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JANUARY, 1922

THE VALUE OF RADIUM IN GYNECOLOGY.*

By F. E. KEENE, M.D.,

PHILADELPHIA, PA.

(From the Gynecological Clinic, University of Pennsylvania.)

THROUGH my association with Dr. John G. Clark, in the Gynecological Clinic of the University Hospital, it has been my privilege to observe a large number of patients in whom radiotherapy has been employed; we have made painstaking efforts to keep ourselves informed of the immediate and remote results obtained in these cases and my remarks will briefly summarize the conclusions which our observations seem to indicate.

We began the use of radium in 1913, and since that time have treated 501 cases of benign and 412 cases of malignant diseases of the female pelvic organs. With such an experience behind us, we feel that radiotherapy is no longer in the experimental stage where its immediate and remote results are open to question; on the contrary, its value has been definitely established and, when properly and intelligently employed, its use marks one of the big epochs in gynecological therapy, supplying, in many instances, a beneficent effect unequalled by any other method of treatment. We would strongly emphasize the statement that radium has not supplanted operation nor should it be considered a competitor of operative procedures; the fact that during the past year 100 of our benign hemorrhage cases were operated and 110 radiated is conclusive evidence of the truth of the above assertion. As we see it, the methods of treating myomata and so-called myopathic hemorrhage fall into two definite groups, the one requiring operation, the other radium, and the indications pointing to the one or the other are as a rule sharply defined; indiscriminate use of either method is certainly not to the best interests of the patient. In this connection, I cannot refrain from calling attention to the dangers that underlie the use of radium or the X-ray by those ignorant of their effects or unskilled in gynecological pathology and diagnosis, for in either case disastrous results will follow sooner or later and the fault lies not in

the method, but rather in its misapplication. With these preliminary remarks, I shall take up, under separate headings, our results with radium in the treatment of myoma uteri and cancer of the pelvic organs.

For the past eight years, we have treated certain types of myomata and myopathic hemorrhage exclusively with radium and our experience, together with that of many other clinics, testifies to the value of its application in the control of hemorrhage and further to the fact that changes which the action of the rays may produce in the uterus or its adnexæ are not followed by untoward sequelæ. Being among the first in this country to enter upon this new and largely unexplored field of therapy, we have felt our way cautiously, adopting or discarding certain procedures only as our increasing experience pointed the way, until now we feel that we are on solid ground and can with confidence rest assured of the results we can anticipate in the great majority of cases.

We are of the opinion that certain types of myomata contraindicate radiation and they can be classified as follows:

I. Tumors larger than a four months' pregnancy, or tumors of any size complicated by inflammatory disease or neoplasm of the adnexæ. In exceptional cases of large tumors, we have used radium where grave cardiac, pulmonary, or renal complications precluded hysterectomy, or in cases of profound anemia, to control the hemorrhage until the patient's condition was sufficiently improved to warrant operation.

II. Tumors not producing hemorrhage, but whose chief clinical manifestations are those due to pressure on adjacent structures. Under such circumstances, the decrease in the size of the tumor following radiation is not sufficiently rapid to warrant such a procedure.

III. Tumors associated with a cachectic appearance of the bearer, with an anemia unaccounted for by the quantity of blood lost during menstruation. We have observed several such instances explained by the absorption of toxic material from a necrotic or degenerated myoma, and a rapid and complete recovery following hysterectomy.

IV. Tumors so distorting the uterine cavity that the introduction of radium to the top of the uterus is impossible.

* Read at the Annual Meeting of the Medical Society of the State of New York, at Brooklyn, May 5, 1921.

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V. Pedunculated tumors concealed within the uterus or projecting from the cervical canal.

VI. Calcareous tumors or tumors which have rapidly increased in size, or are associated with intermenstrual, as well as menstrual pain.

VII. Tumors, single or multiple, in young women, since radium in sufficient quantity to affect the tumor may produce a premature menopause as well as sterility.

VIII. In patients with tumors of moderate size whose history suggests a coincident disease of the gall-bladder, stomach, appendix, et cetera, in whom appropriate examinations do not warrant a definite diagnosis of an extra pelvic lesion. Under such circumstances, we would advise operation and be governed by our findings as to the advisability of hysterectomy or radium, using the latter in case the measures required to meet the abdominal lesion precluded a combined operation.

From the foregoing, therefore, it is evident that operation is required in a large group of myomata; we reserve for radium only the smaller uncomplicated tumors whose only symptom is hemorrhage, as well as that type of uterine bleeding which, for want of a better term, we call myopathic. Under such restrictions, one application of radium can be relied upon to affect a cure in 95% of cases; in the remaining 5% a second or even a third application may be necessary, and in the very exceptional case, radiation may fail completely to control the hemorrhage when hysterectomy or myomectomy must be resorted to.

The technique of application is very simple. Under nitrous oxide and oxygen anesthesia, a careful pelvic examination is made and the size of the uterus, as well as its depth, is determined, and recorded for future reference. A thorough curettage is performed and the curettings are saved for microscopic diagnosis. A 50 mg. tube of radium properly filtered is inserted to the fundus of the uterus, and the duration of application depends largely upon the age of the patient; in women at or near the menopause the duration is usually twenty-four hours and in young women, proportionally less. A repetition of the application in young women is preferable to over radiation. The patient remains in bed for three days and usually leaves the hospital on the fifth day with no ill effects from her experience. Nausea or vomiting is present in about 60% of patients, while the radium is in place, but these subside almost simultaneously with its removal. Elevation of temperature of more than a degree is the exception; pain is likewise rarely experienced and when present, is often spasmodic in character, subsiding when the radiation has been discontinued. Occasionally the patient will complain

of pain in one or both sides of the lower abdomen, lasting several weeks and this is probably due to an old inflammatory process in the adnexæ, not discoverable on examination. During our earlier experience, before realizing the danger of lighting up an old infection, we found it necessary to operate subsequently on a patient whose menorrhagia was due to an old pelvic inflammatory disease. We have observed no irritative effects on the bladder or rectum, nor have we seen a single instance of phlebitis or nephritis as reported by some observers.

