. Thinks Tinnitus worse.
15.	Difficulty in breathing through nose.	Septum deflected to right with spur.	Submucous.	Septum straight. Ulcer left side.	Breathes easily through nose. No trouble now except occasional nose bleed.
16.	Difficulty in breathing through nose. Nervousness.	Septum deflected to left. Perforation in lower central part due to previous operation.	Submucous.	Septum straight. Perforation still present.	Breathes easily through nose. Did not help nervousness. Has some Post-nasal discharge now.
17.	Difficulty in breathing through nose. Headache. Frequent colds.	Septum deflected to right with spur.	Submucous.	Septum straight.	Helped headache. Not as frequent and thinks may be due to eyes. Nose stops up at times. Feels rested in morning and did not before operation. Colds better.
18.	Difficulty in breathing through nose.	Septum deflected to left with spur.	Submucous.	Septum quite straight. Perforation in lower anterior portion.	Does not think he breathes as well as he should. Nose bothers sometimes.
19.	Difficulty in breathing through right side of nose. Feels faint in warm room.	Septum deflected to right.	Submucous.	Slight deflection of anterior and of cartilage to right. Rest straight.	Breathes easily through nose. Does not feel faint. Says voice is much clearer and general health better.
20.	Difficulty in breathing through nose. Frequent colds.	Thickened septum.	Submucous.	Septum straight.	Breathes easily through nose. Colds less.
21.	Difficulty in breathing through nose, especially right side. Pains in back of head.	Septum deflected to right touching turbinates. Maxillary sinusitis; left.	Submucous. Irrigation of antrum.	Septum straight in upper part. Thickened at base.	Breathes easily through nose. Pain better. General health improved.
22.	Difficulty in breathing through nose. Nasal discharge. Headache. Sneezing.	Septum deflected to right with Adenoids.	Submucous. Adenoidectomy.	Septum straight. Slight thickening at base on right.	Breathes easily through nose. Headache better. No sneezing. Can work in dust now and could not before. Discharges better.
23.	Difficulty in breathing through nose. Nasal discharge. Hay fever.	Thickened septum. Spur, right.	Submucous.	Septum straight.	Breathes easily through nose. Still has Hay fever.
24.	Difficulty in breathing through left side of nose. Frequent colds.	Septum deflected to left. Left middle turbinate appeared polypoid.	Submucous.	Septum straight. Large perforation anteriorly. Turbinate appears normal color.	Breathes easily through nose. Does not have as many colds. General health better. Not bothered much with crusting.
25.	Difficulty in breathing through nose. Postnasal discharge. Ears feel like bubbles in them.	Septum deflected to left with spurs. Eustacheitis.	Submucous.	Septum straight. Ulcer left side.	Breathes fairly well. Nose stops up at times. Ears still bubble. Discharge still present.
26.	Difficulty in breathing through nose.	Septum deflected to right with spur. (Traumatic.)	Submucous.	Septum straight, turbinates, left, swollen.	Breathes easily through nose. Stops up on one side at times.
27.	Difficulty in breathing through nose.	Septum deflected to right with spur. (Traumatic.)	Submucous.	Septum straight. Turbinates swollen.	Breathes easily through nose. Nose stops up at times, first on one and then on the other. Feels much better generally.
28.	Difficulty in breathing through nose. Headache. Nasal discharge.	Septum deflected to left. Chronic tonsillitis.	Submucous.	Septum straight.	Breathes easily through nose. No discharge. Headache better. General health much improved.
29.	Difficulty in breathing through nose.	Septum deflected to right.	Submucous.	Septum straight. Turbinates swollen.	Breathes easily through nose.
30.	Difficulty in breathing through nose. Frequent colds.	Septum deflected to right. (Traumatic.)	Submucous.	Septum straight.	Breathes easily through nose. Rare cold. General health better.

Case No.	Symptoms	Findings	Operation	Anatomical Result	Patient's Result
31.	Difficulty in breathing through nose. Nasal and Post-nasal discharge.	Septum deflected to left. Ethmoiditis, bilateral.	Submucous.	Septum straight. Ethmoiditis less marked.	Breathes easily through nose. Discharge lessened considerable. General health same.
32.	Difficulty in breathing through nose. Headache.	Septum deflected to left.	Submucous.	Septum straight.	Breathes easily through nose. Headache cured.
33.	Difficulty in breathing through nose.	Septum deflected to left, with spur. Adhesion to left inferior turbinate.	Submucous.	Septum straight. Left turbinates slightly swollen.	Breathes much better. Can sleep without nose stopping up and could not before operation.
34.	Difficulty in breathing through nose. Nose stops up.	Septum deflected to left.	Submucous.	Septum straight.	Breathes easily through nose. No trouble now.
35.	Headache. Stuffiness of head. Post-nasal discharge.	Septum deflected to right with spur.	Submucous.	Septum straight.	Stuffiness of head some better. Has it at times. Discharge some better. Headache no better.
36.	Headache.	Septum deflected to right with spur.	Submucous.	Septum straight.	Headache cured.
37.	Headache. Discharge from nose.	Septum deflected to left. Sphenoiditis, bilateral.	Submucous. Sphenoidis-drained.	Septum slightly deflected to right high up	Headache better. Discharge less.
38.	Headache. Nasal discharge. Ear trouble.	Septum deflected to left. Polypoid middle turbinate right (Ethmoids previously operated.) Chronic Catarrhal Otitis Media.	Submucous. Turbinectomy, right.	Septum straight. Perforation in lower anterior part.	Headache better. Discharge less.
39.	Headache. Dizzy spells.	Septum deflected to right. Polypoid middle turbinate.	Submucous.	Septum straight.	Headache better. No dizziness. Much better generally.
40.	Headache. Frequent colds.	Septum deflected to right with spur.	Submucous.	Septum straight. Turbinates slightly atrophic.	Headache cured. Has not had cold since operation. Thinks general health better.
41.	Headache. Nasal discharge. Nose stops up.	Thickened septum. Polypoid middle turbinate.	Submucous. Turbinectomy.	Septum straight.	Headache better. Less discharge. Nose does not stop up even when has a cold.
42.	Headache.	Septum deflected to right. Preceding Pansinusitis, left.	Submucous. (Sinuses, left previously operated.)	Septum straight. Perforated in anterior part.	Headache better. Nose stops up at times.
43.	Headache. Nose stops up.	Septum deflected to right.	Submucous.	Septum straight.	Headache cured. Breathes easily.
44.	Headache.	Septum deflected to right.	Submucous.	Septum straight.	Headache cured. Gained 14 lbs. Feels better generally.
45.	Headache.	Septum deflected to left with spur.	Submucous.	Septum straight.	Headache better but has one occasionally.
46.	Headache.	Septum deflected to right with spur.	Submucous.	Septum straight.	Headache cured. Feels much better generally.
47.	Headache.	Septum deflected to left.	Submucous.	Septum straight.	Headache less severe. Feels better and has more ambition than before operation. Has gained 15 lbs.
48.	Headache. Nasal discharge.	Septum deflected to left with spur. Subacute frontal sinusitis, left.	Submucous. Anterior end left middle turbinate removed.	Septum straight.	Headache cured. No discharge. Has gained in weight. Feels better and can work without always feeling tired.
49.	Headache. Worse with colds and in damp weather.	Septum deflected to right. Chronic Highmorian Empyema, left.	Submucous. Had radical antrum previously.	Septum appears same as before operation. Can push it over with proble. Vasomotor Rhinitis.	Headache still present. Nose stops up.
50.	Headache. Frequent colds.	Thickened septum with spur. Maxillary sinusitis, bilateral.	Submucous. Bilateral Antro-Meatal.	Septum straight.	Headache still present. Some discharge from nose.
51.	Headache. Frequent colds.	Thickened septum. Spur left.	Submucous.	Septum straight.	Headache better. Seldom has cold. General health better.
52.	Headache. Asthmatic like attacks.	Septum deflected to left pressing against turbinates. Sphenoidal empyema. Diag. at time of operation.	Submucous. Sphenoid drained.	Septum straight.	Headache better. One asthmatic attack since operation, 8 months ago. General health better.
53.	Headache. Discharge.	Septum deflected to right. Subacute frontal sinusitis, right.	Submucous. Anterior end of right middle turbinate removed.	Septum straight. Perforation in Anterior part. (Occurred 3rd. week after operation.)	Headache better. No discharge. Very little crusting.

Case No.	Symptoms	Findings	Operation	Anatomical Result	Patient's Result
54.	Headache. Frequent colds.	Septum deflected to right.	Submucous.	Septum straight. Perforation anteriorly.	Headache better. Colds less. No sinus trouble this winter.
55.	Headache. Frequent colds.	Septum deflected to right. Chronic Maxillary Sinusitis.	Submucous. Previous Antro-meatal.	Septum straight. Antra appear clearer.	Headache better. Colds less.
56.	Frequent colds. Nose stops up.	Septum deflected to left.	Submucous.	Septum straight.	Breathes easily through nose. Nose stops up at night of late. Still has frequent colds, and sore throat.
57.	Frequent colds.	Septum deflected to right with spur.	Submucous.	Septum bulging slightly to right high up. Rest straight.	Colds less severe and nose not blocked with them. Has not had any sinus trouble.
58.	Frequent colds. Nose stops up. Post-nasal discharge.	Septum deflected to left.	Submucous.	Septum straight. Turbinates swollen.	Nose still stops up but not as much as before. Discharge still present.
59.	Frequent colds. Discharging ears.	Septum deflected to left. Chronic Tonsillitis.	Submucous. Tonsillectomy previously done.	Septum straight.	No colds. Ears dry since a short time after operation. General health better.
60.	Frequent colds. Discharging ears.	Septum deflected to right with spur.	Submucous.	Septum still deflected to right though less marked.	Right ear dry most of time. Left no change. Colds better.
61.	Frequent colds. Nose stops up.	Septum deflected to right.	Submucous.	Septum still slightly to right. Good space.	Breathes easily. Colds less frequent. General health better.
62.	Nasal discharge. Nose stops up.	Septum deflected to right with spur. Ethmoiditis, bilateral.	Submucous. Anterior end of middle turbinates removed.	Septum straight. Has had Ethmoidectomy since.	Unimproved.
63.	Nasal discharge.	Septum deflected to left with spur.	Submucous.	Septum straight.	Discharge much better. Feels better generally. Breathes easily through nose.
64.	Nasal discharge. Nose stops up. Ear trouble.	Septum deflected to right with spur. Chronic dry Catarrh middle ears.	Submucous.	Septum straight, except for slight bulge of anterior cartilage to right.	Breathes easily through nose, part of the time. Less discharge from nose. Ears not improved.
65.	Nasal discharge. Post-nasal discharge. Ear trouble.	Thickened septum with spur. Beginning Dry Catarrh Middle Ears.	Submucous.	Septum straight. Turbinates left swollen.	Discharge about same. Can clear nose better. Right side does not bother. Left stops up. Ears same—no better.
66.	Defective hearing.	Septum deflected to right with spur. Chronic dry Catarrh Middle Ears.	Submucous.	Septum straight.	Has helped ears very slightly.
67.	Defective hearing.	Septum deflected to left with spur. Chronic dry Catarrh Middle Ears.	Submucous.	Septum straight. Turbinates swollen.	Helped ears some. Does not breathe as well as should. General health better.
68.	Defective hearing. Aching throat.	Septum deflected to right with spur. Chronic dry Catarrh Middle Ears.	Submucous.	Septum straight.	Deafness has not progressed. Throat stopped aching. One side of nose stops up.
69.	Deafness. Tinnitus.	Septum deflected to right. Chronic Dry Catarrh Middle Ears.	Submucous.	Septum straight.	Deafness about same. Tinnitus at times.
70.	Deafness.	Septum deflected to left. Chronic Dry Catarrh Middle Ears.	Submucous.	Septum straight.	Deafness has not progressed. No better.
71.	Discharging ear, rt.	Septum deflected to right. Chronic tonsillitis. Chronic Otorrhea right.	Submucous. Tonsillectomy.	Septum straight.	Ear dry.
72.	Nose stops up. Post-nasal discharge.	Thickened Septum Chronic Tonsillitis.	Submucous. Tonsillectomy done first.	Septum straight.	Breathes easily through nose. Discharge better. Feels better generally.
73.	Hay fever.	Septum deflected to right.	Submucous.	Septum still slightly deflected to right.	No better.
74.	Sneezing.	Thickened septum.	Submucous.	Septum straight.	Cured sneezing. Breathes easily through nose. No trouble now.
75.	Pain in left side of face.	Septum deflected to left with spur. Adhesion to left.	Submucous.	Septum straight.	Cured.

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DIAGNOSIS AND TREATMENT OF GALL-BLADDER DISEASE—MEDICAL ASPECTS*

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General Considerations

In the majority of cases of gall-stones or of other diseases of the gall-bladder, the symptoms are so typical that the diagnosis is easily made. In some instances, on the other hand, the history and the physical findings are so atypical that it is very difficult to arrive at a definite conclusion. In these cases, in order to establish the diagnosis, it may be necessary to observe the patient over a long period of time, and to make extensive laboratory and x-ray investigations.

In cases of gall-bladder disease, a careful history is of prime importance. The age, sex and occupation of the individual should be carefully considered, and it is also important to secure a detailed chronological account of the patient's symptoms. It is important to inquire whether or not there have been attacks of acute indigestion or of so-called "ptomaine" poisoning, and in particular whether or not these attacks have been followed by jaundice. The incidence of gall-stones is most frequent after the age of forty; they occur more frequently in the female sex and in individuals whose occupation is of a sedentary character. Other predisposing factors are pregnancy and obesity. It is very interesting to note how frequently the first attack of gall-stone colic occurs either during pregnancy or a short time after parturition. Typhoid fever also is a predisposing factor in the causation of gall-stones. Barker has reported one case in which cultures of typhoid bacilli were obtained from the central portion of a gall-stone removed at operation thirty-seven years after an attack of typhoid fever.

The physical examination should include not only an investigation of the abdomen, but also a complete general and neurological examination, the latter being particularly important in order to exclude those cases of gastric crises which are so often mistaken for gall-bladder disease. In examining the abdomen, it is important first to palpate very lightly in order to determine slight differences in resistance, especially in the upper portion of the rectus muscle on the right side. Deep pressure should then be made, pressing rather firmly over the region of the gall-bladder and pressing the fingers upward beneath the ribs while the patient takes a deep inspiration. At the same time the opposite hand should exert pressure posteriorly in the right costo-vertebral angle. The vertical percussion method of Murphy may also be useful, and in some instances definite tenderness can be elicited by sudden pressure over the ribs in the region of the gall-bladder or by striking the upper portion of the rectus muscle with the ulnar portion of the hand and comparing the sensations which the patient experiences with those produced by a similar act on the opposite side. After an attack of pain in the upper abdomen the urine should always be examined for bile pigment.

An x-ray examination of the gastrointestinal tract should be made for the purpose of excluding the presence of an ulcer of the stomach or duodenum. At the present time the roentgenologist is able to demonstrate gall-stones in from 50 to 75 per cent of the cases in which they are later found at operation. The proportion of correct diagnoses from the x-ray films depends in large measure of course upon the technical skill of the roentgenologist and upon his experience in the interpretation of the films. Indirect evidence of disease of the gall-bladder may also be shown on the roentgenograms. Thus an enlarged gall-bladder may produce an indentation of the shadows of the duodenum or the duodenum may be displaced upwards to the right, as the result of adhesions between the pyloric end of the stomach and the gall-bladder itself. It is sometimes possible, also, to demonstrate adhesions between the colon and the gall-bladder. A method of visualization of the gall-bladder by means of the intravenous injection of tetrabromophenolphthalein has been described recently by Graham. It is too early as yet to determine the value of this method in the diagnosis of gall-bladder disease.

It has been mentioned by many observers, notably by Kerr, that among individuals who have gall-stones only one in twenty complain of the symptoms. These statistics are based upon autopsy findings, and it is very probable, that in many of the cases in which gall-stones have been found at autopsy, the physician who took the history made no attempt to elicit symptoms of gall-stones, for it is very doubtful if many individuals who have gall-stones go through life without having some very definite symptoms. In fact I think one might say that "innocent gall-stones" are a myth. Many patients with so-called "innocent gall-stones" complain of a group of symptoms which may be classified under the heading of gall-bladder dyspepsia. These patients complain of more or less fullness in the epigastrium, sometimes of the belching of sour material and of a sensation of distress or hunger two or three hours

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after meals. They may have attacks of slight fever accompanied by jaundice and in some cases are distressed by a sensation of chilliness. At other times they may have more or less nausea and vomiting. If these patients are examined carefully from time to time, definite tenderness can be made out in the region of the gall-bladder, and sometimes bile pigment may be found in the urine. It is in these indefinite cases of gall-bladder dyspepsia that the x-ray may often disclose the cause of the trouble. It is obvious, however, from the general symptoms of the so-called "gall-bladder dyspepsia" that it is often difficult to distinguish the cases in which the symptoms are really due to gall-bladder disease from those in which they are caused by duodenal ulcer or by chronic appendicitis or by chronic colitis. It is in these cases that prolonged observation and thoughtful study of the patient are often essential in order to clear up the diagnosis. The symptoms of gall-bladder disease may be simulated by ptosis of the stomach or intestines. In some cases in which the ptosis causes an actual kinking of the cystic or common duct, the difficulty of establishing the primary cause of the symptoms is especially difficult.

Biliary Colic—In cases of gall-stone colic the pain is felt, as a rule, in the epigastrium, somewhat to the right of the median line or directly over the gall-bladder. It is often referred downwards towards the umbilicus and sometimes to the back, to the right shoulder or even to the neck. The pain is severe and knife-like in character and is usually so intense that the patient calls for immediate relief. There are cases, however, in which the pain is not felt in the so-called gall-bladder area, but as in some cases that I have recently seen, may be referred to the left side. In these cases after the attack of gall-stone colic has passed, the area of tenderness of the skin may be definitely located in the left hypochondrium and pressure over the gall-bladder may elicit pain on the left side. In the ordinary cases of gall-bladder colic, the pain passes off after a few hours, especially if a sedative has been given, but for the next two or three days there is more or less tenderness in the right hypochondrium. There may also be hyperesthesia of the skin over the region of the gall-bladder with a so-called head-zone of cutaneous hyperesthesia. Occasionally the pain is referred upwards to the chest so as to simulate an attack of angina pectoris. I have seen a number of instances of this kind, in which at the time of the attack it was almost impossible to differentiate between gall-stone colic and angina pectoris. In cases of angina, however, the history shows that the pain was brought on by exertion or that the patient was previously short of breath on exertion and there may also be evidence of arterial and myocardial degeneration.

DIFFERENTIAL DIAGNOSIS

In establishing the differential diagnosis of biliary colic the following conditions must be considered:

1. Renal colic with Dietl's crisis; and pyelitis.
2. Acute pancreatitis.
3. Diaphragmatic pleurisy.
4. Angina pectoris.
5. Abdominal angina associated with abdominal arteriosclerosis.
6. Pericarditis.
7. Epigastric hernia.
8. Lead colic.
9. Herpes zoster.
10. The gastric crises of tabes.

Renal Colic—In renal colic the pain is first felt in the lumbar region and is referred downwards along the line of the ureter to the testicle on the right side, sometimes to the end of the penis, or to the upper portion of the thigh following the distribution of the ileo inguinal nerve. It is extremely severe and if the urine is examined shortly after an attack, red blood cells are nearly always to be found. In cases of Dietl's crisis the location and distribution of the pain is the same as in renal colic and is caused by the kinking of the ureter with resultant hydronephrosis. The same also is true of the pain in pyelitis. In the majority of patients, however, the latter condition is associated with a high temperature and with irritability of the bladder.

Acute Pancreatitis—Acute pancreatitis gives rise to very severe pain in the upper portion of the abdomen but is not referred to the same areas as either renal or biliary colic. It is associated with very severe nausea and vomiting, and with a temperature which rapidly rises to 103 or 104. The patient is extremely ill and very soon shows evidences of collapse with pallor and a rapid thready pulse. These cases usually run a rapidly fatal course, the patient dying within two or three days. The disease is associated with jaundice because the swelling of the pancreas causes compression of the bile duct. In a large proportion of the cases of acute pancreatitis an operation is performed, the surgeon thinking that he is dealing with some acute condition of the gall-bladder. The principal points of differentiation are the severity of the symptoms and the high temperature which are usually much more marked than in cases of acute cholecystitis.

Diaphragmatic Pleurisy—The pain in diaphragmatic pleurisy is often referred to the up-

per abdomen. It is increased upon taking a deep inspiration, and the examination of the chest will often reveal a friction rub along the line of the attachment of the diaphragm. As in gall-stone colic, the pain is often referred to the right shoulder or to the neck. However, in diaphragmatic pleurisy pressure over the lower portion of the chest or the upper portion of the abdomen usually gives relief, in contrast to acute cholecystitis, in which pressure intensifies the pain. Diaphragmatic pleurisy is often associated with pneumonia so that areas of consolidation may be found at the base of the lungs on the affected side. Moreover, in diaphragmatic pleurisy the temperature usually rises rapidly and there is a marked leucocytosis.

Angina Pectoris: Abdominal Angina—As mentioned above, it is often very difficult to distinguish certain cases of angina from gall-stone colic. This is particularly true of cases of so-called "angina abdominalis" associated with arteriosclerosis of the abdominal vessels. It is true that in many cases of angina the pain is referred to the epigastrium but angina may be differentiated from biliary colic by the fact that the patient presents a history of symptoms which suggest cardiac disease—such as shortness of breath on exertion in particular. In most cases of angina the pain is referred down the arms and the sensitive areas of the skin, which are afterwards found, are in the region of the precordium rather than in the epigastric region. Even with these points of differentiation, however, it is not always easy to decide which condition is present, and a great many patients have been doomed to invalidism or have been given a serious prognosis, under the assumption that angina was present when an operation for the removal of gall-stones would have cleared up all of the symptoms. In every doubtful case of angina therefore, it is important to examine the urine carefully after an attack to see whether or not bile pigment is present. In the majority of cases it is important also to make a careful x-ray study of the gastro-intestinal tract – including the gall-bladder, in order to exclude the possibility of gall-stones.

Pericarditis—I have seen cases of acute pericarditis in which the pain was referred downward to the epigastrium, and definite tenderness was felt over the gall-bladder. However, in examining the hearts of these patients, a definite pericardial friction rub can nearly always be made out in the second and third inter-spaces to the left of the sternum. Furthermore, in every case of pericarditis there is more or less difficulty in breathing; the patient is more comfortable propped up with pillows, he nearly always shows a temperature ranging between 101 and 103 and in many instances there are signs of dilatation of the heart. Furthermore, in the majority of cases of pericarditis there is a history of previous attacks of rheumatism or there is evidence of a coexistent rheumatic arthritis.

Epigastric Hernia—In cases of acute and chronic pain in the upper abdomen, it is always important to consider the possibility that it may be caused by epigastric hernia. Epigastric herniæ usually occur slightly to one side of the middle line, at the point where the blood-vessels emerge through the rectus muscle. They are often very tender, and can be quite readily reduced, the reduction of the large herniæ often producing a sound like that of splashing water. Sometimes, injury causes them to become very much inflamed so that operation becomes necessary. At other times, they may become incarcerated and produce very severe pain. The symptoms due to epigastric hernia are very similar to the ordinary symptoms of gastric hyperacidity. The pain is nearly always aggravated by the patient's bending backward. I have seen a number of these patients who have been operated upon for appendicitis or for gall-bladder disease, the true condition not being discovered.

Lead Colic—Lead colic often produces very severe pain—particularly in the upper abdomen, so that the condition is sometimes mistaken for gall-stones. A history of an occupation involving exposure to lead; the observation of the so-called "lead line" on the gums; the presence of anemia associated with basophilic stippling of the red cells and occasionally nucleated red corpuscles will all help to establish the correct diagnosis.

Herpes Zoster—Recently I saw a case in which the patient was advised to have an operation for gall-stones because of the severe pain in the upper right side of the abdomen from which he had been suffering for two days—pain so severe that he had to be given morphin; but on the third day a very definite eruption of herpes zoster manifested itself. The pain in herpes zoster is of course not as severe as in cases of gall-stone colic, and yet it may be so troublesome that the patient demands sedatives for relief. It would appear important, therefore, in cases of localized pain in the upper portion of the abdomen, particularly if the pain occurs in the back as well as in front to consider the possibility of herpes zoster.

Gastric Crises of Tabes—Every physician has seen many cases of tabes associated with very severe pain in the upper part of the abdomen, with nausea, and severe vomiting, these symptoms almost compelling him to believe that he is dealing

with a case of gall-stone colic. It is for this reason that at the outset I urge the importance of a complete neurological examination in all doubtful cases. The finding of fixed pupils, inactive to light—with irregular margins and very often eccentrically placed, the absence of knee jerks, the presence of the Rhomberg sign, the characteristic findings in the spinal fluid and positive Wassermann; all of these features will serve to differentiate the gastric crises of tabes from an acute gall-bladder disease.

There is another group of cases which may give rise to difficulty in establishing the differential diagnosis, and that is those cases in which the gall-stone has become lodged in the common bile duct, in the ampulla of Vater. These patients will have chills, fever and intermittent jaundice, so-called Charcot's hepatic intermittent fever. I have seen such cases in which the diagnosis of malaria had been made; and others in which the diagnosis of septic endocarditis was made, because of the persistence of the chills and fever and the presence of intermittent jaundice. It is important to bear this possibility in mind. The patient, however, will nearly always give the history of gall-stone colic associated with jaundice previous to the development of the chills and fever. If this possibility is kept in mind, there is usually very little difficulty in establishing the diagnosis. In malaria and in septic endocarditis, although the patient may be sallow and have a slight yellow tinge, he never has the deep jaundice which is characteristic of certain periods in which the gall-stone is impacted in the common bile duct.

TREATMENT

Surgical Treatment—In discussing the treatment of diseases of the gall-bladder I shall not discuss at length the differentiation between conditions which require surgical treatment and those in which medical treatment is indicated. Briefly it may be stated that the indications for surgical operation in diseases of the gall-bladder are:

1. Acute suppurative cholecystitis.
2. Perforation of the gall-bladder.
3. Chronic distention of the gall-bladder (so-called "hydrops" such as occurs in cases in which the cystic duct is blocked by gall-stones).
4. Obstruction of the common duct from stone—particularly in cases of Charcot's hepatic intermittent fever.
5. Persistent dyspepsia with signs of gall-bladder disease unrelieved by medical treatment.
6. Persistently recurring gall-stone colic.

In my opinion, surgical intervention is not indicated in the ordinary cases of acute catarrhal cholecystitis or the ordinary case of gall-stone colic, in which there has been only one, or at most two attacks—not very severe. It is in the persistent cases that I feel that an operation is very necessary. It is important for the internist to recognize this because if gall-stones are left untreated, or if a chronic cholecystitis is allowed to go on too long, many complications occur which may mean chronic invalidism later. In cases of persistent gall-bladder disease, associated with gall-stones, if no treatment is given, secondary changes may take place in the liver and in the pancreas, so that even after operation is performed convalescence is very slow and often very unsatisfactory. Unfortunately, operations for diseases of the gall-bladder have not yet reached such a state of perfection that cures are obtained in every case. I think that one can safely say that 25 per cent of gall-bladder operations give more or less unsatisfactory results. In some cases the patient may complain of the same gastric or other symptoms that he had before operation, while in other instances definite adhesions may form about the site of the operation so that the patient will have recurring attacks of pain, associated with slight jaundice and distress in the region of the gall-bladder. Sometimes, too, these attacks are accompanied by fever. In other instances failure is due to injury of the duct at the time of operation, or it may be that all of the gall-stones were not removed so that later a small stone may cause obstruction of the common duct. After a cholecystectomy the common duct dilates very rapidly so that in the course of two or four weeks it may be found to have enlarged to four or five times its normal size. The question naturally occurs whether in this dilated duct gall-stones are much more likely to form than they were in the normal duct. I do not believe that this is the case for the reason that concentration of bile does not occur in the dilated duct.

Treatment of Acute Catarrhal Cholecystitis—Acute catarrhal cholecystitis is not uncommonly seen in cases of infection—being particularly associated with typhoid fever. Operation is very seldom necessary in these cases. In the ordinary cases of acute catarrhal cholecystitis the patient should be placed on a very restricted diet—consisting largely of skim-milk, cereals and fruit juices. Continuous hot applications are essential for the comfort of the patient. If the pain is severe, codein or even morphine may be given for its relief. If vomiting is persistent all food should be withdrawn and an alkaline water should be given freely. The vomiting is sometimes relieved by giving the patient from three to five drops of

chloroform with shaved ice. This may be repeated every two or three hours. The pain and temperature usually subside in from two to three days, when the diet can be gradually increased, toast, rice, custard, baked potato and other easily digested food being added. One naturally questions in these cases whether or not hexamethylenamin should be given. Personally I do not believe that this is of any particular value because it is not excreted into the bile.

Operation is not necessary unless the gall-bladder becomes very much distended or unless there are signs of suppuration. If the patient has a steadily rising temperature and an increasing leucocyte count, however, it is very necessary to operate before rupture of the gall-bladder takes place. The danger of rupture of the gall-bladder is not as great as that of rupture of the appendix. However, such a condition can occur, and that possibility should always be kept in mind and the operation performed before it is too late. In these cases as well as in cases of chronic cholecystitis, one questions whether gall-bladder drainage according to the Lyons' method may not be indicated. Some have advised this quite strongly but since the gall-bladder always empties itself periodically I do not believe that very much is gained by this treatment.

Treatment of Chronic Cholecystitis—Chronic cholecystitis is frequently associated with symptoms which suggest a hyperacidity of the stomach. It is important in these cases that the patient be kept on a very simple diet—avoiding all ordinarily indigestible foods such as fried foods, excessive sweets, hot breads, pies and pastry, coarse vegetables—like cabbage, radishes, raw onions; and some meats—such as pork and veal. It is important that the patient eat three good meals a day and I would suggest that in addition he be given a glass of milk or a glass of half milk and half cream between meals and at bed-time. The majority of patients are benefited by taking a tablespoonful of olive oil before each meal as this lessens the tendency to hyperacidity. If the hyperacidity symptoms are very marked, it is wise to give the following alkaline powder two hours after each meal—sodium bicarbonate ten grains, bismuth subnitrate five grains and heavy oxide of magnesia five grains. If the patient is quite nervous it is also of advantage for him to take from fifteen to twenty grains of sodium bromide after each meal for a period of a week or ten days. Among the prescriptions which are advocated by different writers to be taken before each meal may be mentioned artificial Carlsbad water or some other alkaline water; some give 20 grains bicarbonate and one dram of sodium phosphate; or ten grains of sodium salicylate and a dram of sodium phosphate. Some advise magnesium sulphate two ounces, sodium salicylate and sodium bicarbonate each five drams—one teaspoonful of this mixture to be taken in hot water each morning. It is very important that the patient should get plenty of rest, and if it can be arranged, he should lie down for from one to two hours each afternoon. He should take plenty of time at his meals and should chew his food thoroughly. It is important that he should stop the use of tobacco or should use it very moderately if at all.

There is no one thing that is so apt to disturb these patients, as to take a heavy meal when they are feeling extremely tired. Therefore, if the patient returns from his work in the afternoon very tired, it is wise for him to lie down for a half hour or an hour in order to relax as much as possible before he eats his dinner.

OBSERVATIONS ON THE TREATMENT OF GOITRE*

Neil John Maclean, M.D., M.R.C.S. (Eng.) F.A.C.S.
Surgeon Winnipeg General Hospital. Associate Professor Surgery Manitoba University

The thyroid gland is an extremely labile organ. Its functional activity varies with season and sex, with age and exercise. Its response to variations in other endocrine organs is marked; hence during puberty, menstruation and pregnancy, we frequently find hypertrophy of the gland. The character of the food likewise, apart from its iodine content, has a definite influence on thyroid activity. A diet, rich in proteins, has been proved experimentally to produce increased function. Tryptophane, which is present in all proteins except gelatin and zein, and is said to be the precursor of thyroxin, is possibly largely responsible for this effect. It has been shown that the ingestion of certain other animo acids, such as tryamine and histamine, has the opposite effect, namely, a reduction in the size of the gland. According to McCarrison, fats in excess, cause thyroid hyperplasia. It is largely as the result of the foregoing observations, that a diet consisting chiefly of milk and vegetables has been recommended for toxic and exophthalmic goitre patients.

In 1820 Dumas and Coindet demonstrated the value of iodine in goitre therapy, but it remained for Marine and Kimball to show that endemic goitre was a preventable disease associated with

*Read before the Inter-State Post Graduate Assembly of America, Milwaukee, Wisconsin, October 27-31, 1924.

a deficiency of iodine in the food. Pregnant women with goitre should be given iodine, because a certain amount is essential to the normal development of the thyroid of the fœtus in utero.

Treatment of Simple Goitre during childhood and the adolescent period is medical. Attention to personal hygiene, removal of infective foci and the administration of iodine are the proper measures to be adopted. After the age of twenty years, iodine should not be administered, except in minute doses, such as are used in prophylaxis. Probably the iodine treatment of established goitre in adults is, on the whole, doing more harm than good; its indiscriminate use cannot be too severely condemned. The number of cases of induced hyperthyroidism one sees and the number of cases reported in the literature, has rapidly increased during the past few years. Jackson[1] states that twenty-five per cent of his cases of toxic goitre treated last year were of this type. A simple goitre in a patient over twenty-five years of age is usually permanent and if causing local or toxic symptoms, or is unsightly, should be removed surgically.

In Toxic Goitre (and by this term I mean any colloid or adenomatous goitre that has developed toxic manifestations) *the treatment* is positively surgical. Removal of the diseased portion of the gland is followed by complete relief from symptoms. Operation on these patients during the acutely toxic stage is, however, attended with great danger. Reports from some hospitals show an operative mortality for this group, equal to that of true Graves' Disease. These hypertoxic cases are frequently misdiagnosed true exophthalmic goitre and it is only by a careful histological study that the correct diagnosis can be made. Where the enlargement is unilateral, as in a single adenoma or cyst, resection-enucleation of the affected lobe is all that is necessary. Should both lobes be enlarged as in colloid goitre or general adenomatosis, bilateral resection is indicated.

Speaking in a general way, operation in these toxic goitres can and should be fairly complete for the following reasons:

(1) Adenomata may be left and from these undetected nodules, recurrences may develop.

(2) The possibility of malignancy, present at the time of operation (rare), or subsequently developing. Allen Graham[2] claims that ninety per cent of malignant goitres develop from fœtal adenomata.

(3) Patients with toxic goitre have usually passed the age of forty and their requirements for thyroid tissue are small. Furthermore the most normal part of the gland is that immediately in front of the posterior capsule, which is the part conserved.

For several years, I have been impressed by the marked difference in the condition of the heart in exophthalmic and toxic goitre. In the former, which usually occurs in younger patients, the heart beat, though markedly accelerated, is regular except in cases of long standing. In toxic goitre, on the other hand, cases when first seen, often have definite cardiac arhythmia. The essential difference would appear to be that in exophthalmic goitre there is an excessive stimulation of the accelerator nervous mechanism of the heart, while in toxic goitre the hormone circulating in the blood early selects the heart muscle, causing degenerative changes. Consequently many cases of toxic goitre present themselves in the stage of cardiac decompensation and would thus appear on superficial examination to be primarily heart cases. Often the onset of severe heart symptoms is associated with an acute exacerbation of toxemia. I do not believe that this heart crisis ever develops suddenly. Reviewing the history of these patients, one can usually elicit a train of symptoms suggestive of a mild chronic thyroid toxicity, extending over a period of many months or years. The point is, how can these serious cardiac conditions be prevented. The solution undoubtedly lies in the early recognition and treatment of this incipient form of hyperthyroidism. The two outstanding diagnostic features invariably present are, a moderate but persistent increase in the pulse rate and an increase in basal metabolism, as shown on repeated examinations. Here the assistance of the basal metabolic test in making an accurate diagnosis is invaluable and should be used in all cases of unaccountable tachycardia, whether the thyroid is enlarged or not. The differentiation must be made particularly from psycho-neurasthenia, incipient tuberculosis and primary and other secondary heart lesions.

The following case, of which there are many, will serve to illustrate this point:

Mrs. L., aged 42, applied for admittance to the Winnipeg General Hospital. She complained of slight indisposition and general weakness, but on examination nothing organic could be found. She had a small insignificant adenoma in the isthmus of her thyroid. She was kept in bed and under observation for a few days, during which time her chart showed a constant pulse rate of about twenty beats above the normal line. Further investigation of her cardiovascular system showed, apart from the tachycardia, nothing abnormal. Her basal metabolism was plus 19. Her past history revealed that two years previously she had an illness, definitely suggesting hyper-

thyroidism. Resection-enucleation of the adenoma in this case was followed by definite and continued improvement. A large number of our severe toxic adenomas on inquiry gave a history suggesting this mild form of chronic toxemia. While I have no brief for indiscriminate operating on cases of symptomless goitre, yet the prevention of the more serious forms of thyreocardiacs demands the recognition of these milder thyroid toxemias and early surgical treatment.