As to the effect on bleeding, we can predict with great assurance the subsequent course of events, particularly after a twenty-four hour radiation. The first period following the treatment may show no diminution or may even be increased; the periods following, however, will be scanty or entirely absent and in most cases, the amenorrhea is permanent. Occasionally, after the lapse of several months or a year, the bleeding may recur but not profusely, although exceptionally, the recurrence may be so profuse as to require a second application. When radium has been applied for only a few hours, the periods are reduced in quantity as well as duration, but amenorrhea does not ensue. With cessation of menstruation, a leucorrhœa may develop, not excessive and non-irritating as a rule, lasting from six to ten weeks.

The remote effects, aside from those relating to the direct action on the pelvic structures, have to do largely with the symptoms of the menopause and here there is a wide variation in their duration and intensity. In the majority of cases, these symptoms are of no great moment and are far outweighed in the patient's mind by the fact that a cure has been obtained without resorting to operation.

Conclusions.

I. Radium is the treatment of choice in the smaller myomata whose only symptom is hemorrhage. In such cases, as well as in myopathic hemorrhage, a cure can be expected in at least 95%. Rarely a re-application or operation may be necessary.

II. A large group of myomata are not suitable for radiation and should be subjected to operation.

III. The test of time has shown that in properly selected cases, the myomatous uterus suffers no ill effects from radium, but, on the contrary, there is a gradual diminution in the size of the tumors which may eventually disappear.

IV. The application of radium is attended with no mortality and a minimum of morbidity.

V. Symptoms of the menopause are the chief subjective complaint, but, as a rule, these are not of sufficient moment to cause the patient much concern.

MALIGNANT PELVIC TUMORS

In tracing the results of radiotherapy on cancer, we must divide the cases into two groups, the first including those which are far advanced, beyond hope of cure in whom palliation is the most to be expected and, second, those apparently early cases in whom one might with reason anticipate a cure. Of the latter group, we do not feel qualified to speak from our own experience because thus far, with but few exceptions, these early cases have been subjected to operation.

Until recently, every case presenting herself to the clinic has been given the possible benefit of radium, irrespective of the duration or extent of the growth; as a consequence, many of these women were in the last stage of cancer with at most only a few months to live, in whom even palliation would seem questionable. We are now of the opinion that such a course is unwise in that the suffering may be intensified thereby and that it unjustly casts opprobrium upon a method which, in selected cases, offers at least temporary relief and in no few instances, apparent cure. Chief among the cases not suitable for radium are those presenting widespread extension to the bladder or rectum; under such circumstances, sufficient radiation to have any appreciable effect on the cancer cells may lead to almost unbearable pain and may easily give rise to fistulae which add more suffering to the already miserable existence of these patients. Occasionally, even in these advanced stages, a remarkable result will be obtained which may for the moment weigh strongly against the advisability of this selection of cases, but here we must be governed by what is best for the masses, rather than be influenced by the rare exception.

In addition to inoperable carcinoma of the cervix, which forms far and away the largest portion of our series, we have treated primary carcinoma of the vagina, recurrent carcinoma following hysterectomy, carcinoma of the urethra and Bartholin's glands, and a few cases of carcinoma of the fundus where some grave contraindication precluded hysterectomy. Radium has been implanted in a small number of ovarian carcinomata with indifferent results and we have little or no confidence in the procedure.

Without going into the details of technique, I might say that our cases have been treated with 100 mg. of radium element, either placed against the tumor or imbedded in its substance with needles. The first application has usually lasted twenty four hours and in many, a sec-

ond application, usually of shorter duration, has been given in six weeks. In our earlier work, we used various types of metal protectors to avoid injuring the bladder and rectum, but these have been discarded in favor of gauze packing which pushes the structures out of harm's way, and gives results far superior to those obtained by the older methods.

Prior to the advent of radium, we had little or nothing to offer these miserable individuals which would promise more than a few weeks' respite from their sufferings; in radium we have a remedy which in many cases, will make life bearable and not infrequently restore the individual to fairly good health, even though the improvement be only temporary. If radium offered nothing more than this palliation, we could look upon its discovery as one of the great advances in therapeutics in that it brings relief to the class of patients otherwise cast aside as beyond the limits of medication.

To those of you who have had no experience with radium, it may be of interest to describe the gross changes seen in cancer of the cervix following radiation. Within a few weeks, all superficial evidences of cancer have disappeared, the ulcerated area being covered over by a yellow membrane much smaller than the original ulcer and densely adherent to the underlying tissue. Surrounding the membrane, the vaginal lining presents a bright red, inflamed appearance and may bleed slightly on touch. The profuse hemorrhages, as well as the malodorous discharge have ceased, giving place to a thin, usually non-irritating leucorrhoea. Several months after application, the necrotic membrane and evidences of vaginal irritation have disappeared, leaving a smooth but often contracted vagina, due to the deposit of fibrous tissue incident to the action of the radium rays.

Such local healing can be counted upon in from 50-60% of cases. In even a larger percentage, hemorrhage and malodorous discharge are checked, in many never returning, in others appearing at varying intervals before death ensues. In not a few instances, pain has been considerably lessened or completely relieved, although the respite may last only a few weeks or months, coming on again with further invasion of the growth.

Such satisfactory results are by no means obtained in all cases, for in not a few, radium seems to produce no effect whatever, or may actually stimulate more rapid spread of the disease. Occasionally severe pain follows closely upon radiation and is doubtless the direct result of it, and, as might be expected, this occurs more frequently after the second or third application than after the first. During our earlier experience, a proctitis, or more rarely a cystitis, made itself manifest but these

complications are less common at present although still occasionally met with the most painstaking precautions. In our first 200 cases, rectovaginal or vesicovaginal fistulae developed in 17, but we believe that some of these cannot be ascribed to radium, for in 200 untreated cancers of the cervix and vagina, such an event would be expected in a much larger number. Because of the local eradication of the disease, thus preventing its spread to the bladder or rectum, we are of the opinion that radium decreases rather than increases the likelihood of fistula formation. Two deaths have followed shortly after radiation, both being far advanced cases with extreme cachexia.

Granting the symptomatic relief of radiation, what can be said of cure in malignant disease of the cervix and vagina? As previously stated, we are in no position to speak of what the results may be in the earlier, operable case, for in only one such instance has radium been used, and this patient has passed over her five-year period with no evidence of recurrence. Of 94 cases treated during and prior to 1916, all inoperable malignant tumors of the cervix, fundus or vagina, excepting the one just referred to, 20% are still living and to all appearances, free from cancer. We are confident that such a large percentage of apparent cures will not be maintained in later series. While it is the source of the greatest satisfaction to know that radium has thus saved lives that otherwise were doomed, there is even a greater import to be derived in that these results prove conclusively that in radium we have a means of eradicating cancer locally, and arguing from this, it is no far stretch of the imagination to hope that in course of time a technique will be developed which will replace operation in the treatment of all cancers of the cervix.

In carcinoma of the fundus, we advise operation, even in the presence of fairly extensive involvement of the body of the uterus; radium is reserved for a small group in whom some grave contraindication to operation is presented. In carcinoma of the cervix, however, only the very early cases are operated, the so-called borderline and definitely inoperable cases being given over to radium. We deem it inadvisable to operate upon a case which radium has apparently transformed from the inoperable to the operable stage: the hazards of operation are rendered greater by the diffuse fibrosis and contraction of tissues consequent to radiation, and we believe that operation will accomplish no more than has already been accomplished by radium, and may, in fact, release cells that have been rendered inert. It has been our practice to apply radium to the vaginal vault two weeks after operation for cervical carcinoma; ideally, radium should be implanted in the broad ligaments and vaginal cuff at the time of operation,

but such a procedure is extremely hazardous because of widespread sloughing due to lessened resistance of the normal tissues incident to the trauma of operation. We are still of an open mind relative to the advisability of preoperative radiation; on theoretic grounds, it would be of value in that the cancer cells are either destroyed or rendered inert thereby, thus making transplantation growth less likely, but on the other hand, radium may also affect the normal tissues to such an extent as to promote necrosis or to so lessen their resistance as to permit a rapidly spreading infection. Further experience alone must determine this point.

In a paper recently published, Doctor Clark summarizes our conclusions as follows:

I. "As a palliative remedy, radium is the treatment par excellence in inoperable cases of cancer of the cervix and vagina.

II. "In border-line cases in which formerly we accepted the grave risks of an operation in the hope of eradicating the disease, we now employ radium, but in the certainly operable class, we still advocate a radical operation followed by post-operative radiation.

III. "In cancer of the fundus, even when far advanced, we perform a hysterectomy, resorting to radiotherapy only in the face of grave operative contraindications."

Supplementing these, we may add:

IV. Hysterectomy is inadvisable in cases apparently rendered operable by radium.

V. In the operable case, the value of preoperative radiation is still open to question and must be determined by further experience.

VI. The local eradication of cancer by radium has been established without question of doubt, and we venture the hope that in radiotherapy we have a remedy which may supplant operation in the treatment of early carcinoma of the cervix.

SOME OBSERVATIONS ON THE POST-OPERATIVE USE OF RADIUM.*

By EDGAR A. VANDER VEER, M.D.

ALBANY, N. Y.

THE post-operative treatment of cases, especially those of a malignant nature, is as important, if not more so, than the original operation itself and the conscientious surgeon is always not only endeavoring to reduce his mortality rate but also endeavoring to prolong the life of his patient as long as possible with the greatest comfort to him or her. A limited experience in the use of radium following operation for malignant disease leads me to report the following cases.