The Treatment of Exophthalmic Goitre (true Graves' disease) is one of the most difficult of medical problems; calling for the combined cooperation of family physician, internist and surgeon. While we do not know what measures the future may evolve for relief from this disease, at the present time the only adequate treatment is surgical. The one disquieting feature, however, is the high collective operative mortality. In 1921 I wrote 100 hospitals of the United States and Canada for their statistics on goitre. At that time the operative mortality for exophthalmic goitre averaged 8 per cent. Recently I wrote to 200 more hospitals (Category A according to the classification of the American College of Surgeons) and a summary of these later reports show the average operative mortality practically the same, 7.1 per cent.

Compiled Statistics From Seventy Hospitals of the United States and Canada, Two Years, 1922-3

	Total No.	Operative Mortality	Percentage
1. Simple Goitre (non toxic)	1403	10	.7%
2. Toxic Goitre	1352	35	2.4%
3. Exophthalmic Goitre	1116	80	7.1%

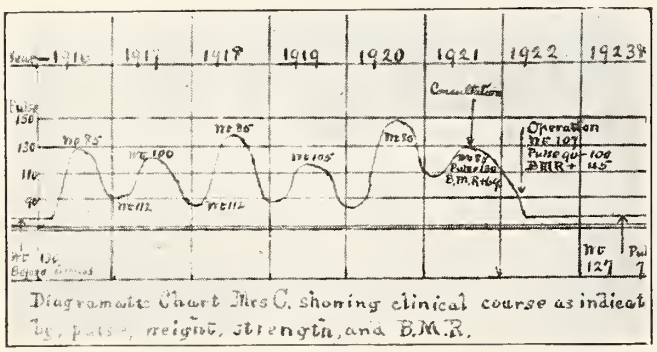
I know that these are not the statistics of Lahey, Crile or the Mayo Clinic or others who have this work highly specialized, but it is the statistics of the rank and file of surgeons and others operating in our best hospitals today. This calls for serious consideration on the part of the staffs of these hospitals, because we are dealing with a disease that is seldom fatal, unless neglected indefinitely. The factor that has contributed most to lowering the operative mortality is, a better selection of the time for operating. With the exception of a very small percentage of fulminating cases that die in the first attack, no matter what treatment employed, we have come to realize that most cases recover from the first and may recover from several attacks. Operating during the acute stage is attended with a high mortality; operating when the attack has subsided gives practically as low a mortality as the operation for simple nontoxic goitre. The two main arguments for early operation are: First, conserving the time in which the patient is incapacitated for work, and secondly, the lessened morbidity incident to a prolonged illness. Conservation of the patient's time is commendable, especially in these days of economic stress, but when bought at the expense of an increased mortality, the value received does not justify the price paid.

The morbidity is not due to the patient having passed through one crises, but rather to having passed through many crises. The argument therefore to operate, to cut short a crisis, is not justifiable in the face of the present operative mortality. Those who teach immediate operation even a preliminary ligation, irrespective of the stage of the disease are in large measure responsible for this high general operative mortality.

The natural clinical course of exopthalmic and toxic goitre has not received the study from clinicians that the condition deserves. There is an ebb and flow of symptoms, and these exacerbations and remissions are not of short duration but more or less prolonged. Their duration is measured by months, not by weeks. Plummer[3] in 1913, made the statement that from the onset of an attack of toxicity, until the exacerbation had passed off, was an average of twelve months. I have observed the clinical course of my cases and studied their past history, and while the course is often variable as to duration, as in all other diseases, yet there are certain outstanding features that are characteristic. The course was never a short one, i.e., from the onset of an attack until its termination was always a matter of several months. The interval of remission likewise, was never short. When the remission stage is reached, the patient may experience almost entire relief from symptoms and may be for a variable time, practically well. In others, however, there will be a residue of symptoms. The pulse rate may be ten or twenty beats above normal, the capacity for work lowered and the basal metabolic rate if taken, will be constantly above normal. The period of remission is usually followed by another exacerbation and this, within a few months time, though an interval of some years may intervene. Undoubtedly a few remain well, having no return of symptoms. The following case is striking and shows the typical periodicity of the attacks:

Mrs. C., age 29 years, when seen by me in consultation in the Winnipeg General Hospital, had all the classical symptoms of exophthalmic goitre. Her thyroid was moderately enlarged, there was definite

exophthalmos and a fine tremor, pulse rate was 130, but regular. The basal metabolic rate was plus 69. Her past history was most interesting. She had had during the past five years exactly five attacks, incapacitating her for periods of from five to six months each year. I suggested rest until this attack had subsided as the history showed her previous attacks had done. She did not report for operation until six months later, when I resected both lobes of the thyroid, leaving about one-eighth of the gland on each side. The subsequent history of this patient shows that she has been in perfect health since her operation, having had no return of her former attacks.



Diagramatic Chart Mrs C. showing clinical course as indicat by, pulse, weight, strength, and B.M.R.

Another case illustrates a long period of remission:

Miss R., aged 38, school teacher, presented all the cardinal symptoms of exophthalmic goitre in the acute phase. Four years previous to this she had complained of similar symptoms incapacitating her almost a year, during which time she was treated for a nervous breakdown. This is the longest interval between attacks that I have observed, with the exception of one case that has remained well for eight years since her first attack. It is questionable if this case is one hundred per cent well.

Hymen and Kessell[4] have made the claim that they can obtain as good results by a period of rest and hygienic treatment as can be obtained by surgery or any other means. They call their treatment "skilful neglect." It is, however, the best treatment I know of for the acutely toxic stage. What they have accomplished is, they have carried their patients through their crisis into the negative phase of the disease. It would be interesting to observe these patients further to see how many would relapse in the course of time. Their cases appeared to be, judging from the basal metabolic rate, in excellent condition for radical operation. I think that the surgeons here—at least—will agree that this is indeed "skilful neglect."

In the management of my exophthalmic goitre cases during the past five years, I have been trying to eliminate all preliminary surgical treatment, such as injections of boiling water into the gland and ligation of arteries, and I think I have succeeded. This has been accomplished by a careful study of the phases of the disease and operating only when the acute stage has subsided. Furthermore, I have been able to do the complete operation of bilateral resection at one sitting, except in a few cases where it seemed wiser to divide the operation into two stages, first resecting one side and the other two or three weeks later.

The "hands-off" period varies in every case and depends on the stage at which the patient is in when first seen by the surgeon. If seen early in the attack a delay of seven or eight months, rarely longer, may be necessary. Whereas if seen in the later months of the attack, the patient may be well over the crisis and soon ready for operation. Those in the negative phase when first seen, require no preliminary treatment. The usual objection made is that these patients will not wait so long for operation. Tuberculosis patients will go to bed for six months, a year, and some several years if necessary, because the medical profession are agreed that that is the proper thing to do. I know of three deaths from precipitate operating in exophthalmic goitre, when a preoperative period of delay was advised. When it comes to a question of seven or eight months rest or an eight per cent operative mortality, I would take the eight months rest.

My operative mortality has been as follows:

Simple non-toxic Goitre 122 Cases	Colloid	53
	Adenomatous	56
	Cystic	12
	Abscess	1

Operative Mortality — Percentage
1—Embolus (10th day) 8%

Toxic Goitre 79 Cases	Colloid	36
	Adenomatous	43

Operative Mortality — Percentage
2—Heart Wrecks (year 1919) 2.5%

Exophthalmic Goitre
61 Cases

Operative Mortality — Percentage
1—Postoperative Storm following Lobectomy (year 1915) 1.6%

Lugol's solution will effect an improvement in a large percentage of these cases thereby shortening the preoperative period of rest; others again do not show this improvement. Lugol's solution does not replace the rest period, but aids it as an immediate preoperative measure. I would not operate on a severely toxic case on the improvement obtained from two weeks treatment with Lugol's solution, unless the patient was first over the crisis. One of our

cases, a young woman in her first attack (the most dangerous type of case for surgery), operated on in the eighth month, had a severe post operative reaction, though on Lugol's solution for ten days preceding her operation.

Unless the patient, the anxious friends and the surgeon have the necessary self restraint to wait the most favorable time, the operative mortality in exopthalmic goitre will continue high.

I wish to here thank the medical superintendents, the sisters and the record officers of the hospitals who so kindly furnished me with their statistics on goitre, thereby contributing to the value of this study.

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HOSPITALIZATION OF WAR VETERANS TODAY

Inez M. Pugh, U. S. Veterans Bureau

Notwithstanding all that has been said and written about hospitalization of disabled American War Veterans, I wonder how many individuals in the United States today have any definite idea of the elaborate hospital program that the United States Veterans Bureau is carrying on.

Already operating forty-nine hospitals, seventy-four dispensaries, ninety-four clinical laboratories, about one hundred x-ray laboratories and housing over 29,000 patients, the Bureau is constantly constructing and opening new hospitals and incorporating additional facilities in those already open. These hospitals are as modern and complete as science and careful planning can make them and no detail of utility or convenience is sacrificed to a false prompting toward economy.

In order that the medical authorities of the hospitals may be enabled to give their undivided attention to the care and treatment of patients the director has established a business manager in each hospital to look after the financial and economic affairs of the institution.

These men have been carefully selected with regard to demonstrated ability as business executives and are expected to show gratifying results in the way of increased economy of administration, and in handling the thousand and one business details inseparable from the functioning of a large institution.

It has long been the director's conviction that these duties should not be imposed upon the medical men charged with the actual care and treatment of the disabled and the establishment of these business managers is a definite gesture planned to increase efficiency on the part of the physicians as well as in the economic operation of the hospital.

In the matter of hospitalization of disabled veterans the president, the director of the Bureau and the Congress are thoroughly in accord and whatever may be necessary in material and personnel to furnish adequate hospitalization and medical service of the highest order is being and will be provided for. The generous provisions of the Reed-Johnson bill have permitted the Bureau to open its hospitals to veterans of any war in which the United States has participated since 1897 and already over 2,000 have availed themselves of this benefit showing plainly the acute need for such assistance.

In planning the hospitals, not alone is the medical care of the men considered, but recreational and entertainment features are also provided, chief among which latter are the radios which are being installed in all Veterans' Hospitals as rapidly as suitable equipment can be obtained.

In the appropriations recently made available by Congress complementing the Third Langley Bill, six new hospitals and a National Training School for the Blind are provided for and funds are made available for the completion of another hospital now partially constructed.

In order to secure for the Bureau the greatest possible efficiency in medical service the director has assembled a body known as the Medical Council which is composd of thirty of the leading specialists of the United States and which meets at his call to counsel and advise with him and the medical director in all matters pertaining to the medical care and treatment of the disabled.

The director feels that it is much more a service to give a man back his health and with it his economic independence than it is merely to maintain him in a hospital and pay him compensation. Therefore, this feature is a significant step in demonstrating his theory that cure rather than money compensation should be the chief endeavor of the Bureau.

In this theory the Medical Council heartily concurs and in accordance with this policy a

hospital's efficiency is measured by its accomplishment in recoveries of the disabled.

In this phase of the work, however, the attitude and co-operation of the patients is half the battle and if past experience is a safe criterion for the future the outlook is indeed encouraging.

The boys who had the courage and grit to carry on throughout the war are demonstrating that same spirit in their slow and irksome fight back to health and strength and in each recovery credit for the victory belongs quite as much to the patient as to the physicians and nurses.

In many of the Bureau hospitals the men find much pleasure, healthful exercise and recreation in the planting and tending of truck and flower gardens. This occupation is always encouraged, and provisions for various other forms of occupational therapy are constantly being developed in the hospitals.

In a great many of the hospitals, a small weekly or monthly paper is edited and published entirely by the patients and personnel and many of these papers show genuine merit in carefully prepared articles which are a faithful reflection of the fine spirit prevailing in the hospitals, as well as many amusing little local squibs which record the daily life at these great institutions.

There was an old fashioned idea that a hospital was a gloomy, disinfected place, redolent of iodoform and hung with fever charts, in which to be sick and do something about, it, but this notion has given place to a gratifying knowledge that the Veterans' Bureau Hospitals at least, are "comfy," cheerful and pleasant, and that mental contentment for the patients is quite as important an objective as physical relief and betterment.

There is a certain personal quality in the service that the physicians and nurses render the disabled as though they bear constantly in mind with grateful remembrance the cause and source of the wounds and hurts they strive to heal.

It is on such a basis as this that there has been built up in the U. S. Veterans' Bureau Hospitals a morale and an esprit de corps of which both the patients and the personnel are justly proud, and upon which most surely rests the success of these institutions.

THOMAS SYDENHAM

The three-hundredth anniversary of the birth of Thomas Sydenham was commemorated by the Royal College of Physicians recently, by an address by Sir Humphrey Rolleston, president of the college. Sir Humphrey referred to Sydenham as the English Hippocrates.

To the Editor:

I do not know if you put anything like this in your Journal or not, but our minister keeps talking about M.D. and this just rattled through my brain and I am sure my doctor man has done plenty of good to go anywhere. So I am sending you this, if you care to use it, you can send me a Journal, if not, just put it in the junk, don't send it back for it is not worth anything and I don't care for it.

Respectfully,

Kittie Quire.

P. S. We cannot do enough for our country doctor.

"MY DOCTOR MAN"

I went to church the other day,
Just to hear what the preacher had to say,
And I got sort of riled
After listening to him for a while.
He talked about farmers, merchants and clan,
Then commenced about the medical man.
Said just because you were moral and true,
Would not help a bit when you want to get through.
Then I just thought of my Doctor Man,
What he had been doing for the human clan,
How last night he just got right out in the cold,
Took his old "Lizzie" and started out bold.
The snow and the sleet and the cold
Topped his "Lizzie" without being told.
He worked with spark, timer and gas,
But had to leave "Lizzie" in the road at last;
Pulled out his grips and started out bold,
Walked through storm and sleet and cold.
At last he came to a humble home,
Found a wife and a husband alone.
He gave to her such cheer,
It drove away her awful fear,
A baby's life he saved,
Kept a mother from her grave.
They gave him their thanks and that was all,
He knew no money would come from that call.
Took his grips and hurried on strong;
To an old Grandma for
From there he had an hysterical case
That just takes a whole lot of grace.
At the next place an accident was found,
With many bandages the limb he bound.
Then I think I went to sleep,
For I thought I saw the Golden streets.
There was the preacher and his band,
But St. Peter held up his hand,
They had to stop and wait, just this side the Golden gate.
I just wondered what was wrong,
When I saw some one plodding along—
It was my Doctor Man.
St. Peter grabbed him by the hand,
Told him to go right in with the blest,
See if he could get what he wanted—some rest,
And I was so proud of my Doctor Man.

—Mrs. Kittie Quire.

The Journal of the Iowa State Medical Society

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THE NINTH ANNUAL SESSION OF THE INTER-STATE POST-GRADUATE MEDICAL ASSEMBLY OF AMERICA

The St. Paul Meeting

This great assembly of medical men convened at St. Paul October 12th, for a five day session. There were registered 3,200 doctors from the United States, Canada, and the rest of the world. Nothing could be more complete than the arrangements for this meeting. The St. Paul auditorium building furnished rooms for all the meetings, for the exhibits, and for the committee meetings, all under one roof.

The sessions began at 7:00 a. m. and continued to 10:00 or 11:00 p. m., for a period of five days. The more enterprising doctors could put in a full day, others could put in as many hours as their strength and endurance would permit and others by consulting the program, could arrange to attend such lectures and clinics as most desired. One could attend for one day or for the full five days, as suited their convenience. The committee on program had secured the most distinguished teachers of medicine of the United States and Canada and from Europe. There are some equally famous to be called upon next year. In several instances groups had been arranged for the full consideration of a single subject which could be easily divided. The voice amplifier made it possible to hear distinctly every word uttered and the earnest attention of the audience made it easy for the speaker.

The lay press were extremely generous in reporting to the public the doings and sayings of the convention, freely illustrated with pictures of the great men in the profession. In some instances it would be difficult for the most intimate friend to recognize the face, showing that not all great men carry photographs for the use of newspapers, indeed, Dr. Arthur Dean Bevan's picture must have been badly mixed.

It would appear that the Middle West is not free of respect for royalty. Lord Dawson of Penn, the King of England's private physician, received distinguished attention from the St. Paul press, and very properly, for he is a gracious gentleman and said many good things, among them was a reference to the benefit that might accrue to people beyond middle age, from an occasional glass of wine, which met the unqualified approval of the writer and apparently of the St. Paul Pioneer-Press editorially, even at the risk of the specter of Wayne B. Wheeler.

The assembly closed with an elaborate banquet at the Masonic Temple. The attendance was enormous. The writer does not know how many were present, but would guess more than one thousand. He never felt more completely lost, he never thought before that there were so many doctors he did not know, but the food was good and everybody friendly, and we felt proud of our leaders who sat in the high places, prepared to tell us some delightful things when the hour should come. We, of Iowa, had our eye on the retiring president, Addison C. Page of Des Moines, who had done himself and his state credit, and of whom the press spoke in fair terms of praise and quoted his banquet words, which seem so appropriate to the lay mind. The toastmaster, Dr. Arthur Sweeney of Minnesota University, introduced Governor Christianson of Minnesota. Among the speakers were Dr. W. J. Mayo, Dr. G. W. Crile, Lord Dawson of Penn, England; Dr. J. C. Meakins of McGill University, Governor A. G. Sorlie of North Dakota, Dr. L. J. Austin of Queen's University, Kingston, Canada, and Mayor Arthur E. Nelson of St. Paul and Dr. Addison C. Page of Des Moines, who followed Governor Christianson.

The banquet was a great success and the speakers were men of the first class, and, for the moment at least, we could feel a reasonable pride that we belonged to so great a profession. We do not know what passed in the mind of manager Dr. Peck of Janesville, as he surveyed the result of nine years of strenuous work, but we are prepared to believe he felt that his life was not a failure.

We are not recording the scientific work of the

assembly, but expressing reflections that come to mind and the expressing of the sentiments of the lay press which so successfully and so generously brought to the public the sayings of the recognized leaders of the medical profession. Some enquiring minds wonder what the future will bring to the apparently overgrown medical organization – not an organization at all, but a mass assembly of medical men. But fears are groundless; there is a distinct place for this assembly. The American Medical Association is an organizing and directing body. The American College of Surgeons a standardizing body. The assembly a purely democratic body for the purpose of bringing the word to the masses of the profession who come together for clinical study, each has its place.

The place of meeting for 1926 is Cleveland, Ohio.

The total registration was about 3,200, Dr. Edwin Henes, Jr., Milwaukee, secretary, said, comparing with a total registration of 2600 last year.

A list of five vice-presidents is eliminated from the roster of officers in a resolution passed at a short business session. In their place a committee of three will be chosen by the president to select a vice-president from every state and province in North America, including the District of Columbia.

Drs. William J. and Charles H. Mayo of Rochester remain presidents of clinics and Dr. William B. Peck, Freeport, Illinois, managing director of the assembly.