With the advance of surgical science and the discovery of the use of radium, the treatment

* Read at the Annual Meeting of the Seventh District Branch of the Medical Society of the State of New York at Rochester, October 6, 1921.

of malignant conditions is reaching a stage where we are beginning to hope that we can cope with the problem with increasing success. In bygone years the physician was wont to assume a helpless attitude when once a diagnosis of malignancy was made and the unfortunate patient was condemned to a few months of terrible suffering which could only be alleviated by the administration of opiates. Then we came to the next stage where surgery seemed to be the panacea for the sufferer, beginning with comparatively mild and inefficient operation increasing in severity as laboratory research work reported a large percentage of specimens examined indicated that all the diseased area had evidently not been removed and recurrences were too soon and too large in number. Radical operations with extensive dissections were soon introduced and with encouraging results as reliable statistics indicated. With this procedure it was found that in many instances the condition could be completely eradicated if discovered early enough, or the suffering at least lessened and the expectancy of life prolonged. There is a class, I am pleased to say, that, like large ovarian tumors, are becoming less and less utterly hopeless, where no encouragement can be given patient or friends, yet are made more comfortable by the operation followed by the use of X-ray or radium. I consider the successful manner in which we can now keep our desperate cases clean, free from odors and pain offers much over which to be greatly encouraged in fighting this fearful form of surgical lesion. In conjunction with the progressive method of treatment, preliminary cauterization or outlining the tumor mass by cautery, was frequently done with the idea that the lymphatic channels would thereby be partly sealed off and so there would be less danger of metastases, also in the application of heat to destroy the vicious cell territory—hot water has had honest, earnest advocates. In seeking relief for these patients, we must not ignore any reasonable line of suggestive treatment.

Then, after this, X-ray and radium made their appearance in the treatment of malignant conditions and not unlike the use of Chian turpentine and certain mineral waters, were overestimated in their ability to produce cures, bringing bitter disappointment to the hopeful patient. At first these agents were used independently of surgery and the results were not altogether pleasing. But we had not yet found that method of treatment by which a sufficiently large percentage of cases could be cured. Today a combination of radium or X-ray and surgery has come into use. Not only will radium do a great deal in cleaning up the nasty necrotic areas due to malignancy, but it also does considerable in relieving the pain and swelling

which are incident to the trouble, especially as seen in breast cases. In this class of cases where the exuberant granulations are in the ascendancy, much is gained and great good results, but with intercostal and internal chest involvement, its action is merely palliative, yet positive. In the other class of cases where it is used either before or after operation we obtain still better results. Much can be said in favor of this, that previous to operation its use will partly seal up the lymphatic channels and cause death of the cell life undergoing malignant changes so that at the operation there is less likelihood of disseminating the condition. The facts will never be known as to the amount of infection caused in the doing of breast operations in decades now past by careless methods of operation, handling of the specimen by the operator and assistants at the time of operation over and in connection with healthy tissues. Post-operatively we use it to deal with the lesion direct which surgical intervention has made possible by either exposing the lesion or by putting the involved area at rest. To prophesy what future discoveries along the line of treatment of malignant condition will be, is beyond the power of the human mind. However, it seems likely that before many years have passed laboratory research workers will have discovered the cause of neoplasms, whether it be bacteriological or perverted cellular activities.

To illustrate the usefulness of the combined treatment of growth by radium and surgery, I wish to present several case histories of one type and another. Case 1, Mrs. S. Aet. 49. Operated upon at Albany Hospital July 20, 1915, for vicarious bleeding from the uterus. Diagnosis of small fibroid in fundus of uterus had been made by me and a hysterectomy advised. At operation uterus with appendages removed and cervix left in. Examination of specimen by pathologist at the time showed adeno-carcinoma of endometrium and stump of cervix removed at same operation.

Re-entered Albany Hospital September 23rd, 1918, complaining of an enlargement to the left of the scar, constipation and frequent urination as the most prominent symptoms. Operation October 4th, 1918, and carcinoma of anterior abdominal wall with involvement of bladder found. Removal of portion of carcinoma of anterior abdominal wall. Pathological report. Tumor from abdominal wall adeno-carcinoma.

Owing to the extensive nature of the growth no attempt was made to remove it entirely. Patient did well for a year when she returned complaining of the same symptoms as the year previous, no treatment being given during this time. Tumor was easily felt to the left of the scar.

Vaginal and rectal examination at this time negative.

Owing to my operative findings of a year previous, no operation was advised, but patient was referred to Dr. Moriarta of Saratoga Springs for treatment by radium. At the end of the third treatment, tumor had disappeared, pain was better and patient felt in very good condition. After the third or fourth treatment patient developed quite a radium burn which was very slow in healing, but finally yielded to the use of the electric light.

Patient is now well, no tumor is palpable and I can find no evidence of any return of the carcinoma. This summer while out automobiling, she accidentally rubbed against the site of the previous radium burn and caused a sore which has been very slow in healing and in fact after three months' treatment, is almost as bad as in the beginning. The sore acts very similar to the X-ray burns which we formerly observed when the use of the X-ray was in its infancy. I am not unmindful of the fact that this ulcer may be malignant.

I am fully convinced that the patient's life has been prolonged by the use of radium. If we had had to depend upon surgery alone, this patient would have been dead long ago. What the result would have been if we had used the X-ray, of course, I cannot absolutely say, but judging from my previous experience with its use, I do not believe it would have been of as much avail in this case. This case together with a number I have observed in the case of other surgeons, has impressed me so favorably that in the future I shall certainly make use of radium in this class of inoperable cases of carcinoma with the expectation of giving my patient, if not a longer lease of life, at least a much more comfortable one.

It is to be regretted that carcinoma of the rectum is not often diagnosticated until the process has extended so far that surgical extirpation of the primary growth with its metastases is quite frequently impossible. In these cases we can do much by using both surgery and radium or X-ray. As it is next to an impossibility to heal the rectum, with feces continually passing through it, we frequently do a preliminary left colostomy or sigmoidostomy, as the case may be. With the present state of perfection, which mechanical contrivances for colostomy wounds have arrived at, the patient can be very comfortable with a colostomy, and the rectum is not irritated by feces. Also a very important feature is that we do not have to worry about obstructive symptoms due to the mass in the rectum. In the past the operation of colostomy was usually performed as a last resort, with the patient in very poor condition. Now we do it

early in the course of the disease, so the operative mortality is much lower. These brief histories will illustrate (1) the desirability of early operation, (2) the definite prolongation of the expectant period of life, (3) the relative comfort of the patient as contrasted with the case not treated this way. Cases 2 and 3.