The following officers and trustees were reelected: Associate managing director, Dr. J. Sheldon Clark, Freeport, Illinois; secretary and director of exhibits, Dr. Edwin Henes, Jr., Milwaukee; speaker of the assembly, Dr. George V. J. Brown, Milwaukee; director of the foundation fund, Dr. Henry G. Langworthy, Dubuque, Iowa; trustees, Dr. Brown; Dr. John M. Dodd, Ashland, Wisconsin; Dr. Arthur G. Sullivan, Madison, Wisconsin; Dr. Chas. G. Farnum, Peoria, Illinois; Dr. Edward S. Murphy, Dixon, Illinois; Dr. John F. Herrick, Ottumwa, Iowa; Dr. Langworthy, and Dr. John E. O'Keefe, Waterloo, Iowa.

The new trustee chosen was Dr. Mather Pfeiffenberger, Alton, Illinois.

Decision to meet next year at Cleveland, Ohio, was on invitation from the Cleveland Academy of Medicine.

PROGRAM

Toastmaster—Dr. Arthur Sweeney

Honorable Arthur E. Nelson, Mayor of St. Paul.

Honorable Theodore Christianson, Governor of Minnesota.

Dr. Addison C. Page, Des Moines, Iowa, President Interstate Post-Graduate Assembly of America.

Rt. Honorable Lord Dawson of Penn, G.C.V. O.; C.B., London, England.

Dr. George W. Crile, Cleveland, Ohio.

Honorable A. G. Sorlie, Governor of North Dakota.

Dr. W. J. Mayo, Rochester, Minnesota.

SAFETY FIRST

At a recent meeting of the American Association of Railway Surgeons, the subject of Safety First was presented in a symposium in which several of the foremost safety and claim men participated, including the coroner of Cook county and a high official of the Chicago Automobile Club. The men connected with the railway service could show a steady improvement in the number of persons killed and injured on railroads, but on the other hand it was shown that the casualties on the streets and highways from automobiles was increasing. How to lessen the number of killed and injured in automobile accidents on streets and highways and at railway crossings, no one seemed to know. The automobile people were of the opinion that education of the children was of first importance; many other suggestions were offered. It was developed in the discussion that men were permitted to drive cars without an examination or any test to show the driver's fitness for such employment. It is well known that men are permitted to drive cars that are deaf and almost blind. It is known that men are driving cars who are out of insane hospitals on parole. It is known that men are driving cars who are out of penal institutions on parole. These defectives are probably not numerous, but it does not require a large number of reckless or careless or incompetent drivers to make a considerable showing of serious accidents. There is again the peculiar tendency of the American people to take chances. There are safe chances and there are dangerous chances. The strong, quick-witted, capable and experienced drivers may take chances that would be extremely dangerous to a defective. Of course nothing should be suggested or done that will interfere with the commercial interests of the automobile business. We not infrequently read that a measure of the prosperity of a state is determined by the number of automobiles, and we of the United States are so much ahead of European countries which have a relatively

smaller number of motor cars. We are frequently reminded that human life has a much less value in the United States than in Europe, and of course the easy sacrifice of human life is an indication of greater progress.

The railroads with a greater regard for human life insist that all men who have to do with transportation shall submit to a thorough medical examination before being acceptable for service. No candidate would be accepted with a vision of less than 20/30 or who could not hear a whispered conversation at a distance of twenty feet. No man would be accepted with one eye, or with an eye of less than 20/30 vision. No man would be accepted with only one arm or hand or of one leg or foot or with stiff joints. Every employe having to do with transportation is subject to a re-examination once a year, after fifty, on the ground that after fifty years of age vision is liable to fail, and if the vision is found to fall below the standard of a new employe, he must wear well adjusted glasses to bring vision to normal, and if this cannot be accomplished, he is placed in special service. No man is employed that is color blind. The same requirements are made of pilots on ships or steamboats.

Contrast this with motor car service. Men are permitted to run on our streets and highways who have but one eye and that defective; men who are deaf; men with one leg and that perhaps an artificial one. No man is accepted in transportation on railroads who shows any signs of alcoholism or who has a history of a mental defect or a record of epileptic attacks, and yet men of such records are running automobiles every day. Is there anything except the providence of God that prevents daily accidents of the most serious and fatal character?

On roadroads no man can be promoted to an engineer with less than four years' training as a fireman, under an experienced engineer, and no man is put in charge of a train with less than ten or twelve years with a trained conductor and few men are put in charge of a passenger train with less than twenty years' service. Promotions from fireman to engineer or from brakeman to conductor require another medical examination by one of the company's surgeons. But a man, woman or child may in one day under a demonstrator—who is selling cars—run a motor car at his sweet will anywhere, even with all the defects above enumerated. In a considerable number of states some attempt at safety are made by requiring a license after a period of training. This requirement does not seem to seriously interfere with the selling of cars.

The American Medical Association and the British Medical Association, through committees, have formulated eye and ear tests for automobile drivers, but the legislatures so far have entirely ignored all such tests.

We bewail the daily loss of life from automobile accidents and yet neglect the reasonable and possible means of safety for some unaccountable reason.

We cannot apparently provide against the fool element in automobile traffic; men, women and children will run unexpectedly in front of a car. Drivers will try to run a railway crossing and get killed; no one really wants to be killed, this feeling exists with or without education. Education will not eliminate such folly; it is inherent in our nature to take the chance. There are no doubt many regulations get into the minds of men which really increase the danger, but if all drivers were properly trained and kept their cars under full control in crowded areas the danger would be greatly lessened. It is not the speed of the car that is the danger element, but the lack of sense and good judgment, and of carelessnss in regard to the control of the car, an element which cannot be expected in a defective driver.

There are some elements of safety we can employ which we do not, and there are some elements we cannot secure and so we must expect accidents and death. If this is true it is but fair that automobiles carry indemnity insurance for the benefit of the innocent victims.

Last year 149 passengers were killed on railroad trains and 16,000 in automobile accidents.

NEW ENGLAND HEART ASSOCIATION

Dr. Henry Jackson of Boston, in reviewing the activities of the New England Heart Association, published in the August number of the Boston Medical and Surgical Journal, calls attention to some important facts. One is that a money credit of at least $2,500 is necessary and $6,000 would be better.

Dr. Jackson states that heart disease occurs in one of every hundred of our population. That up to forty-five years of age, organic heart disease causes as many deaths as typhoid or pneumonia or Bright's disease. That after forty-five years of age, organic heart disease causes more deaths than any other disease.

Dr. Jackson warns us that it is not valvular murmurs that we need consider but myocardial changes which require the most careful study.

In our own state much attention is being given to heart disease and under the direction of Dr. Walter L. Bierring, Dr. Merrill Myers and Dr.

John Peck of Des Moines, numerous heart clinics are being given and very considerable interest is being manifested in the county medical societies. As money is important in carrying on this work we would suggest that the various county societies make reasonable appropriations of funds for this purpose. If some of the rather questionable propaganda could be laid aside for this more important subject of heart disease, much more real good could be accomplished for the welfare of the public.

Des Moines, Iowa, October 31, 1925.

Dear Doctor Fairchild:—

There are at the present time over 250 physicians that have not complied with the law relating to renewing their certificates to practice medicine in the state of Iowa, by making application for renewal and paying the one dollar fee.

Every day we get a letter from the Federal Narcotic Bureau, the federal prohibition director, insurance companies, and others wanting this office to certify some physicians as being re-registered. This department cannot certify a physician as registered unless he has paid his renewal.

These 250 have not renewed, on account of possibly not having received notice of the existence of this new law, this department has tried to reach every physician, but some have moved and not furnished the forwarding of addresses.

Very respectfully,

Don M. Griswold,

Commissioner, State Dept. of Health.

BIRTH RATE DROPS, DEATH RATE RISES

According to a news item in the New York Medical Journal and Medical Record:

"A decline in the birth rate and a slight increase in the death rate in 1922 was shown in provisional census bureau figures for the year, announced today by the Department of Commerce. For the twenty-four states reporting birth figures, the rate for 1922 was 22.7 for each 1000 of population, against a rate of 24.4 for 1921. For thirty-three states the death rate last year was 11.9 against 11.6 for 1921. North Carolina reported the highest birth rate, 30.2, while a rate of 18 for the state of Washington was the lowest. Death rates in the thirty-three states ranged from 14.7 for Maine to 8.1 for Idaho."

PROPORTION OF PHYSICIANS TO POPULATION IN AUSTRALIA

The Boston Medical and Surgical Journal finds the census of doctors in Australia for the present year, gives one doctor to about 1,223 population. In Queensland one doctor to 1,665.

There has been an increase of about 6 per cent of doctors from 1924 to 1925.

ANNIVERSARY DISCOURSE

George E. Vincent, Ph.D., president, Rockefeller Foundation, delivered the seventy-ninth anniversary discourse at the New York Academy of Medicine, November 19th, 8:30 p. m., on "The Doctor and the Changing Order". The anniversary discourse has been an annual occasion in November at the academy since its foundation in 1847. Among the former orators were Dr. Edward E. Janeway, Dr. William H. Welch, Dr. Hermann M. Biggs, Henry S. Pritchett, Chauncey M. Depew, George W. Wickersham, Mr. John H. Finley and Hon. George McAneny.

—Jour. A. M. A.

MEDAL AWARDED TO DR. WELCH

The first W. W. Gerhard gold medal offered by the Pathological Society of Philadelphia has been awarded to Dr. William H. Welch, director, School of Hygiene and Public Health, Johns Hopkins University, Baltimore, and will be presented November 12, when Dr. Welch will lecture before the society. The award was instituted by the Pathological Society of Philadelphia in collaboration with Dr. Arthur H. Gerhard in memory of William Wood Gerhard (1809-1872), who first differentiated typhoid from typhus.—Jour. A. M. A.

UNIVERSITY HONORS PHYSICIANS

The honorary degree of doctor of science was conferred by the University of Pennsylvania recently on Lord Bertram Dawson of Penn, physician to the King of England and the Prince of Wales; Dr. Chas. H. Mayo, Rochester, Minnesota; and Dr. Rudolph Matas, New Orleans. The university held a special ceremony in Houston Hall, where Provost Josiah H. Penniman conferred the degrees.—Jour. A. M. A.

ACCIDENTAL FATALITIES

During the nineteen months of the World War, the battle casualties of the United States were 48,000. During these nineteen months the accident fatalities of the United States were 126,000, of which 35,000 were industrial, 91,999 in homes and streets, of which 25,000 were children of school age on the highways.

The moral is that we should make our streets, homes and places of work more safe.—Bulletin New York City Dept. of Health.

GIFT TO SPENCER FOR HOSPITAL

The will of Mr. Marion E. Griffin, the Spencer banker, who died recently, provided that $50,000 shall go to a county hospital, if the county will give $150,000 within five years.

APPOINTMENTS AT HARVARD SCHOOL OF PUBLIC HEALTH

According to Boston Medical and Surgical Journal, Drs. Wm. E. Deeks, Carlos P. Chagas and Alexander H. Rice have been appointed lecturers in tropical medicine at the Harvard School of Public Health; Dr. Albert A. Hornor, assistant in tropical medicine; R. A. Atwater, instructor in epidemiology; L. R. Cleveland, assistant professor of protozoology; Drs. Noel G. Monroe, Halsted G. Murray and Dwight L. Sisco, assistants in industrial medicine. Dr. Francis B. Grinnell, instructor in bacteriology; Dr. Fred W. Morse, Jr., assistant in bacteriology and immunology and John L. Lewis, assistant in vital statistics.

HEALTH NEWS LETTER—IOWA STATE DEPARTMENT OF HEALTH

Administrative Control of Diphtheria

Abstracts from rules and regulations of the state department of health. For complete instructions see the rules and regulations.

Reports of Cases

1. Physicians must report all cases or suspected cases. When they have reason to believe of the existence of a case: Parents or guardians, superintendents and principals of schools, superintendent or keeper of hospitals, jails or asylums, owners or managers of dairy farms, licensed embalmers, registered nurses, and all good citizens are required to report this fact to the local board of health. It is supposed that every case of any contagion will come to the attention of some one of the persons listed above.

Investigation of Reports

Whenever it is reported that a suspected case of reportable disease exists or that a person has reason to believe that a case exists, the local board of health shall have this report investigated by its health officer and adequate means must be provided for the protection of the public.

CARE OF THE CASE

1. Every case of diphtheria must be quarantined at once.

2. Suspected cases of diphtheria must be placed in temporary quarantine.

Termination of Quarantine

1. Quarantine for diphtheria shall not be terminated until:

(a) Fourteen days from the onset of the disease, and

(b) Until the attending physician reports complete clinical recovery, and

(c) Until two successive cultures from the nose and throat fail to show the presence of diphtheria bacilli, and

(d) Until all measures authorized as terminal disinfection by the state department of health are carried out to the satisfaction of the local board of health.

(e) In case where two consecutive negative cultures are not returned, the diphtheria quarantine may be terminated by action of the local board of health on the 28th day of quarantine and the patient segregated as a diphtheria carrier.

(f) If the case terminates with the death of the patient, sections (a), (b) and (c) do not apply.

Release of Persons Before Termination of Quarantine

1. The Case. The person around whom a quarantine is established shall be released only as specified above except when specifically approved by the state department of health.

2. Adults not ill with the disease may be instructed, disinfected and released to live elsewhere after they have had two negative nose and throat cultures. If such release is approved by the local board of health.

3. Immune School Children in Quarantine. Children of school age or less than school age who have been given 1 c.c. toxin antitoxin mixture once a week for three weeks at least twelve weeks prior to the establishment of the quarantine, may be released on the same basis as adults.

4. School Children not Known to be Immune. Children of school age or less than school age who have not been immunized as described above may be released before the termination of a diphtheria quarantine only to be quarantined in another dwelling where there is no case of diphtheria and where there are no other children of school age or less than school age. School children thus quarantined may be released from this second quarantine after one week if two successive cultures from the nose and throat fail to show the presence of diphtheria bacilli.

Return to School After Leaving Quarantine—New Rule

No school child or other person shall return to school until one week after leaving a quarantine.

Early and adequate doses of diphtheria antitoxin has reduced the death rate from 85 per cent to 15 per cent.

CARE OF THE CONTACTS

1. Contacts in the home:

May be released as provided in the preceding section.

2. Contacts at school:

When it is found that a case of diphtheria has attended school, children and employes of the room or small school should have throat cultures of all the children made immediately. School boards can require this in order to protect the health of the children whom they require to attend their school.

Local boards of health can require this when the school situation is such that it threatens the general public.

As a result of such general culture examination of a school, all children and employes who were found free from diphtheria bacilli should continue

school as usual. All others should be excluded from school until one culture of the nose and throat fails to reveal diphtheria bacilli. During this period of exclusion, they must be handled as diphtheria carriers.

3. Contacts in public:

Persons knowing that they have been in contact with a case of diphtheria in public should call their family physician immediately on the first indication of any (1) rise of temperature, (2) sore throat, (3) or indisposition of any sort. Every case of diphtheria develops within seven days after the essential contact with an infectious person or thing.

Toxin-antitoxin is highly recommended for the establishment of active immunity against diphtheria.

CARE OF CARRIERS

When diphtheria bacilli are found on persons who have none of the clinical manifestations of the disease, they shall be deemed diphtheria carriers. No person shall be deemed a diphtheria carrier earlier than twenty-eight days after having diphtheria.

Restrictions on the carrier:

1. Diphtheria carriers should be quarantined only if they violate the instruction to segregate themselves from the public.

2. Diphtheria carriers must be segregated in their own homes and not come in contact in any way with the public.

3. Diphtheria carriers must not attend any public or private school, church, picnic or public gathering of any kind.

4. Diphtheria carriers must not handle food or dairy products offered for sale.

5. Diphtheria carriers must live in a home having a placard "Diphtheria Carrier".

6. Diphtheria carriers may be released and readmitted to school on one negative culture.

Restriction on other persons living in the same home:

1. Adults. Must have throat cultures taken. May come and go from the house as usual.

2. Children. School children living in the home of a carrier shall be excluded from school as long as the carrier. If these children go to another home to live, they may be readmitted to school as soon as they have had one negative culture if this is approved by the local board of health.

Advice to diphtheria carriers:

1. Diphtheria carriers should get plenty of exercise in the fresh air and sunshine, but they must not come in contact with persons outside their home group.

2. Whenever the period of quarantine and the period of segregation as a carrier extends for more than eight weeks, the situation should be referred to the state department of health for disposition.

3. Complete enucleation of all adenoid and tonsillar tissue has been found to be the most effective method of ending the carrier state. Sprays, gargles, swathings and similar methods have all been found to be of about equal value, and in some cases terminate the carrier state a few days earlier than would clear them up unassisted.

Don M. Griswold,
Commissioner.

NATIONAL BOARD OF MEDICAL EXAMINERS

Dr. Horace D. Arnold of Boston, president of the National Board of Medical Examiners, announced following a meeting of the executive committee at Philadelphia, October 3, that two additional states, Connecticut and Utah, have notified the board that henceforth they will accept its certificate qualifying physicians to practice medicine in those states. The board has been active since 1915 in establishing a standard qualifying examination of such character that its certificate can be accepted by all state boards licensing physicians. Its certificate is now recognized in more than thirty states, and also in Great Britain.

The meeting was attended by Dr. Arnold, Major General M. W. Ireland of Washington, Surgeon General of the United States Army; Rear Admiral E. R. Stitt of Washington, Surgeon General of the United States Navy; Dr. J. S. Rodman of Philadelphia, secretary of the board; Dr. Walter L. Bierring of Des Moines, Iowa, and Everett S. Elwood, managing director of the board.

Dr. Arnold, who was formerly dean of the Harvard graduate school of medicine, also announced the results of the board's June medical examinations. A total of 508 were examined, the largest number ever to take the written examination of the National Board. The examinations were held at thirty medical schools throughout the country including Harvard in Boston, Cornell in New York, University of Chicago in Chicago, Tulane in New Orleans, University of Texas in Galveston, Washington University in St. Louis, University of Minnesota in Minneapolis, University of Oregon in Portland, University of California in San Francisco, and the College of Medical Evangelists in Los Angeles.

The board also held examinations during June and July in Part III which is a practical and clinical test and the final examination of the candidate. These examinations were held in Chicago, Cleveland, Galveston, Minneapolis, New York, Philadelphia, Portland, and San Francisco. They were attended by 138 candidates, of whom 130 passed successfully and were granted the certificate of the board.

Of the 334 candidates who took either the complete examination in Part I (which covers the first two years in medicine) in June, or completed Part I by taking subjects previously postponed, Ralph Lichenstein of Philadelphia, who obtained his medical education at the Jefferson Medical College, Philadelphia, earned the highest number of credits, securing 394 out of a possible 425. Euclid P. Ghee of Jersey City, who is a member of the class of 1927 of the Harvard University Medical College, stood second with 392.3 credits. The other candidates among the ten highest were as follows:

LeRoy Goodman of Kansas City, Missouri, Harvard University Medical School, 383.5; John F. Lecocq of Lynden, Washington, University of Oregon Medical School, 380.7; Maxwell Bogin of Brooklyn, New York, Yale University School of Medicine, 379.2; Guthrie Y. Graves of Scottsville, Kentucky, Vanderbilt University School of Medicine, 374.8; Philip F. Shapiro of Chicago, Illinois, Rush Medical College, 374; Max Davis of Dorchester, Massachusetts, Harvard University Medical School, 373.5; Jacob Sugarman of New York, New York, Boston University School of Medicine, 372.8; F. William Marlow, Jr., of Syracuse, New York, Harvard University Medical School, 372.5.

In the Part II examination (which covers the third and fourth year in medicine), Dr. Reginald H. Smithwick of Boston, Massachusetts, who is graduated from the Harvard University Medical College this spring, stood the highest of the 174 candidates with 204.5 credits out of a possible 225. Dr. Millard S. Rosenblatt of Portland, Oregon, also a graduate of the Harvard Medical School, stood second with 203.9. The other candidates among the ten highest won the following rates:

Lawrence W. Sloan of Salt Lake City, Utah, Harvard University Medical School, 203.4; Marshall N. Fulton of Providence, Rhode Island, Johns Hopkins University School of Medicine, 201.5; John W. Rich of Claremont, California, University of Pennsylvania School of Medicine, 201.4; John W. Klopp of Philadelphia, Pennsylvania, University of Pennsylvania School of Medicine, 200.5; Herman E. Pearse, Jr., of Kansas City, Missouri, Harvard University Medical School, 200.2; Theodore Reichbaum of Easton, Pennsylvania, Harvard University Medical School, 200.2; Donald A. Carson of Glens Falls, New York, Columbia University College of Physicians and Surgeons, 200.1; Reinhold O. Ebert of Marion, Wisconsin, Cornell University Medical College, 200.1.

"NATIONAL HEALTH SERVICE"

Frequent inquiries are received at the office of the surgeon general, asking if the "National Health Service" located in Washington, D. C. has any connection with the Public Health Service or with the government of the United States.

On numerous occasions, letters evidently intended for the "National Health Service" have been addressed to the Public Health Service and it was clear that the writers believed the "National Health Service" to be a branch of the federal government.

Surgeon General H. S. Cumming desires to announce that the "National Health Service" which advertises, and sells, a "health book", has no connection whatever with the Public Health Service, and insofar as can be learned, with no branch of the government.

It should be definitely understood that the Public Health Service does not endorse this self-styled "National Health Service" or its books.

This announcement seems necessary in fairness to the general public.

UNITED STATES CIVIL SERVICE EXAMINATIONS

Junior Medical Officer
Assistant Medical Officer
Associate Medical Officer
Medical Officer
Senior Medical Officer

Applications Will Be Rated as Received Until December 30, 1925

The United States Civil Service Commission announces open competitive examinations under the above titles for filling vacancies occurring in the federal classified civil service throughout the United States, unless it is found in the interest of the service to fill any vacancy by reinstatement, transfer or promotion.

The registers resulting from these examinations will replace those for physician (district), interne (district), and medical officer, announcement No. 357. Eligibles on the replaced registers who have had less than one year of eligibility will be transferred to this register for the remainder of the eligible period of one year.

Salaries and Conditions of Employment.—For positions in the departmental service, Washington, D. C., the entrance salaries are: Junior medical officer, $1,860 a year; assistant medical officer, $2,400 a year; associate medical officer, $3,000 a year; medical officer, $3,800 a year, and senior medical officer, $5,200 a year. Advancement in pay may be made without change in assignment up to $2,400 a year for junior medical officer, $3,000 a year for assistant medical officer, $3,600 a year for associate medical officer, $5,000 a year for medical officer, and $6,000 a year for senior medical officer.

For positions in the field service throughout the United States appointments may be made at the above or at higher or lower salaries, the entrance salary depending upon the qualifications of the appointee as shown in the examination and the duty to which assigned. Conditions of employment in various branches follow. The salaries indicated are for full-time duty; for part-time duty the compensation is determined by the services rendered.

Indian Service.—The entrance salary for physician in the Indian Service ranges from $1,860 to $2,400 a year (usually $1,860), with quarters, heat, and light. Employes and members of their families have the privilege of boarding at the "club" (where one is established) at a cost of from $16 to $20 a month; children under twelve usually paying half rates. The government furnishes all drugs and equipment and means of transportation.

Public Health Service.—The entrance salary for assistant medical officer, Public Health Service, is $2,400 to $3,000, and for associate medical officer is $3,000 to $3,600. Any person between the ages of twenty-three and thirty-one who has had at least one year's internship in an approved hospital may subsequently take the examination prescribed by law for the regular corps. Persons between thirty-two

and forty years of age may take the examination for the regular corps after they have performed five years of creditable service under their appointment as assistant medical officer or associate medical officer, as the case may be.

Coast and Geodetic Survey.—The entrance salary for surgeon in the Coast and Geodetic Survey is $1,680 a year, with allowance for subsistence at $2 per diem, except in the Philippines, where the allowances for subsistence is $2.50 per diem. The number of surgeons in the Coast and Geodetic Survey actually employed and under pay at any time is six. Three of these are employed in Alaska and on the Pacific Coast and three in the Philippines. Officers serving in the Philippines are usually relieved at the end of two years. All surgeons are attached to vessels, and, while their first duty is to conserve the health of the crew, it is expected that they will take part in the work of the Survey. Appointment will be confined to those who indicate willingness to accept service in any of the regions named.

Panama Canal.—The entrance salary for physician, Panama Canal Service, is $225 a month; promotion may be made in steps of $8.33 up to a maximum of $366.87 a month, and to higher rates for special positions. The salary begins on the date of sailing for the Isthmus. Employes are supplied bachelor quarters at a charge for rent, furniture, water, electric light, and janitor service at approximately $9 a month. Family quarters are supplied when available at a rental of $10 to $25 a month, according to class, and an additional charge is made for electric current, water, and fuel, based on the cost of the service. Meals may be obtained at the Canal Zone restaurants on the Isthmus at about 50 cents each and upward. Vacancies in the Canal Zone hospitals are filled by the detail of officers of the Medical Corps of the Army; openings for civilian physicians, therefore, occur only in the service outside of the hospitals proper, and are few and infrequent.

Veterans' Bureau, Field Service.—Positions of physician and medical examiner, for full-time duty: interne (junior medical officer register) $1,200 a year with quarters, subsistence, and laundry. Associate medical officer, salary range $3,300 to $3,900, entrance salary $3,300. Medical officer, salary range $3,800 to $5,000, entrance salary $3,800. Senior medical officer, salary range $5,200 to $6,000, entrance salary $5,200. Appointments to fill existent vacancies will be from examinations held for the several grades. The salaries indicated are stated without any other allowances. The position of senior medical officer is rarely or never certified, as promotions to a higher grade are made from physicians already on duty when suitably qualified personnel are available. Promotions to a higher grade or increase of pay within the grade or to the maximum of the grade will be made only when the position occupied justifies the grade and work accomplished demonstrates ability. Appointments for part-time duty will be made at salaries to be determined by the services rendered. Persons appointed as interne, after satisfactorily completing a year's service within the Veterans' Bureau, may, if desirous of remaining in the service of the Bureau, qualify as assistant medical officer at a salary ranging from $2,400 to $3,000.

SOCIETY PROCEEDINGS

Audubon County Medical Society

The third quarterly meeting of the Audubon County Medical Society was held November 10, 1925, at the Community building, Audubon. Those present were: Drs. L. E. Jensen, John Riley, W. R. Koob, P. E. James, P. Soe, R. F. Childs, and J. M. Fulton.

Lunch was served at six o'clock. Much discussion was had in regard to a hospital which is very much needed at Audubon. Dr. Childs submitted plans with costs of building but no definite conclusion was reached. The efforts will be continued.

J. M. Fulton, Sec'y.

Bremer County Medical Society

July 30, 1925

Bremer County Medical Society held a public meeting at Denver, Iowa, on July 30, 1925. Dr. F. J. Epencter and his wife entertained the visiting doctors by serving a bounteous dinner at their home at 6:30 p. m. After voting the doctor and his wife royal entertainers the doctors adjourned to the school house where a short business session was held. Dr. Graening gave a talk on small-pox and read a circular letter from the state board of health on the small-pox situation in Cedar Rapids. It was particularly stressed that vaccination without reaction is not protective no matter how many times attempted. Also that vaccination does not always afford a life-long immunity and that in the presence of an epidemic vaccination should be repeated. Dr. Beechly of Spartansburg, South Carolina, then spoke and told about the work of the full time health officer as he functions in those counties employing one in South Carolina.

Dr. Bries then extended the society an invitation to meet in Sumner at their next meeting and the invitation was accepted. Drs. Paul Gardner of New Hampton and B. Ensley of Shellrock, were chosen to give papers for that meeting.

Members present: Drs. West, Graening, Kern, Gernsey, Sparks, Epeneter, Robinson, Clasen and Jay.

Visitors present: Drs. Ensley of Shellrock, Paul Gardner of New Hampton, Dr. Beechly of Spartansburg, South Carolina, and Dentist Kromer of Waverly.

Adjourned to meet in Sumner the twenty-fifth of August.

August 25, 1925

Bremer County Medical Society met in Sumner, Tuesday evening, August 25. The visiting doctors were entertained to a dinner at the Sumner Hotel

by hosts Doctors Bries and Whitmire, after which the company adjourned to the office of Drs. Bries and Whitmire, where the scientific session was held. The meeting was called to order by President Dr. Sparks and a vote of thanks was extended to the hosts for their hospitality. Dr. Ensley of Shellrock, then gave a paper on Rabies. This was discussed by Drs. Rohlf, West, Sparks and Jay. Dr. Paul Gardner of New Hampton, followed with a short resume of the papers on Obstetrics as published in the Iowa State Medical Journal from an early date until the present time. Discussion by Drs. Gernsey, Clasen and Jay. Dr. Shellito of Independence, councilor for this district, gave us a few words of encouragement and the meeting adjourned to meet in Waverly on the twenty-ninth of September.

September 29, 1925

Bremer County Medical Society held its regular monthly meeting at St. Joseph's Mercy Hospital at Waverly, Iowa, Tuesday evening, September 29, 1925. After a dinner at the club cafe the meeting was called to order at the hospital by the president Dr. Sparks. A tuberculosis and heart clinic to be given by the Bremer County Medical Society was announced for November 20th and the doctors of surrounding counties were invited to be present. Dr. M. N. Gernsey then read a paper on Blood-Pressure, the discussion of which was entered into by all present.

Members present: Drs. Sparks, Gernsey, Jay, Graening, Rohlf, West, Kern and Osnes. Visitors present: Drs. McDannell and Stuart of Nashua, Evans of New Hartford, Ensley of Shellrock, Day and Youngs and Dentist Fields of Clarksville, and Dentist Hemingway of Waverly.

Adjourned to meet in Waverly on October 27.

October 27, 1925

The regular monthly meeting of the Bremer County Medical Society was held in Waverly, Tuesday evening, October 27. After a dinner at the Club Cafe the doctors met at St. Joseph's Mercy Hospital and were called to order by the president, Dr. Sparks. After a business session Dr. Gernsey gave a review of his recent visit to the Mayo Clinic and Dr. West gave a resume of his recent attendance at the Crile Clinic in Cleveland. These remarks were followed by a talk on Life Insurance Examinations by Dr. Graening and the society then adjourned until November.

Dr. F. R. Sparks, Pres.
Dr. M. N. Gernsey, Sec'y.

Dallas-Guthrie Medical Society

The quarterly session of the Dallas-Guthrie Medical Society was held recently at Panora, with Drs. W. V. Thornburg, George Elvidge, M. N. Voldeng and F. B. Langdon on the program. Officers were elected as follows: Dr. H. E. Klienberg of Redfield, president; Dr. Roy R. Jones of Panora, vice-president; Dr. S. J. Brown of Panora, secretary and treasurer. The next meeting of the society will be held in Adel in January.—Adel News.

Fayette County Medical Society

The following meetings were held by the Fayette County Medical Society. At each meeting there was a dinner served by one of the committees.

September 14, 1925, meeting at the Country Club at West Union. Paper by Dr. Graening of Waverly, Diabetes, Etiology and Treatment. Paper by Dr. Boyd, department of pediatrics, State University of Iowa, Acidosis and Alkalosis.

October 6, 1925, meeting at the Home Cafe at Oelwein. Paper, Clinical Significance of the Blood-Shot Eye, Dr. Floyd Follingsworth, Charles City.

Dr. Hall, Sec'y.

Fayette County Medical Society

The regular meeting of the Fayette County Medical Society was held September 14 at West Union. A sumptuous dinner was served in the spacious quarters of the West Union Club House, and, at the conclusion of the meal Dr. Darnall, for fifty-four years a physician in West Union, spoke in a reminiscent vein of the pioneer days of medical practice. Dr. Darnall, though he has passed the eightieth milestone on this wondrous journey called life, has a breadth of mind and keenness of perception that would be a credit to any of the "youngsters" in the profession. The guests were then privileged to hear two interesting addresses. Dr. Graening of Waverly gave an informative and interesting lecture on diabetes, and Prof. Boyd of the University of Iowa, had a paper on acidosis. The close attention accorded the speakers and the interest manifested by the listeners bore ample testimony of the quality of the addresses.

Among the visitors were two German physicians, recently over from the old country, who are connected with the hospital at New Hampton.

The meeting was one of the largest and most interesting gatherings which the Fayette County Medical Society has held for some time. Those present were:

West Union—G. D. Darnall, T. A. King, C. D. Mercer, Donald Camp. Oelwein—C. D. Bothwell, C. J. Cooney, Elizabeth Smith Kennedy, F. P. Leehey, J. B. O'Connor, Howard Risk, D. W. Shine, D. W. Ward, George N. Wassom. Fayette—J. D. Parker. Clermont—L. L. Carr. Elgin—H. S. Hadsel, L. Ulving. Wadena—J. R. Wood. New Hampton—Paul Gardner. Maynard—C. C. Hall, B. Artis Hall. Arlington—S. M. Hazard, F. C. Saurbry. Hawkeye—T. N. Walsh. Waucoma—J. M. Smittle. Volga City—S. C. Ainsworth. Farmersburg—C. T. Grattidge. Hazelton—J. W. Donnell, H. H. Hunt.

The entertainment was provided by the following: Dr. and Mrs. L. L. Carr, Dr. and Mrs. C. D. Mercer, Dr. and Mrs. T. A. King, Dr. G. D. Darnall, Dr. I. D. Jerdee, Dr. T. N. Walsh.—West Union Gazette.

Jasper County Medical Society

The Jasper County Medical Society in cooperation with the county Christmas Seal Sale Organization, held a chest clinic for diagnosis of heart and lung trouble, at the court house from 9 to 4 o'clock, Friday, September 15. Dr. John Peck, tuberculosis specialist, and Dr. Merrill Myers, heart specialist, both of Des Moines, will conduct the clinic.

Madison County Medical Society

The Madison County Medical Society held their semi-annual meeting Tuesday afternoon, October 27 at the office of Dr. W. H. Thompson in Winterset, at which time in co-operation with the Iowa Tuberculosis Association and the County Public Health Association, they held a chest clinic, conducted by Dr. John H. Peck and Dr. Merrill Myers, both of Des Moines. These men are both eminent specialists in their line, Dr. Peck treating diseases of the lungs, while Dr. Myers confines his practice to diseases of the heart. Miss McMichael, a public health nurse, was in the county the day preceding and the day of the meeting to render assistance.

Marion County Medical Association

The Marion County Medical Association held a meeting in Pella, Thursday, September 24. The meeting was held in the Legion Hall. A very fine program had been arranged for the event and the Pella doctors had prepared for a grand good time, but on account of the bad condition of the roads, many of the physicians of the county were unable to attend. Notwithstanding the small attendance those who were present had a most enjoyable meeting. The general business of the organization was taken up and disposed of after which matters of importance to the fraternity were discussed and in some cases action was taken. Several good and instructive talks were delivered during the afternoon and evening. Among the speakers were Drs. Harp and Thomas of Prairie City.

Marshall County Medical Society

More than fifty doctors from Poweshiek, Story, Jasper, Benton, Polk, Tama, Hardin, and Marshall counties were the guests of the Marshall County Medical Society at its annual fall clinic held at Elmwood Country Club, Wednesday, September 23. Four physicians, surgeons and specialists, all prominent in the profession in the Middle West, were the speakers. They were Drs. A. C. Nickel and Walter E. Sistrunk of the Mayo Clinic, Rochester, Minnesota; Dr. George F. Suter, Chicago and Dr. W. W. Duke, Kansas City.

Drs. Nickel and Sistrunk spoke in the afternoon before an audience of about fifty. Nearly sixty attended dinner at the club at 6:30 and remained for two additional lectures by Drs. Suter and Duke.—Marshalltown Times Republican.

Plymouth County Medical Society

Members of the Plymouth County Medical Society met in Remsen, Thursday night, October 1 for the regular quarterly session. About fifteen members were present. Dr. J. E. McGovern of Remsen, president of the society, read a paper on Mongolian Idiocy, and Dr. A. H. Jasham contributed an interesting address on Investments, which found much favor among those present. A number of topics of interest to the profession were discussed.—Le Mars Sentinel.

Scott and Rock Island County Medical Societies

An interesting exposition of the treatment and cure of syphilis, accompanied by lantern slides, was presented by Dr. P. A. O'Leary of Rochester, Minnesota, head of the section of dermatology and syphilology of the Mayo Clinic, before a joint meeting of the Scott and Rock Island County Medical Societies at the Davenport Chamber of Commerce October 6.

Dr. O'Leary gave a discussion of the diseases, with informative figures on the percentage of treatment and cure and of those who resisted the treatment.

The two societies appointed a committee consisting of Drs. J. I. Marker, C. E. Block and P. A. White to examine the practicability and desirability of having periodic health examinations, as is now the practice in some cities. The committee will prepare a questionnaire to be submitted to the members of the medical society, and if favorably received some plan of putting it into effect will probably be brought before the public.

Dr. L. H. Kornder of Davenport gave a report of clinical observations in Europe made during the tour this summer conducted by the Tri-State Medical Society. He discussed, among other things, the hospitals in England and pointed out how in London the seventeen medical societies that were formerly in existence had been fused into one strong society by Sir William Osler, eminent physician who died last year and who gained wide publicity from his statement that every one past forty years of age should be chloroformed.—Davenport Times.