These points are illustrated by the histories of the following two cases: Case 2—James J. C., æt 67, machinist by occupation. Admitted to the Albany Hospital February 4, 1921, complaining of growth in rectum, upon whom I made a diagnosis of carcinoma of rectum with probable metastases in abdominal cavity. Patient was a very poor surgical risk, and I advised a preliminary left colostomy with subsequent use of radium.

Operation February 7, 1921. Left colostomy under ether. Carcinoma of rectum felt and lymphatic glands along spine palpable. Discharged from hospital February 21, 1921, with the colostomy opening working nicely and with very little discomfort from it.

Sent to Dr. Moriarta for radium treatment of cancer of rectum. Result has been astonishing. Growth has diminished in size, is smooth, without any nodules, and there is no discharge of blood or mucous from rectum.

Patient says he feels very comfortable and has no complaints to make.

I feel positive that if I had attempted a radical removal of this growth that I would have lost my patient either on the table or else so soon thereafter as to make the operation worthless. In the procedure as narrated above we have a live, cheerful patient, and with a prospect of living out his allotted span of three score years and ten.

With a colostomy wound alone we might have had a living patient, but one with a nasty discharge from the rectum and the certainty that the carcinoma was growing.

Case 3—Peter C., æt 73, cigar maker, admitted to Albany Hospital May 8, 1921. Diagnosis of carcinoma of sigmoid about two inches above the rectum made. Operation of left colostomy performed under ether May 24, 1921. Patient discharged July 7, 1921, with the colostomy wound working nicely and wearing a rubber appliance which gives him very little discomfort and enables him to proceed about his usual occupation. During his stay in the Albany Hospital he had two or three applications of radium to the growth with great benefit. The discharge of mucous and blood has stopped and he has no pain. In this case, as in the previous one, I feel certain I would have lost my patient if I had attempted the radical removal of the growth.

Two cases may be a small number to predicate a method of surgical procedure on, but

I am convinced that at least for myself hereafter in the majority of cases of carcinoma of the rectum which come to me for operation, I shall advise the combined method of a preliminary colostomy with subsequent use of radium, and I believe I will give my patient more relief with greater comfort, longer period of life and a lessened mortality rate than if a Kraske or some other extensive operation for resection of the bowel is done.

In my experience, patients suffering from carcinoma of the rectum are very poor surgical risks, no matter how early the diagnosis is made, and no surgeon cares to unduly increase his mortality rate by operation upon this class of cases.

In the treatment of carcinoma of the uterus, more especially the cervical type, we have likewise made considerable advancement. The early cases can often be treated with success by radium alone, but the real value comes in that type of case which preliminary radiation renders operable. Of course, there are those cases in which we are deceived or mistaken, and find, even though all cervical signs have disappeared, that laparotomy shows widely scattered glandular enlargements in abdomen. In the unquestionably inoperable cases radium treatment certainly improves the local condition by lessening discharge and pain.

However, in this I do not wish to be understood as advocating the preliminary use of radium in carcinoma of the cervix except where the case is palpably hopeless and it can be used only as a last resort. I understand cases have been reported where apparently hopeless cases of carcinoma of the cervix have been so cleaned up by the use of radium as to permit of surgical intervention, but I have had no actual experience. Where the case is at all operable I believe by all means in the operation first, with the subsequent use of radium.

I have had one case of carcinoma of the cervix where radium was used when the growth was very small and came to me subsequently for operation when the uterus appeared normal. Upon opening the abdominal cavity the whole pelvis was found studded with carcinomatous nodules, and the growth itself had extended into the left broad ligament. Nothing could be done, and the incision was closed. Subsequently the patient developed a nasty infection of the wound and fecal fistula, which was a long time in closing. I do not believe that this condition was caused by some break in surgical technique, but rather due to the weakening of the tissues by the use of the radium. I understand that other surgeons have had this same experience, though I have been unable to find any confirmation of this statement.

In this case narrated I feel positive that when the bleeding from the cervix was first discovered, if a panhysterectomy had been performed instead of radium used, the patient could have been cured, as we understand the term, surgically. Radium is a useful adjunct to surgery, but with our present knowledge of it, cannot be expected to take its place in such conditions as carcinoma of the cervix and uterus.

In carcinoma of the breast we find a large and hopeful field. Early cases are often entirely cured (if such we may call it when there is no return of symptoms for at least six years) by surgery alone. More advanced cases often do well after radiation is followed by surgical removal. As spoken of above, radium treatments frequently relieve the pain and swelling due to recurrences or to pressure by scar tissue on the vessels and nerves. In this connection I would like to repeat a case, that of Mrs. A. H., housewife, æt 57, admitted to Albany Hospital July 7, 1920. Operation, removal of right breast and axillary glands. Pathological report. Carcinoma breast, involving underlying muscle and metastases to lymph nodes. Discharged from hospital July 28, 1920, as improved.

The case, being of a very malignant type, was sent at the end of three months to Dr. Moriarta for radium treatment. Already the arm had begun to swell and patient complained of great pain in axilla. At the same time small carcinomatous nodules appeared along the course of the incision. By the use of the radium we were able to control the growth to a certain extent, but patient re-entered Albany Hospital June 23, 1921, and expired July 23, 1921.