Van Buren County Medical Society

A called meeting of the Van Buren County Medical Society was held in Keosauqua Tuesday afternoon, October 27, at the office of Dr. C. R. Russell. The meeting was attended by Dr. S. A. Spilman of Ottumwa, president of the Iowa State Medical Society; Dr. H. A. Spilman of Ottumwa; Dr. Crow of Burlington, councilor of the district society, and Mr. Throckmorton of Des Moines, financial secretary of the State Society. The following physicians from Van Buren county were present: C. R. Russell, J. A. Craig and E. E. Sherman of Keosauqua; R. N. Cresap of Bonaparte; F. H. Graber of Stockport; D. G. Matthews of Cantril, and Dr. Pollock of Douds. This meeting was held to stimulate interest in the county and state organizations.

Wapello County Medical Association

Dr. Lawrence D. Smith of Des Moines, gave an interesting and highly instructive lecture before the Wapello County Medical Association at the Y. M. C. A. auditorium, Ottumwa, October 6.

Dr. Smith's talk on Recent Advancement of Modern Medicine was illustrated with slides, and he told graphically of the ravages of black small-pox and other serious diseases. The general public had been invited to this lecture and Dr. Smith was greeted by a packed house—Ottumwa Courier.

Austin Flint-Cedar Valley Medical Society

The autumn meeting of the Austin Flint-Cedar Valley Medical Society was held at Nashua, Tuesday, October 6, about sixty of the profession being here to participate in the meeting. The morning and afternoon programs were held at Masonic hall, Dr. J. McDannell, president of the society in charge of the meeting.

At the morning session the subjects discussed and the leaders were: Ovarian Pregnancy, Dr. R. M. Mayne of Greene; Madelung's Deformity, Dr. W. J. McGrath, Elkader; Some Surgical Conditions Found in the Lower Abdomen, Dr. M. J. McGrane, New Hampton.

At one p. m. the program was opened by a paper, Chorea, by Dr. F. R. Sparks, Waverly; Diagnosis and Management of Abortions, Dr. P. E. Stuart, Nashua; Intestinal Obstruction, Dr. J. E. Brinkman, Waterloo; Practical Therapeutics, Dr. C. C. Smith, Clarksville; Past President's Address, Dr. C. F. Starr, Mason City; A Few Observations of European Clinics, Dr. W. A. Rohlf, Waverly.

In the evening a banquet was served to the visiting physicians and their wives and a few guests, about a hundred places being spread. The banquet was served by the Nashua Chapter O. E. S.—Reporter, Nashua.

Northwest Iowa Medical Society

The Northwest Iowa Medical Society held their regular fall meeting at Rock Rapids, Thursday, November 5.

A banquet was held at Hotel Marietta at 7 p. m., after which the doctors adjourned to the Farmers room on the first floor of the court house, where the annual business meeting, election of officers and the scientific program took place. The officers of the society are: Dr. W. C. Hand, Hartley, president; Dr. F. E. Chalmers, George, vice-president; Dr. J. W. Myers, Sheldon, secretary-treasurer. Censors—Dr. A. J. Meyer, 1926; Dr. J. A. Wagner, 1926; Dr. D. G. Lass, 1928; Dr. Peter J. Dahl, 1925.

The program presented as follows:

A Study of the High Mortality of Early Infancy, Dr. Melgaard, Sioux City.

The Surgical Emergencies of General Practice, Dr. Gilbert Goeffrey Cottam, Sioux Falls, South Dakota.

High Blood-Pressure and its Treatment, Dr. W. R. Brock, Sheldon.

Addresses by Dr. Tom Throckmorton, secretary of Iowa State Medical Society and Dr. Moorehead, councilor of the eleventh district.

Fiftieth Annual Meeting of the District Medical Society

Physicians from southeastern Iowa were in Washington on Thursday, October 15, to attend the fiftieth annual meeting of the District Medical Society. The society was formed half a century ago and the convention was in the nature of a jubilee observance.

The late Dr. J. H. Hull was one of the organizers and his son, Dr. H. C. Hull of Washington, is now president of the society. Dr. T. F. Beveridge of Muscatine, vice-president, and Dr. D. F. Huston of Burlington, secretary and treasurer.

Sessions of the convention were held at the Y. M. C. A., with a morning session at ten o'clock and the annual luncheon at twelve o'clock. The papers on the scientific program were limited to thirty minutes and discussions to five minutes. Luncheon speeches limited to ten minutes. The program was as follows:

Morning Program

President's address, Dr. H. C. Hull, Washington.

Diseases of the Biliary Apparatus, Dr. John F. Herrick, Ottumwa.

Thrombosis of the Coronary Arteries. Diagnostic Features and Consideration of Focal Infection as an Etiologic Factor, Dr. P. T. Bohan, Kansas City, Missouri.

Foreign Bodies in the Air and Food Passages. Report of Forty-one Cases. (Lantern demonstration.) Dr. Thomas R. Gittens, Sioux City.

Internal Derangement of the Knee Joint, Dr. Wm. R. Cubbins, Chicago, Illinois.

Does Public Health Work Pay the Public? Dr. C. A. Boice, Washington.

Luncheon at Y. M. C. A.

Luncheon Speaker—Our Duty to Organized Medicine, Dr. George B. Crow, Burlington; Councilor First District, Iowa State Medical Society.

Reminiscences, Dr. J. C. Boice, Washington.

Some Observations of Our European Trip, Dr. C. H. Magee, Burlington.—Washington Journal.

Southwestern Iowa Medical Association

The Southwestern Iowa Medical Association met at the Public Library Thursday afternoon, September 17, where notable doctors from the state addressed those in attendance on pertinent medical problems of the day. A large number of out of town physicians were in attendance.

Among those speaking were Dr. John Peck, Des Moines; Dr. Edward J. Harnagel, Des Moines; Dr. H. C. Willett, Des Moines; Dr. E. T. Edgerly, Ottumwa, and Dr. F. E. Sampson, Creston.

The officers of the association are: President, Dr. Leslie Lamb, Lorimor; vice-president, Dr. W. F. Amdor, Carbon; secretary, Dr. John C. Parsons, Creston.

Des Moines Homeopathic Medical Society

Dr. and Mrs. E. E. Richardson, 727 North Western avenue, Ames, entertained the Des Moines Homeopathic Medical Society Monday evening, September 15, at a picnic supper at their home.

Dr. Fred Alden read a paper describing his recent trip with the American medical men and their families, 750 in number, to the hospitals of Toronto and Montreal, Canada; London, Liverpool, Manchester and Leeds, England; Dublin and Belfast, Ireland; Glasgow and Edinburgh, Scotland; and Paris, France. The paper was a resume of what is new in medicine and was greatly enjoyed by the visiting physicians.

Among those present who were from Des Moines were Drs. A. M. Linn, Erwin Schenk, C. E. Holloway, M. A. Royal, E. W. Rowat, with their wives, also Drs. Fred Alden, Alice Humphrey-Hatch, and C. J. Loizeaux. Guests of the society from Ames were Dr. and Mrs. D. W. Harman, Mrs. E. C. Brown, Dr. C. A. Alpin, his daughter and sister, Miss Clara Alpin.—Ames Tribune.

MEDICAL NEWS NOTES

Physicians Can't Renew Alcohol Permits if They Haven't Paid Fee

Iowa physicians seeking renewal of federal narcotic or alcohol permits may meet with denial if they failed to pay the $1 annual registration fee imposed by the last state legislature.

Andrew McCampbell, federal prohibition administrator for the Iowa and Nebraska district, recently sent to the Iowa State Health Department a list of names of practitioners seeking narcotic or alcohol permits and asked if they were properly registered to practice their profession in this state.

The majority of the names submitted to the state health department for approval have been found to be regularly licensed, but the first of those not licensed under the new law were reported back to McCampbell by the health department.

Resolutions adopted by the Iowa State Medical Association at its last annual convention here opposed the annual license fee imposed by the Forty-First General Assembly of Iowa. Many doctors refused to pay the $1 registration charge in order to demonstrate their opposition to the principle of it.

At the present time, there are approximately 3,600 physicians listed in the state, 600 of whom are not licensed under the new law.

It was because Dr. Donald Macrae had studied war medicine and surgery for years before the European war conflict began that his Unit K of Council Bluffs was selected as the nucleus of the first mobile hospital unit of the allied armies, Dr. Earl Bellinger, major under the doctor in the war, declared at the reunion banquet of the organization at the Grand Hotel, Council Bluffs. Dr. Bellinger served as toastmaster, and brought rousing cheers as he praised the picturesque commander of the famous medical unit.

Forty-two men of Council Bluffs and a half dozen other cities attended the reunion, at which a permanent organization was effected. Dr. Macrae was named as commander; Harold Hetrick, adjutant; Mrs. Sarah Bondo, secretary-treasurer, and Phil Orchard and Gerald Mahon, Misses M. Johnson and Ella McManigal members of the executive committee.

Dr. Macrae is to be commander of the organization so long as it exists.

Vaudeville acts from Omaha shows furnished a part of the entertainment.

A similar reunion will be held next year.—Council Bluffs Nonpareil.

Licensing Businesses

Every citizen has a direct interest in the practice of licensing various businesses. A striking example of the theory is seen in Rock Island, where an effort is being made to place the license of coal dealers so high that it will keep the "little fellows" out of the business. Theoretically, the business license fee is supposed to be just enough to provide for governmental supervision for the protection of the consuming public. In actual practice license fees often amount to a bar against men entering business with a small amount of capital.

The medical, dental, legal and other professions have license fees that must be paid before one is privileged to practice his profession, but these licenses are conditioned by examinations to determine the mental and moral fitness of the applicant. They theoretically have little to do with the question of over-supply of professional men and women. Presumably the professional fields are open to any qualified person.

In recent years the various businesses have organized and in many ways have tried to professionalize themselves. The labor crafts, long ago, took this problem in hand and established rules and condition of entrance into the various crafts. They fixed wages and organized for better conditions of hours and labor and for other objectives considered to be of advantage to the members of the labor unions.

American business for many years was on a purely individualistic basis. This principle had many advantages. It stood for freedom and initiative, for competition and personal enterprise. It also had many disadvantages. It became the direct cause of thousands of business failures. A man would open a grocery or meat market, coal yard or notion store if he thought he could make money, but he often did so without knowing his field or his business. This haphazard method is giving way to group organization. For example, in many cities a barber can not retain his standing in his union if he opens a shop without the approval of the "location committee" of his craft. When he opens a shop in an approved location he has the protection of his union with its

policy of preventing an over-supply of shops in his territory.

In the matter of licensing, the professions and the labor unions are taking a more practical course than are many of the lines of business. They are maintaining certain standards that are intended to benefit both the community and their members. It would seem that until the various lines of business have effective organizations and standards, their business licenses will tend to rise.—Cedar Rapids Gazette.

Approximately fifty physicians and surgeons from northeastern Iowa were in attendance at a goitre clinic in St. Francis Hospital, Waterloo, recently. The clinic was conducted by Dr. J. E. O'Keefe and associates.

The physicians in attendance, representing many towns and cities, came to take advantage of this opportunity for the study of goitre and means for its prevention.

Agents of the state board of health were recently checking up on the 10,000 licenses granted Iowa doctors to practice, since licensing has been required in this state, to determine how many are practicing without legal sanction of the state.

Of this number, approximately 3,600 have paid up licenses, less than 6,000 have died, or discontinued practice in this state, and a number, which may reach as high as 600 are practicing without due authority from the state, Dr. Don Griswold, commissioner of public health, stated.

"Many cases also have been discovered where sons of physicians are practicing with their fathers without having completed the required training courses and having received certificates."

Warning of the presence of malignant types of diphtheria and scarlet fever in Iowa is being mailed to physicians of the state today by Dr. Don M. Griswold, state health commissioner.

Dr. H. R. Sugg of Clinton, member of the state board of health, first reported the more serious types of these diseases to the department after two deaths occurred from malignant diphtheria in his territory.

Immunization of school children in that area and all other sections of the state was recommended recently by Dr. Griswold.

Thirty-nine cases of diphtheria have been reported to the state health department since September 1. During the same period, thirty-seven cases of scarlet fever and thirty-two cases of infantile paralysis also have been reported from all sections of the state. These totals are considerably in advance of the total number of cases of each disease reported for the entire month of August.—Des Moines Tribune.

Iowa State Medical Library

A complete reclassification of the material in the Iowa State Medical library in the historical building, Des Moines, Iowa, is being made by Miss Frances van Zandt, librarian, as a result of a study of a new system originated by James F. Ballard, assistant librarian at the Boston Medical library.

Under the new system, material can be more correctly classified. Miss van Zandt spent several weeks studying and working in the Massachusetts General Hospital library, the library of the Sterling laboratory in New Haven, the Crile and Cleveland Clinic and library and in medical libraries at Yale, Harvard, Cornell, in New York, Philadelphia and Boston.

The system has been adopted by the Rockefeller Foundation, the American College of Surgeons, Medical Library Association, and in many other institutions both in the United States and foreign countries.

The rapid growth of the state medical library and the scope if its work will be increased, says Miss van Zandt, through use of the new plan. The material in the regular periodicals numbering about 200 will be more easily available for physicians as will the 7,200 volumes on technical subjects, circulated for use of medical men. Nearly 7,000 volumes were loaned to more than 2,500 physicians last year.

Emergency calls by long distance frequently come from doctors who want latest reports on treatments for various cases which fail to respond to ordinary remedies. Material is dispatched at once by special messenger.

Material is now being assembled for physicians in many counties who are preparing papers for fall meetings and county conventions.

Books or periodicals are furnished on request. Bibliographies on special subjects will be prepared and available literature furnished.

Physicians who wish to receive periodicals regularly will be listed for as many journals as desired. The loan period on books is two weeks with renewal privileges if they are not in too much demand.

The high cost of medical literature prohibits extensive private libraries. Individual books often cost much above $50 and are almost never available for less than $8 to $10, Miss van Zandt stated.

Dr. George Clark Mosher, who last week was elected president of the American Association of Obstetricians and Gynecologists at the convention at Hot Springs, Virginia. Dr. Mosher's election brings the presidency of the association west of the Mississippi River for the first time. For five years Dr. Mosher has been chairman of the committee on maternal welfare. He lives at the Hotel Lucerne, Linwood boulevard and Harrison street, Kansas City, Missouri.

The first of a series of clinics to be held at Charles City each month at the Cedar Valley Hospital was held Thursday, May 20, with Dr. C. E. Ruth of Des Moines giving the clinic in general surgery.

Several doctors from nearby towns including Dr. Ward and Dr. Sparks of Waverly, Dr. Cordes of Rudd, Dr. Henely of Nora Springs, Dr. Call of

Greene and Dr. O'Keefe and Dr. Wilson of Marble Rock were in attendance at this first clinic.

The clinics will be held the third Thursday of the month under the direction of the medical staff of the hospital. A well known medical authority will be present at each of these clinics, the local profession endeavoring each month to select a man of high rank in the profession to address the association and it is expected that these monthly meetings will have a decided advantage to the medical men of this section of the state.

Mr. Churchill's moving description of the duty of society to provide the industrial worker and his family with security against the distressing effects of exceptional misfortunes, and his picture of the happy time when "many generations of British people may find shelter against some of the storms of life", have alike failed to remove from most American minds the doubts raised by contemplation of the necessary implications of the plan through which it is proposed to attain these desirable ends. The chief of these implications, of course, is that the industrial wage-earners constitute a class apart in such modern industrial and commercial nations as Great Britain—a class that is in reality a veritable proletariat, the members of which can not be expected to be completely self-supporting, self-directing and self-safeguarding like the members of the remaining classes of society, but are entitled to look to those other classes in society for contributions (levied by and distributed through the state) to tide them over the mischances of life. This is a conception of the status of industrial wage-earners, and of their relation to society as a whole, which is completely alien from American ways of thinking and which seems to us necessarily destructive in the long run of the ideals upon which any genuine democracy must be based. We have as yet found it impossible to comprehend how the members of any class in the community can be free and responsible citizens, making their proper contribution to the national life, when that class, however numerous and important it may be, is singled out for special care and protection on the part of the state, with the burden of the costs of such care and protection chiefly borne by the members of the classes that are left to shift for themselves as best they may.

This American feeling about the new British social insurance scheme is unquestionably strengthened by the impression which obtains widely in the United States that the real root of the difficulty which Great Britain has had in getting back to industrial and commercial normality since the war is to be found in the state of mind induced in the country's industrial working class by the social insurance already established, especially unemployment insurance. American observers can find no other explanation for the protracted depression of British industry and trade, with its attendant unemployment and other serious social disturbances, than that British industrial workers as a body, relying upon the support of the state through unemployment insurance and the other social insurances have strenuously resisted acceptance of the stern facts of the post-war economic situation and have to a large extent put their country out of the running in an international competitive sense.

Warning, October 17

The state department of health does not recognize 502 practicing physicians in Iowa as registered to practice in the state because they have not paid the $1 fee for annual registration of their certificates, required under a law passed two years ago.

In order that physicians may be given another chance to register before six important lists of registered physicians are furnished agencies with which doctors must deal and to correct any errors in his records, Dr. Don M. Griswold, state health commissioner, warned all physicians who have not registered of the preparation of the lists.

The lists will go to the federal prohibition administrator, the bureau of internal revenue, the bureau of the census, the American Medical Association, county medical societies and county attorneys.

Unregistered physicians cannot secure intoxicating liquors or narcotic permits and are liable to prosecution by county attorneys for not complying with the medical practice act.

Dr. John A. C. Busby, state epidemiologist, was ordered to Walford, Iowa, to assist in checking an outbreak of diphtheria in that section of Benton county.

Dr. Don M. Griswold, state health commissioner, who sent the epidemiologist to Walford, also wrote the superintendent of schools there, recommending the immunizing of all school children.

As an example of the results to be expected from such treatment, Dr. Griswold referred to the work carried on in three townships of Clinton county, where every resident was immunized three years ago and not a case of diphtheria has occurred since that time.

The previous record of these townships showed that, with only two exceptions, there had been one or more cases of diphtheria every month for the preceding three years, the health commissioner declared.—Benton County News.

There was a gratifying fall in the mortality from puerperal conditions among the 15,000 industrial policyholders of the Metropolitan Life Insurance Company in 1923, according to the January Statistical Bulletin issued by that company. The death rate per 100,000 for the year was 17.9 as compared with 19.0 in 1922, and 23.0 in 1920. With the single exception of the year 1916, when the rate touched 17.6, the 1923 figures was the lowest ever recorded among the industrial population.

Louis I. Dublin, Ph.D., the Metropolitan's statistician, in commenting on the above figures, said:

"Diseases incidental to pregnancy and childbirth are still an important field for public health work. The mortality can be further reduced by greater em-

phasis on nursing supervision during pregnancy, at the time of delivery and during the immediate postpartum period. Especially encouraging are the lower death rates last year from puerperal septicemia and albuminuria. The former in particular may be brought down still further by the closer attention of obstetricians and health officers to sources of infection."

The decrease in the death rate from puerperal septicemia referred to was from 7.4 in 1922 to 6.9 in 1923. The death rate from puerperal albuminuria and convulsions was 4.2 in 1923 as compared with 4.7 the previous year.