In this case I am not sure but that a massive dose of the X-ray would have been better. It has been my custom, like other surgeons, following an operation for carcinoma of the breast, whenever possible, to follow it by the use of the X-ray, and I think I shall continue to follow this course, using radium as indicated.

At the recent meeting of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, held in St. Louis, quite a discussion was held upon the use of radium in surgical procedure, and opinions varied all the way from the man who said that we knew nothing about it and that he would not use it under any circumstances, to the man on the other side, over-enthusiastic, who cured almost every case of carcinoma of the uterus by its use. I can well remember at the meeting of the American Surgical Association, held in Albany, the X-ray as a surgical therapeutic measure was just coming into notice and the arguments pro and con were about the same.

At that time we knew very little about the therapeutic use of the X-ray, and it has only

by a period of growth reached the standard as a surgical therapeutic use which it has today.

It seems to me that the same process of evolution must take place in radium. We have passed the five-year period in its use and we are just beginning to learn something about it. What it can do and what it can't do. Where it is better to use it than the X-ray and when the use of the X-ray is better than it.

As to the actual use, dosage and application of radium, I know comparatively little, as I believe that that part should be left to the hospital or private individual rich enough to own an amount sufficiently large to be of surgical therapeutic use.

I have never used it in cases of fibroid tumor of the uterus, for which, apparently, marvelous results are claimed for it. I prefer the good old way in those cases of surgical removal, though the valuable papers contributed recently by Dr. Clark, of Philadelphia, and others, must command our respect, neither have I mentioned its use in case of external growth, as I prefer there to leave it to the judgment of the X-ray man as to whether he should use radium or the X-ray.

In conclusion, I believe that in radium we have a method of great surgical therapeutic value, but that it should rarely ever be used primarily but simply as a secondary measure in surgery. That it should only be used by an expert and that the laity should not be led to expect, especially in the cases of carcinoma, that it is a cure-all.

EPILEPTIFORM MANIFESTATIONS IN ENDOCRINOUS DISORDERS.*

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EPILEPSY has had so many theoretical explanations that any concrete facts which throw light upon this baffling disorder may aid in its prevention and possible cure. Several writers have called attention to the relation between epileptiform attacks and disorders of the internal secretory glands. Gowers¹ as long as 20 years ago, stated that retarded or absent menstruation coincided with the first fits in a large number of cases which commenced in girls between 14 and 17, but that the difficulty of determining the exact casual relationship between the two conditions was very great. When the epilepsy is once set up in such cases, the establishment of menstruation appears to exert little effect upon the attacks, except that they are more likely to occur at the menstrual period, whether this be regular or irregular in point of occurrence.

The period of puberty in girls, Gowers further

stated, was a time at which epilepsy was known to commence or become more severe. This period is one of general instability of the nervous system, which seems to favor the occurrence or persistence of this disease.

Recently J. S. Ashe² cited cases before the Royal Academy of Medicine in Ireland which seemed to demonstrate a connection between ovarian insufficiency and epilepsy. The Graafian follicles, the corpus luteum and the interstitial tissue are each thought to have individual secretions with varied functions. Be this as it may, it is generally accepted that the ovary is an organ of endocrine function, is a very important one, and the deficiency of this secretion and its relation to epilepsy is one of the objects in presenting this paper.

The relation between epileptiform manifestations and pituitary secretion has been shown by Tucker³ and Timme⁴ both of whom believe that a deficiency in the secretion of this gland leads to periodic convulsive attacks. This group Tucker divides into a chronic hypopituitary one and the transitional hypopituitary type as shown by clinical and roentgenographical evidence.

The group of cases which we wish to present for your consideration are of the hypopituitary type and hypo-ovarian type essentially. The consensus of opinion at the present time, however, is that diseases of the ductless glands are plural rather than isolated and single; that a condition of multiple endocrine deficiency has become recognized so that the administration of gland substances is regarded not only as replacing in part the deficient secretion but also as stimulating the particular organs to activity for a longer or shorter period. Thus plureglandular extracts favor general secretory activity.

The cases selected for presentation in this paper are from my private practice, and from the Mental Hygiene Clinic at Bellevue Hospital, selected out of a large number of cases in which no particular endocrinous disturbance was noted.

CASE I.

M. I., female, 19 years, single. Occupation filing clerk. Referred by Dr. Thomas M. Brennan. Examined March 10, 1921.

Family History.—There were ten children in the family and also two miscarriages. One of the children died in infancy of cardiac disease. The others are all well.

Personal History.—The patient was a full term, healthy child, normal delivery, breast and bottle fed. She had measles, whooping cough and diphtheria during her childhood. She developed normally and was very bright in school, graduating from high-school at seventeen years.

Menstruation was established at fourteen years and has always been regular and copious, usually lasting five days. She has had dysmenorrhoea at times. She gave a history of an acute thyroid

* Read at the Annual Meeting of the Medical Society of the State of New York, at Brooklyn, May 4, 1921.

enlargement three years ago prior to onset of present illness.

Present Illness.—For three years previous to the onset of her present condition, she suffered with frequent frontal headaches, which were severe in character, and usually lasted several hours. There was no concomitant vomiting, nor ocular manifestations. There was no relation to the menstrual period.

About three years ago, at the age of 16 years, generalized convulsions made their appearance, nocturnally. They lasted from three to five minutes. They made their appearance once a month, and just prior to the onset of the menstrual period. In December, 1920, she had three general convulsions on the same day, and a few days prior to the examination, also had three convulsions during one day. Just before the convulsion when awake, she feels dizzy.