Doctor Oliver J. Fay, Des Moines, took part in a symposium on Industrial Surgery at the meeting of the New York County Medical Society held in the New York Academy of Medicine on October 26, 1925.

Doctor Fay presented the subject of "The Evolution of Functional Nervous Disorders in Industrial Surgery". The other papers in the symposium were on the subjects "Industrial Spine", by Doctor Arial W. George of Boston, and "Physiotherapy in Industrial Injuries", by Doctor Harry E. Stewart of New Haven.

Doctor Fay was the guest of the society at the dinner preceding the meeting.

The Rockefeller Institute for Medical Research has announced the release of the drug known as Tryparsamide for use in the treatment of human and animal trypanosomiasis (African sleeping sickness and **mal decaderas)** and selected cases of syphilis of the central nervous system. This action is based on results reported from clinical investigations which have been in progress for several years. The drug will be manufactured by the Powers-Weightman-Rosengarten Co. of Philadelphia, and will become available through the regular trade channels about January 1, 1925. In releasing the drug for the benefit of the public, the Rockefeller Institute desires it to be known that the Institute does not share in any way in profits that may be derived from the sale of the drug and that, with the cordial cooperation of the manufacturers, provision has been made for the maintenance of a schedule of prices on as low a basis as possible.

Sir Aukland Geddes Assumes Leadership of Social Hygiene Council

Sir Aukland Geddes, former British ambassador to the United States, has accepted the presidency of the British Social Hygiene Council. As Sir Aukland Geddes is already president of the Society for the Prevention of Venereal Disease, it is anticipated that, if the present efforts are continued and extended, venereal diseases in England will be reduced to a minimum.

It is significant that the main point of difference between these two organizations was adjusted by the report of Lord Trevethin's committee relative to the use of personal prophylaxis in the prevention of venereal diseases. In this connection the London Correspondent of the Medical Journal of South Africa writes: "From a medical point of view prevention is better than cure, and the majority of medical men would probably approve of personal disinfection as a sensible precaution. Not only does such a course lessen the risks to the person who exposes himself to infection, but it is also a safeguard against the direct inoculation of others, more especially spouses and children."

HOSPITAL NOTES

Terms under which the Iowa Lutheran Hospital authorities at Des Moines would agree to take over the Eleanor Moore County Hospital and continue its operation were given to a committee of the county hospital board trustees and members of the Boone County Medical Society at a meeting held in Des Moines recently.

The trustees committee making the trip to Des Moines was composed of the president of the board, Charles Otis, and Mrs. W. W. Goodykoontz and Mrs. A. I. Lee. The medical society was represented by Drs. N. M. Whitehill, A. B. Deering and William Woodburn. They received the terms and the hospital trustees will consider them at a meeting to be held in the near future.

The Iowa Lutheran Hospital Association asked, in brief, that the Eleanor Moore County Hospital be leased to them for a period of five years, with the privilege of re-leasing it after that time for a term of ninety-nine years. A guarantee by the county that they would suffer no loss from the operation of the Eleanor Moore County Hospital during the five year period was also asked. Before they take over the hospital here, the Lutheran Hospital authorities want it to be re-built according to their plans. The cost of this latter item was unofficially estimated at $50,000, by parties not members of the hospital board.

The local hospital authorities are to have another meeting with the Des Moines people in the near future. What their attitude toward the proposition will be, has not been indicated as yet.—Boone News Republican.

MEDICAL ARTS BUILDING

The Medical Arts building in Burlington is said to be making rapid progress.

The profession of Burlington is to be congratulated on the enterprise in providing a home for doctors and dentists. The moral and social effect of a community home will in every way unify the common interest of the medical profession.

REAR ADMIRAL STITT

It has been announced that Rear Admiral Edward R. Stitt is to be re-appointed surgeon general of the navy, for another period of four years.

PERSONAL MENTION

In the Sioux City Tribune of October 5, may be found two pictures of a distinguished Sioux City surgeon, who became noted as far back as thirty years ago. It appears that Dr. Prince Sawyer in 1892, 1893 and 1894 was a celebrated football player and in 1894 was captain of the Iowa University football team which won many victories. As a reward for his valuable services to the University, he is to receive the honorary degree "I" sweaters. We are not familiar with these degrees, but congratulate Dr. Sawyer on this distinguished recognition.

Dr. G. M. Thein, a graduate of the Iowa University college of medicine, has located in Decorah and will limit his practice to diseases of the eye, nose and throat.

Suffering from an attack of pleurisy with effusions, Dr. Wilbur Conkling, 1003 Penn avenue, Des Moines, plans to travel south for his health, possibly to New Mexico, as soon as he has sufficiently recovered to make the trip. Dr. Conkling has been confined to his bed for the last seven weeks, but is said to be slowly improving. It will be some time, however, before Dr. Conkling will be able to make the trip, it was said.

Dr. William A. Hanson has come to Fort Dodge from Rochester, Minnesota, to take over the practice of Dr. A. G. Asher, who has recently moved to Iowa City. Dr. Hanson is a graduate of the University of Minnesota medical school, and has spent the last three and a half years practicing medicine in Rochester. Dr. Hanson will specialize in consultation and diagnosis. He will occupy the offices formerly used by Dr. Asher at 505 in the Carver building.

Dr. T. F. Beveridge of Muscatine was elected president of the Southeastern Iowa Medical Society at the annual convention of the organization. Dr. J. P. Mathias of Mediapolis was elected vice-president and Dr. D. F. Huston of Burlington secretary and treasurer. Dr. J. H. Chittum of Wapello and Dr. Roy A. McGuire of Fairfield were elected to the board of censors. The convention next year will be held at Muscatine.

Dr. Paul Kubitschek, who for the past four years has been at the Psychopathic Hospital at Osawatomie, Kansas, has been awarded the Fellowship and will receive three years of study in Philadelphia, Pennsylvania. He will specialize in brain and nerve study.—Eagle Grove Times.

J. J. Lambert, professor in the college of medicine, Iowa City, for many years, has resigned his position in the university faculty. After about November 1, he will be associated with his brother, Dr. Charles Lambert in New York. The Iowa medical man rceived his medical degree here in 1909, and took up a place on the staff of medical instructors, while Dr. Charles Lambert was graduated from the same college in 1903. The eastern physician was assistant superintendent of the Bloomindale Hospital at White Plains, New York, for nine years and has had a wide private practice at White Plains and in New York city for the past three years.—Davenport Democrat.

Dr. J. E. O'Keefe of Waterloo, was host to about fifty physicians from over central Iowa who gathered during the late afternoon, October 9, for a clinic on goitre. Dr. O'Keefe and his associates conducted the clinic at St. Francis Hospital and later entertained his guests at a dinner in his home.

Dr. H. R. Sugg of Clinton, city health officer and member of the state board of health, was appointed by Governor John Hammill, together with Dr. Don Griswold, secretary of the state board of health, to represent the state of Iowa at the convention of the American Public Health Association at St. Louis, Monday, Tuesday and Wednesday, October 19, 20 and 21.

Dr. William Jepson, 2000 Nebraska street, Sioux City, was elected president of the National Association of Professional Men's Clubs at the national convention in Milwaukee, Wisconsin. Other delegates to the national convention were Dr. C. N. Jepson and Superintendent M. G. Clark. M. C. Potter of Milwaukee, was elected vice-president of the association; Henry Deutsch of Minneapolis, was elected treasurer, and Kay Todd of St. Paul, was elected secretary.

Dr. George P. Carpenter of Cedar Rapids, celebrated his seventy-ninth birthday September 21. Dr. Carpenter bgan the practice of medicine in 1868, covering a period of fifty-seven years. On account of failing health, he finds it now a convenient time to retire from active practice.

Dr. E. G. Grove as removed from Fairfield and located in Boone, with offices in the Boone National Bank building and will devote his attention to general surgery, gynecology and diseases of eye, ear, nose and throat.

The members of the Iowa profession will be interested in hearing of the recent experiences of Dr. E. E. Munger of Spencer, who has contributed so generously to hospital work in Iowa and we are taking the liberty of printing a private letter, recently received from Dr. Munger.—Editor.

Hallock, Minnesota, November 2, 1925.

D. S. Fairchild, M.D.,
Editor Iowa State Medical Journal.

Dear Doctor Fairchild:

Under separate cover I am mailing you a couple of local papers and I am also writing Mrs. Munger to send you copies of recent Spencer papers, all of which I am sure you will appreciate without comment on my part.

I came up here on a business trip, and on August 18 fractured my left hip. I am now standing on one foot and the indications are for a near 100 per cent result.

I have had much time to reflect on the rural health problem and to note the benefits of this remarkable little hospital, Kittson War Veterans' Memorial Hospital Association, in the territory of the hard hit

poor northwest wheat farmers. It was built in 1921 —twenty-four wards, full all the time and quite self-supporting.

Yours truly,
(Signed) E. E. Munger,
Spencer, Iowa.

Schaller, Iowa, September 17, 1925.

Dr. David S. Fairchild, Editor,
Clinton, Iowa.

Dear Doctor:

I am writing to correct an error in the September number of the Journal in regard to the successor of the late Dr. T. J. Andre.

I have moved in here as Dr. Andre's successor and am occupying his building. I was formerly at Oakland, Nebraska.

Thomas Andre, Jr., has just entered upon the freshman year in medicine at the University.

Fraternally,
(Signed) J. R. Dewey, M.D.

MARRIAGES

Dr. G. Wesley Doolen of Davenport and Miss Flossie Roesland of St. Lukes Hospital, Davenport, were married November 5. Dr. Doolan is a graduate of the medical department, Illinois University.

Dr. C. M. Cantrell of Vinta and Miss Mildred Ruth Handerson of La Crosse, Wisconsin, were married October 21 at La Crosse.

OBITUARY

Dr. William C. Phillips of Clarinda, died at Iowa City, October 7, 1925.

Dr. Phillips was born near Essex, Iowa, December 12, 1876, graduated from the Clarinda high school and later from the School of Pharmacy of Northwestern University. Graduated in medicine from the College of Physicians and Surgeons, Chicago (University of Illinois), and served an internship at St. Elizabeth's Hospital. While a student in medicine, he served in the Marine Hospital, Chicago, and in Tampa, Florida.

After receiving his medical degree, he located in Clarinda where he practiced twenty-two years. During the World War he enlisted in the medical department of the army and was stationed at Fort Riley. At the close of his service he returned to his former practice at Clarinda. June 16, 1909, he married Mary Elizabeth Brown, who survives him. About two weeks before his death, under the direction and attendance of Dr. Powers, Dr. Phillips was taken to the University Hospital, where he died October 7.

Dr. Phillips was a member of the Page County Medical Society, the Iowa State Medical Society and the American Medical Association.

He was a member of the Masonic Fraternity and was master of his lodge in 1910-1911 and district lecturer of the Iowa Grand Lodge. Dr. Phillips was highly esteemed in his community, as a skillful and conscientious physician. His loss is keenly felt in Clarinda, and surrounding country.

Dr. George E. Kincaid, 503 Franklin street, Lyons, died Friday evening, October 2, 1925, at 6:45 o'clock at Jane Lamb Hospital, after an illness of two and one-half months.

George Edward Kincaid was born October 11, 1868, in Muscatine. He received his early education in the schools of Muscatine, and attended Barnes Medical College at St. Louis, Missouri, later completing a post-graduate course in Chicago. November 24, 1902, he was united in marriage with Miss Grace Gold of St. Louis, Missouri, and since that time had been a resident of Lyons and actively engaged in the practice for the past twenty-six years.

Dr. Enoch Anthony, for the past quarter of a century a well-known physician of Ottumwa died August 20, 1925, at Ottumwa Hospital, where he had been a patient since the previous Sunday. He had been ill for two weeks.

Dr. Anthony was a graduate of the Keokuk Medical College and when he first came to Wapello county to practice he settled at Competine, later moving to Highland Center and then coming to Ottumwa. The family home has been at 1147 North Court street for a number of years.

The survivors, in the immediate family, are the widow, Mrs. Mary E. Anthony; son, Dr. W. E. Anthony, and daughter, Mrs. Jesse F. Haring, both of this city.

Dr. Anthony was sixty-six years old August 14. His office for several years has been at 107 North Market street.

Jeramiah Allen Replogle, son of George B. and Anna McGee Replogle, was born in Appanoose county, Iowa, October 10, 1859. Departed this life September 18, 1925, aged sixty-five years, eleven months and eight days. He resided with his father in Appanoose county, Iowa, until near his majority when he and his brother Henry engaged in farming for a few years. The brothers then mutually agreed to quit farming and attend school.

They both attended Ames College where they graduated in 1892, Dr. J. A. Replogle in the veterinary department and Dr. Henry in the literary department.

After graduating from Ames Dr. Replogle settled in Centerville, Iowa, where he practiced his profession and where he united in marriage with Maggie Gedney. To this union was born a son, the mother and child only living a few hours after the son's birth.

After the death of his wife and child he attended the medical school at the State University at Iowa City, Iowa, graduating in 1898. He then returned to Centerville, Iowa, where he practiced medicine for six years, during which time he was married to Tina Mitchell, who was taken by death soon after their marriage.

Upon the death of his brother Henry, who was practicing medicine at Udell at the time of his accidental death on May 27, 1904, Dr. J. A. Replogle moved to Udell and took up his brother's practice on June 7, 1904, where he practiced medicine until his death.

On August 24, 1915, he was married to Minnie A. Whisler, who survives him. He is also survived by two brothers and two sisters, A. J. Replogle of Corpis Christi, Texas, and John Replogle of Udell, Iowa, Mrs. Elnora Downing of St. Louis, but who is now on a visit with her husband in Europe, and Mrs. Katie Vaught of Prague, Oklahoma, many nieces, nephews, and a host of friends. He had been a member of the Christian church for many years.

Dr. Replogle was of a quiet disposition, loyal in friendship, true companion, a loving and kind husband. As a physician he was untiring in his efforts to assist his patients, no weather was too bad or difficulties too great for him to make an effort to relieve the suffering of those who called him for his services. Dr. Replogle was tender hearted, to see or know suffering affected him greatly. Those who were close to him know that he shed many a tear of sympathy and spent many an hour in behalf of his patients that they or the public never knew of or even suspected.

Dr. Replogle was always found ready and willing to assist in any public enterprise for the advancement of the community in which he lived. He gave liberally to all the churches as well as to his own. He was wise in council and safe in consultation and his departure has left a vacancy in the home and the community that will be hard to fill.

Dr. James Moorhead, seventy-five, died at 5 a. m. Sunday, October 11, 1925, after an illness of a year and a half following a stroke of paralysis. Dr. Moorhead was a medical practitioner in Marion since 1893 and from 1894 until Mr. Muirhead's death was a partner of the late Dr. G. S. Muirhead.

Dr. Moorhead was born at Millersburg, Ohio, April 1, 1850 and came with his parents, Joseph and Clara A. Moorhead to Iowa in 1855. The family bought a farm near Ely and lived a few years in a log house. The family moved to Marion in 1881 when Dr. Moorhead's father was elected county auditor, a position he held six years.

Dr. Moorhead taught school as soon as he was eighteen and attended Cornell College three years. In 1876 he entered the drug business in partnership with Dr. Terry at Ely and served as postmaster of the town for ten years.

After taking a two-year course in pharmacy at Chicago he opened a drug store at Cedar Rapids but finally decided to study medicine and completed the medical course at the State University of Iowa in 1893. He was associated in the practice with Dr. W. A. Hubbard at Cedar Rapids but soon came to Marion. He took a post-graduate course at Chicago in 1895.

He was at one time a member and president of the Marion school board. He was an inveterate reader and possessed one of the best private libraries in the county, many of the books being copies of limited editions, some of them containing rare engravings and others having particularly fine bindings. He belonged to many medical associations and secret societies, for some of which he was medical examiner.

He was married December 24, 1871 to Miss Eliza J. Stream, who as well as two sons born to them, died, but a daughter, Mrs. O. C. Olney, and a grandson, James Olney of Cedar Rapids survive.

Dr. Moorhead was married three years ago to Mrs. Retta Howard, who survives him. He also leaves surviving one sister, Mrs. Anna Smythe of Wichita, Kansas. A brother, M. H. Moorhead died just a month ago.—Cedar Republican.

Dr. Burr C. Minkler, seventy-year-old pioneer resident of Des Moines, 3401 First street, died at Mercy Hospital October 30 at 1:30 o'clock a. m., after an illness of six weeks.

Dr. Minkler was a resident of this city for forty years and a practicing physician for thirty-five. He was a member of the Highland Park Presbyterian church, M. W. A. and Royal Neighbors. He is survived by his widow, one daughter, Mrs. H. J. Kizer of Los Angeles, a brother, F. L. Minkler, and a sister, Mrs. Amos Perry, both of Edgewood, Iowa.

Dr. Charles S. Grabin died of pneumonia at his home in Spencer on Friday, October 23, 1925. Dr. Grabin practiced medicine in Alta before moving to Spencer about ten years ago.—Advertiser Alta.

Dr. M. C. Carpenter, for forty years a practicing physician in Fairfield, died at 2:20 o'clock a. m., after a sudden stroke in his office sometime October 27, 1925. He was discovered unconscious, lying on a lounge in the inner office.

Marcellus C. Carpenter was born April 6, 1857 on a farm near Ottumwa and was the son of Calvin and Margaret Carpenter. He was educated at Iowa Wesleyan College at Mt. Pleasant and then attended Rush Medical College at Chicago where he received his medical degree. He opend his first office at Kingston, Kansas, and then came to Dahlonega, in Wapello county, where he remained until 1885 when he came to Fairfield where he had practiced continuously since.

He was married to Margaret Junkin and to this union were born two children, a little daughter who died when four years of age and a son who only lived to be six months old. Mrs. Carpenter passed away seven years ago.

On November 27, 1919, Dr. Carpenter was united in marriage to Clara Howlett, who, with one brother, Walter of Ottumwa and one sister, Mrs. William Bailey of Mystic, mourn his passing.—Fairfield Ledger.

For several weeks Dr. C. D. Fellows had been confined to his home, gradually growing weaker and Tuesday evening about 4:00 o'clock, October 13, the

end came suddenly. Doctor Fellows had many friends and his demise will cause sorrow among those who knew him and whom he had ministered to during their illness. He was a generous, kind hearted man, ever ready to help and assist when his services were needed, either day or night, and no person was ever deprived of medical aid when Doctor Fellows could serve them.

Dr. Clay D. Fellows was born on a farm near Keosauqua, Iowa, January 22, 1867. He attended the rural school and also the school at Keosauqua, after which he attended the Wesleyan University at Mt. Pleasant, later graduating from the Keokuk Medical College, now affiliated with the Iowa State University Medical School. During his college years he taught school at intervals, that he might be able to continue his studies in medicine. After graduating he located at Valley Junction, Iowa, where he practiced medicine for eight years. He came to Algona in 1901, where he practiced his profession continually until last January, when his health compelled him to give up and he sold his practice to Dr. Evans. He was united in marriage, April 21, 1892, to Miss Elizabeth Liming at Douds, Iowa. Two daughters blessed this union, Mrs. Hazel Keen of Algona and Esther, who is a student at Iowa City.—Upper Des Moines Republican.

Dr. Gravin, who died October 23, 1925, at one time attended the Sioux City Medical College and later took special work at Chicago. He practiced medicine at Page and Wakefield, Nebraska, and at Alta, Iowa, before moving to Spencer.

He is survived by his wife, a daughter of F. M Sterling, 500 West Twenty-seventh street, Sioux City; two sons, Kenneth of Lincoln, Nebraska, and Sterling of Spencer and a daughter, Ruth of Spencer.

Clyde Dee Bothwell, only son of Dr. and Mrs. G. W. Bothwell, was born at Fonda, Iowa, December 25, 1882. When about six years of age he came to live at Fairbank, Iowa, where he attended the public school graduating from the high school there. After graduation he attended various schools of higher education, completing his medical course at the College of Physicians and Surgeons at St. Louis, Missouri, from which institution he received his degree in 1907.

Dr. Bothwell was married September 4, 1905 to Miss Nell M. Everett of Waterloo.

About six years ago the family moved from Fairbank to Oelwein where they have lived ever since. Dr. Bothwell opened up an office specializing in x-ray and electrical treatment. He was stricken suddenly, just as he had arrived at his office on Monday morning, October 19, 1925, passing away almost immediately.

The distinguished services of Dr. Juan Guiteras in the yellow fever investigations in Cuba entitle him to special notice and in his recent death Cuba has sustained a severe loss.

From the Journal of the American Medical Association we obtain a brief outline of his work.

"Juan Guiteras died suddenly at his home in Matanzas, Cuba, October 28, aged seventy-three. Dr. Guiteras graduated from the University of Pennsylvania school of medicine in 1873; was on the staff of the Philadelphia Hospital from 1873-1879; in the U. S. Marine Hospital service from 1879-1889; professor of medicine, Charleston (South Carolina) Medical School 1884-1888; professor of pathology at his alma mater 1889-1899; professor of general pathology and tropical medicine, University of Havana, 1900-1921; director of public health in Cuba. He was president of the National Medical Congress of Cuba, 1905; secretary of public health and charities, 1921-1922, and a member of the Yellow Fever Commission of the International Health Board of the Rockefeller Foundation since 1916. Dr. Guiteras was closely associated with work on yellow fever in the United States and Cuba for many years, and was among the first to confirm the experiments of Walter Reed and his associates on the U. S. Army Yellow Fever Commission."

BOOK REVIEWS

COLLECTED PAPERS OF THE MAYO CLINIC AND THE MAYO FOUNDATION

Edited by Mrs. M. H. Mellish. Volume XVI, 1924, Published May, 1925. W. B. Saunders Company, 1925. Price, $13.00.

The foreword presented by the committee on publication announces that, "The present volume is a complete reference of all papers for the year 1924 from the Mayo Clinic and the Mayo Foundation, every such paper being published therein complete, abridge, abstracted or by title. Such articles as do not seem to be of interest to general physicians or general surgeons, but to be of technical or other limited clinical interest only to specialists in the various preclinical and limited clinical fields, are included in brief abstract or by reference only. These papers have been published in Journals devoted to the several specialties. Readers having difficulty in obtaining access to the Journals containing the original papers, may, in some instances, be supplied with reprints of them by communicating with the Division of Publications of the Mayo Clinic."

We reproduce this statement in view of the fact that although this volume contains 1331 pages, some method must be employed to keep the size of the book within reasonable limits. As an indication of the immense amount of material in this volume we may note that there are 160 contributors. The book is divided into nine divisions of classified subjects. The Alimentary Tract, 40 papers; Urogenital Tract, 23; Ductless Glands, 14; Blood and Circulatory Organs, 24; Skin and Syphilis, 17; Head, Trunk and Extremities, 31; Brain, Spinal Cord and Nerves, 15; Technic, 15; Miscellaneous, 45.

Nearly all the papers published in this volume were read before some medical society and reprinted

from the official Journal of the society. It would appear that every important medical association in the United States and Canada had been the recipients of the benefits of the work, research and investigations of the Mayo Clinic. All the men connected with the clinic are trained to aid in the advancement of medical science by conferring with the members of the many medical associations everywhere. It required long years to convince the American medical profession that the interests of the profession were first in the minds of the founders of this great clinic. In this connection we feel the impulse to refer to the Mayo Lecture on Surgery, University of Michigan, as a testimonial to the University that trained him in medicine, "The Physiology and Pathology of Blood in Relation to Surgery". This contribution, historical and philosophical, so well suited to an university atmosphere, brings Dr. Mayo into honored relation with the university spirit the world over.

We have sought to find something to say of some of the many contributions offered in this volume, but could find no place to begin nor where to stop; the character of all the papers are far beyond the reach of the reviewer and we must limit ourselves to general observations.

THE MEDICAL CLINICS OF NORTH AMERICA

St. Louis Number, July, 1925. Octavo of 275 Pages, with 67 Illustrations. Price Per Clinic Year, July, 1925 to May, 1926. Paper $12.00, Cloth $16.00 Net. W. B. Saunders Company.

This number includes many important papers and clinics. The first clinic is by Dr. William Engelback on Studies on Hair Growth and Pigmentation. This is an interesting paper, presenting numerous illustrations of a very helpful character.

Dr. Borden S. Veeder of the Washington University School of Medicine, presents a valuable contribution on The Mentally Defective Infant and Child, and Dr. Alexis F. Hartmann of Washington University, considers Diabetes Mellitus in Infants and Children, and Dr. Hugh McCulloch, Washington University, on the Postural Defects and Body Types in Children.

These three papers although quite different in character, relate to defects and diseases of infants and children, a class of patients which always appeal to the practitioner of medicine. The reader will find helpful material in this discussion.

An important clinic by Dr. H. W. Soper is on The Diatetic Management of Cardiovascular Renal Disease. This is recognized as a leading subject in medicine and the principal hope is in a diatetic management.

Dr. Sidney I. Schwab of Washington University, presents a study in relation to Tryparsamide and Paresis. The new drug released by the Rockefeller Institute has been employed in 200 cases of paresis at the neurologic service of Barnes Hospital. This paper which contains the results of the use of this drug should be read by those interested in the subject. There are other equally valuable contributions which we have not space to consider.

PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON HEALTH PROBLEMS IN TROPICAL AMERICA

Held at Kingston, Jamaica, B.W.I., July 22 to August 1, 1924. By Invitation of the Medical Department of the United Fruit Company. Published by United Fruit Company, Boston, Massachusetts, 1924.

This interesting volume of 1000 pages gives an account of health problems in tropical America in the form of some seventy contributions on tropical diseases. The United Fruit Company have extensive interests in the Central American states, and with the vision of large corporations, have provided for the most liberal health conditions at the many points where their interests lie. It cannot be denied that through the investigations in medicine it has been possible to maintain profitable commercial relations with tropical countries. The United Fruit Company brought together, not only their own large staff of medical men trained in tropical medicine and tropical health problems, but also distinguished medical men from America and Europe, largely representing universities. Among them may be mentioned Col. Bailey K. Ashford of San Juan, Porto Rico; Dr. Frderick G. Banting of Toronto; Dr. Searle Harris, Birmingham, Alabama; Sir Aburthnot Lane, London, England; Dr. Henry R. Muller, New York City; Dr. Hideyo Noguchi, New York City; Sir Thomas Oliver, England; Dr. W. H. Park, New York City; Dr. Milton Rosenan, Boston; Dr. George H. Simmons, Chicago; Dr. Richard P. Strong, Boston; Dr. John L. Todd, Montreal; Dr. George E. Vincent, Rockefeller Foundation, and others. It has been the pleasure of the writer to sail on the United Fruit Company's ships to Panama and return to New Orleans, and can bear witness to the care in sanitary and health matters exercised by this company.

CLINICAL FEATURES OF HEART DISEASE; AN INTERPRETATION OF THE MECHANICS OF DIAGNOSIS FOR PRACTITIONERS

By Leroy Crummer, M.D., Professor of Medicine, University of Nebraska; Introduction by Emanuel Libman, M.D., Physician to Mount Sinai Hospital; Professor of Clinical Medicine, Columbia University, New York; Paul B. Hoeber, Inc., New York, 1925. Price, $3.00.

Dr. Crummer has prepared a very interesting and helpful work on heart disease. The clinical interest in heart disease is now occupying the attention of

physicians to a degree rarely seen in the history of medicine, and many books are written on the subject. In this work Dr. Crummer has prepared a chapter on the study of the history of the case, which is fundamental in character, followed by chapters on Inspection, Palpation, Percussion and Auscultation. With chapter five we come to the special features of the book—Mechanical Aids in Diagnosis. In this chapter are enumerated the mechanical means to be employed, and how we measure the symptoms presented. Without referring to the various forms of disease of the heart, we may measure the value of the various symptoms which lead to the classifications generally employed, by mechanical aids; with the view of determining the working capacity of the heart from a consideration of the various factors involved.

An important chapter deals with Cardiovascular Renal Disease and the possible errors of diagnosis, followed by a chapter on Decompensation, which is of great importance from a diagnostic and therapeutical point of view.

The book should be read by general practitioners of medicine as a helpful means of dealing with a form of disease very commonly met with and not as well diagnosed and treated as it should be, to maintain the good name of the profession.

RECOVERY RECORD, FOR USE IN TUBERCULOSIS

By Gerald B. Webb, M.D., of the Cragmor and Glockner Sanatoria, Colorado Springs. Second Edition, Revised. Paul B. Hoeber, New York, 1925. Price, $2.00.

This book is a record of temperature and pulse in tuberculosis. Holding to the principle that rest is the essential treatment of this disease, charts are worked out to be filled in with the temperature and pulse record, with notes at the bottom of the charts. Some eighty pages of text are offered in explanation of the work.

PRINCIPLES OF SURGERY FOR NURSES

By M. S. Woolf, M.A.B. Sc., M.R.C.S. (Eng.), L.R.C.P. (Lond.) Instructor in Surgery, and Surgeon to Out-Patients, University of California Hospital, San Francisco; Instructor in Surgery, and Visiting Surgeon, Children's Hospital, San Francisco. 350 Pages, Illustrated. W. B. Saunders Co., 1925. Cloth, $3.00, Net.

The purpose of this book is to furnish nurses with a text-book less than required by the medical student and more than a technic generally furnished the nurse. The book is divided into chapters which present the general facts in surgery, as for instance an historical introduction: Microorganism, Inflammation, Antiseptics, Shock, Fractures and Dislocations, Diseases of Bones, Diseases and Injuries to Joints, Tumors, Blood-vessels, Hernia, and diseases of the various systems, commencing with the Alimentary Tract, Diseases of the Urinary System, and so on to include all the systems that have a surgical interest. The nurse will find an account of the surgical diseases of the various tissues and organs of the body including the symptomatology and treatment so arranged and classified as to aid her very materially in conducting her work in surgery.

MEDICAL AND SURGICAL REPORT OF THE ROOSEVELT HOSPITAL, NEW YORK

Second Series, 1925, Based on the Work of the Years 1915-1924, Inclusive. By the Editorial Board. Paul B. Hoeber, Inc., New York City, 1925. Price, $5.00.

There are thirty-four contributions by distinguished New York physicians and surgeons. We have space to mention but few of these numerous papers. The reputation of the Roosevelt Hospital is too well known to need any special comment.

Fractures of the Elbow is the first paper, by Drs. W. Cutler, Jr. and Henry W. Cave.

Technique of Partial Colectomy by the Mickulicz Two-Stage Method and Its Advantages, by Dr. Charles N. Dowd. By this author there are several other papers of equal merit.

Functional Tests of the Circulation and Their Significance, by Dr. W. W. Herrick.

Carcinoma of the Colon and Chronic Duodenal and Gastric Ulcer, by Dr. Charles H. Peck.

The contributions we have mentioned are a fair index of the contents of this report. It is a source of satisfaction that the clinics of these great hospitals are made accessible to the medical profession at a small cost.

There are numerous illustrations and the paper and the mechanical work is such as to make the illustrations valuable. The Paul Hoeber Company are to be congratulated on the character of the work.

In our opinion these hospital reports are of more practical value than text-books and should be more commonly used as reference books.

THE HEALTH—CARE OF THE BABY. A HANDBOOK FOR MOTHERS AND NURSES

By Louis Fischer, M.D., Author of Numerous Books on Health of Children, Infant Feeding, Etc. Consulting Physician to the Willard Parker and Riverside Hospitals. Fifteenth Edition, Completely Revised. Funk & Wagnalls Company, New York.

This is one of the many volumes issued by Funk & Wagnalls Company on the care of infants for the use of nurses and for the mother in feeding and managing the infant and for its welfare.

GLAND THERAPY

Some medicaments can be assayed, and thus standardized, by chemical means—such as belladonna, cinchona, hydrastis, nux vomica, etc.; others by physiological methods, as ergot, digitalis, aconite, convallaria, etc.; but now that gland products are coming into such extensive use, how is the physician to be assured of their activity?

Some of them, it is true are tested by chemical or physiological means, for example desiccated thyroid, adrenalin, and pituitrin; but for the majority there is no assurance beyond the care of the manufacturer in handling the fresh glands and applying suitable methods of desiccation or extraction. The hormones must be preserved; otherwise the gland product is simply so much protein. Here if anywhere the reputation of the manufacturer is a matter of prime importance. Physicians who are particularly interested in gland therapy should read what Parke, Davis & Co. have to say, in their advertisement in this issue about their methods of manufacture.

TRUTH ABOUT MEDICINES

New and Non-Official Remedies

Caprokol (Hexylresorcinol—S. & D.) 2½ Per Cent. Solution in Olive Oil.—A solution of caprokol 2.5 parts in olive oil to make 100 parts. For a discussion of the actions, uses and dosage of caprokol, see Jour. A. M. A., May 2, 1925, p. 1338. Sharp & Dohme, Baltimore.

Sajodin Tablets, 1 Grain.—Each tablet contains sajodin, 1 grain. For a discussion of the action, uses and dosage of sajodin, see New and Non-official Remedies, 1925, p. 182. Winthrop Chemical Co., New York.

Scarlet Fever Streptococcus Antitoxin Concentrated (Globulin)—P. D. & Co.—A scarlet fever streptococcus antitoxin (Jour. A. M. A., May 2, 1925, p. 1338) prepared from the serum of horses treated with subcutaneous injection of toxic filtrates from cultures of scarlet fever streptococci and also with intravenous injections of the streptococci themselves. Each c.c. neutralizes from 35,000 to 40,000 skin test doses of scarlet fever toxin. The product is marketed in packages of one syringe containing 2.5 c.c. and in packages of one syringe containing 10 c.c. Parke, Davis & Co., Detroit. (Jour. A. M. A., August 8, 1925, p. 437.)

Diphtheria Toxin-Antitoxin Mixture 0.1 L.—A diphtheria toxin-antitoxin mixture (New and Non-official Remedies, 1925, p. 333), each c.c. containing 0.1 lethal dose of diphtheria toxin neutralized with the required amount of diphtheria antitoxin. Marketed in packages of three 1 c.c. vials; in packages of one 30 c.c. vial; in packages of ten vials, each containing three doses. Eli Lilly & Co., Indianapolis.

Typhoid Mixed Vaccine, Prophylactic and Therapeutic. (New and Non-official Remedies, 1925, p. 360). This is also marketed in packages of three 1 c.c. vials. Eli Lilly & Co., Indianapolis.

Germicidal Tablets of Potassio-Mercuric Iodide—P. D. & Co.—Tablets containing potassium mercuric iodide, potassium iodide and sodium bicarbonate, colored blue. (For a discussion of the actions, uses and dosage of potassium mercuric iodide, see New and Non-official Remedies, 1925, p. 239). This product is supplied in two forms: germicidal discs of potassio-mercuric iodide No. 2—P. D. & Co., each tablet representing mercuric iodide 3/8 grain, potassium iodide 3/8 grain and sodium bicarbonate 16 grains, and germicidal discs of potassium mercuric iodide 1½ grains, potassium iodide 1½ grains and sodium bicarbonate 45 grains. Parke, Davis & Co., Detroit, (Jour. A. M. A., August 15, 1925, p. 517.)

Small-pox (Variola) Vaccine (Glycerinated). (New and Non-official Remedies, 1925, p. 342).—This is also marketed in packages of one tube. E. R. Squibb & Sons, New York.

Tetanus Antitoxin—Lilly (New and Non-official Remedies, 1925, p. 333).—This is also marketed in syringes containing 10,000 units. Eli Lilly & Co., Indianapolis.

Tetanus Antitoxin (Purified) (New and Non-official Remedies, 1925, p. 333).—This is also marketed in packages of 20,000 units. E. R. Squibb & Sons, New York.

Novarsenobenzol—Billon, 0.15 Gm. Ampules.—Each ampule contains 0.15 Gm. of novarsenobenzol—Billon (New and Non-official Remedies, 1925, p. 50). Powers-Weightman-Rosengarten Co., Philadelphia.

Novarsenobenzol—Billon, 0.3 Gm. Ampules.—Each ampule contains 0.03 Gm. of novarsenobenzol—Billon (New and Non-official Remedies, 1925, p. 50). Powers-Weightman-Rosengarten Co., Philadelphia.

Novarsenobenzol—Billon, 0.45 Gm. Ampules.—Each ampule contains 0.45 Gm. of novarsenobenzol—Billon. (New and Non-official Remedies, 1925, p. 50). Powers-Weightman-Rosengarten Co., Philadelphia.

Novarsenobenzol—Billon, 0.75 Gm. Ampules.—Each ampule contains 0.75 Gm. of novarsenobenzol—Billon (New and Non-official Remedies, 1925, p. 50). Powers-Weightman-Rosengarten Co., Philadelphia.

Anti-Anthrax Serum—Lederle (New and Non-official Remedies, 1925, p. 336).—This is also marketed in packages of one 20 c.c. vial. Lederle Antitoxin Laboratories, New York.

Tuberculin Pirquet Test ("T. O.")—Lederle (New and Non-official Remedies, 1925, p. 347).—This is also marketed in packages containing 10 capillary tubes and in packages containing 25 capillary tubes. Lederle Antitoxin Laboratories, New York.

Pasteur Antirabic Preventive Treatment (Harris Modification)—Lilly (New and Non-official Remedies, 1925, p. 343).—Supplied in emulsion in syringes ready for use. The package containing the first seven doses is sent from the nearest Lilly depot; the second package containing the last seven doses is sent out from the home office. Eli Lilly & Co., Indianapolis. (Jour. A. M. A., August 22, 1925, p. 584.)

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