Physical examination reveals a well nourished female of 145 pounds. Her head is large, measuring 23 inches in circumference; the forehead is high and broad and the cheek bones are prominent. The hands are rather large and spade-like. The right hand is larger than the left, measuring seven and one-half inches. The right forearm measures nine inches and the left eight and one-half inches. The right upper arm measures ten and one-half inches and the left ten. The thighs are of equal measurement, seventeen and one-half inches. The calves each fifteen inches and the feet eight and six-eighths inches.

Her breasts are large and the nipples are large also. Her skin is very smooth, soft and there is a sparse growth of coarse hair on the arms. There is an abundant growth of coarse hair on the legs. The pubic and axillary hair, also the hair of the head is normal in abundance and distribution.

General physical examination and general neurological examination is otherwise negative.

The pulse rate is 80. The blood pressure is 118/100.

Roentgen examination of the head reveals no pathological condition except that the skull is large. Stereoscopic examination of the sella turcica reveals nothing pathological. The bones of the hands are normal size and formation.

Blood Wassermann is negative. Blood chemistry shows a blood sugar of 77 milligrams, the normal range being 80 to 120. A sugar tolerance test was attempted but she was unable to retain the sugar. Urinalysis was negative.

Course and treatment.—The patient had been receiving corpus luteum for several months and under this medication had shown marked improvement and her seizures were less severe and she had one interval of two months during which she was free from attacks. Her physician was advised to place her on ovarian extract Grs. I before each meal. the medication to begin about a

week prior to the onset of her period, also to be given whole gland pituitary Grs. I before meals daily.

CASE II.

M. K.—female, 26 years. Single. Works at home. Referred by Dr. J. Frank Ryan. Examined on Nov. 21, 1920.

Family History—Negative.

Personal History—Her early history was uneventful, except for scarlet fever and measles during infancy, and typhoid fever at the age of 14. During the latter illness she was severely ill and quite delirious.

She was fairly bright in school and graduated at 14 years.

Her menstruation was established at the age of 15 years and had always been very irregular. At one time it was absent for a period of a year and at another time for a period of two years. This irregularity has been present during the past four years. Her periods have always been very scanty, lasting three days and during them she has always been very nervous and depressed.

Present Illness—About July, 1913, the patient had a petit mal attack while on a stepladder. She lost consciousness, but was caught before she fell. Her second attack occurred in October of the same year during her sleep. She cried out and had a generalized convulsive seizure which lasted a few minutes. Following this had attacks fairly regularly, about twice a month, nocturnally, and convulsive in character. Her petit mal attacks averaged one a week.

In July, 1920, she had a petit mal attack while taking a pot of hot coffee from the kitchen into the dining room and burned her abdomen, chest and thighs severely so that she had to be taken to a hospital for treatment. She remained there several weeks.

A week prior to examination she had a convulsion on the street and following the convulsion she had an episode of excitement during which she tried to jump out of a window.

Her attacks are prone to occur when her period should be present, but for some reason or other is absent and seem to take the place of the period. A recent attack occurred two days prior to the onset of her period.

She gave a history of constipation, lack of perspiration even on very warm days, and of her hair being dry and falling out.

During the past six months she has been very irritable and depressed with frequent crying spells. She remains at home and sits idly brooding.

On examination a fairly well nourished female of 114 pounds is revealed. Her weight three years ago was 150. There are present scars on the chest, abdomen and thighs from burns.

General Physical and Neurological examination is negative. Her pulse is 80, blood pressure

125/95. Skin is dry and there is a lack of perspiration.

Blood and spinal fluid examination is negative.

Roentgen ray examination of the head is negative.

Urinalysis is negative.

Course and Treatment—The patient was placed on ovarian substance, Grs. V three times daily, before meals.

She reported on December 7, 1920, that she felt much better; that she was more lively and much better in spirits than she had been for some time. She said that she was taking more interest in entertainments, was more ambitious and fatigued less easily. Her sleep, appetite and constipation had improved greatly. Her last convulsion was a few days ago. Her medication was continued.

She reported again on December 22, 1920, saying that her period had come on the day before, but was quite scanty. On December 10, 1920, had had a grand mal attack, and one on the 11th and 12th. Also had had three petit mal attacks during the same period. Her period had been due when attacks took place. During the past week she had been lazy, sleepy and irritable, but since onset of her period had felt better. Her hair has stopped falling out and she perspires more freely. Medication continued.

She again reported on April 3, 1921. Said she felt much better than she had for some time, was taking on weight and was much more ambitious and enjoyed company. Was able to go out alone. Her periods had been more regular and more copious. Had had no petit mal attacks since the last visit, but had been having one general convulsion one week prior to onset of period. She



Case III.—Showing small sella turcica with approximation of the clinoid processes. The pineal gland is calcified.

had improved greatly in her general appearance. Had lost her old, depressed pessimistic attitude.

CASE III.

C. W.—age 27, single. U. S. Telephone operator. Referred by Dr. Clemens.

Examined December 8, 1920.

Family History—Negative.

Personal History—Early life uneventful, except for whooping cough as infant. Was operated on for appendicitis three years ago. She developed normally and was an average student at school. Menstruation was established between the ages of 16 and 17 years. It lasted three or four days, but at times is rather scanty. Is very nervous at the onset. It has always been regular. Has always been an efficient worker. Is of a quiet, retiring disposition.

Present Illness—Began at age of eighteen years when she walked into the wrong room with her books, and had no recollection afterward of having done so. A few months later she started to go down the cellar, appeared much confused and said, "I'm going down to see Fitzgerald," an unknown personage. A few months later had a similar attack of confusion. Since that time she had attacks of staring, holding herself rigidly and is unconscious. Doesn't fall nor are there convulsive movements. Has them either walking or sitting. Has attacks both diurnally and nocturnally. The "spells" occur usually once a month and at times has had three or four daily. There is no cry nor aura of any kind. The attacks are not related to the menstrual period.

Physical Examination.—Reveals a female of 115 pounds. There is nothing remarkable in her physical appearance. The hair distribution is rather sparse in the pubic region but of normal extent. The axillary hair and hair of the head are abundant. General physical and neurological examination are negative. Pulse is 80. Blood pressure is 125/95. Blood Wassermann and urinalysis is negative. Blood sugar 90.9 mg. in 100 cc. blood.

Roentgen examination of the skull shows calcification of the pineal gland. Stereoscopic examination shows the sella turcica to be of small size and its capacity to be diminished by approximation of the clinoid processes being separated to the extent of about 2 mm. The processes are of normal contour and of usual thickness. The sugar tolerance test showed that after the ingestion of 300 grams of glucose, dextrin free, only a trace of sugar appeared in one specimen of urine.

Course and Treatment.—The patient was placed on pituitary extract, whole gland, Grs. I t. i. d. one hour a. c.

Patient reported on Dec. 29, 1920, sixteen days after pituitary was prescribed, that she felt much better than she had formerly and that she had had one "spell," but was not unconscious

nor were there any convulsive movements. It occurred at the onset of her period.

She again reported on January 12, 1921, that she had had no spells of any kind and she felt much better generally.

On Jan. 21, 1921, had a very slight spell and on Feb. 13, 1921, she stiffened out in her sleep. Looked much better physically. Ovarian substance Grs. V prescribed t. i. d. one hour a.c. in addition to the pituitary which she had been taking. On February 27, 1921, had a petit mal attack lasting a few seconds. Feels better generally. Menstruation more copious and attacks much "lighter" than ever before.



Case IV.—Sella turcica shows the tip of the posterior clinoid process overlying the anterior clinoid process decreasing the capacity of the sella. In the posterior half of the sella is a small spherical area probably that of the posterior lobe of the hypophysis.

CASE IV.

J. J.—Male, white, aged 29 years. Law Clerk. Referred by Dr. Noonan. Examined on June 8, 1920.

Family History.—One sister died of meningitis; one sister has attacks of migraine and a brother has "dizzy spells."

Personal History.—Early history uneventful except arthritis—both knees, eight years ago for two weeks. Graduated common school at age of 14 years. Since then has worked in law office in clerical capacity. Used tobacco and alcohol in moderation. Has served in the U. S. Army for a period of nine months at the end of which time he was discharged as an epileptic.

Present Illness.—Began while in service in August, 1918, when while in a standing position he experienced a peculiar sensation in his stomach, felt "light headed"—then lost consciousness and fell to the floor striking his head on a desk in falling. There were no convulsive movements. Was unconscious for about four

minutes. He was weak and drowsy, afterward, and was kept in bed four days.

The second attack occurred two months later after he had been at the rifle range and was similar in a nature to the first attack.

The third attack occurred on Dec. 23, 1918, and was similar in character to the other attacks.

His fourth attack occurred on April 3, 1920, and showed no variation from the other attacks.

During the past three or four years he has noticed that he fatigues very easily.

Physical examination reveals a male five feet six inches in height and 172 pounds in weight. Head large with abundant hair. Abundant hair pubic and abdominal region, also axillae. Hair sparse arms and legs. Shaves only every other day. The genitals are well developed. Distribution of hair and fat of male type. Some spacing of the upper incisors. Blood pressure 125/90. Pulse 115. General physical and neurological examination otherwise negative. Roentgen reports shows skull to be 21 cm. fronto-occipital diameter. The bones of the vault are of unusual thickness. The sella turcica shows the tip of the posterior clinoid process overlying the anterior clinoid process, decreasing the capacity of the sella. No evidence of lesion of either process. Lying in the posterior half of the sella is a small spherical area probably that of the posterior lobe of the hypophysis.

The blood Wassermann was negative. The urinalysis was negative. The blood sugar was 105 mg. The sugar tolerance test after the ingestion of 300 grams of sugar showed no trace of sugar in the urine.

The patient was placed on pituitary extract whole gland Grs. I before meals.

The patient reported on July 19, 1920, that he had had one attack on July 1, 1920. He stated that it was very slight and he did not fall. He felt better generally, was passing more urine and bowels were regular.

He reported again on August 2, 1920, that he had no attacks. On August 8, 1920, he again reported. No attacks. His blood pressure was 120/95.

The patient failed to report again until April 3, 1921. He stated that he had had no more attacks until October, 1920, and that since then he had been having an attack about every two months. He had continued the pituitary gland until October, 1920, when he consulted a stomach specialist who washed his stomach out without any permanent results. He had been taking a patent bromide for the past few weeks.

His general condition remained the same. He was placed on pituitary extract, whole gland, grains one before meals and luminal grains one and a half at night.

CASE V.

M. M.—Female, 30 years. Single. Occupation, Assistant forelady in chemical works. Seen at Mental Hygiene Clinic, Bellevue Hospital, October 13, 1920.

Family History.—The patient has two sisters who have attended this clinic for definite ovarian deficiency. No history of epilepsy in family.

Personal History.—The patient's early history is uneventful. Menstruation was established at ten years and was regular and of normal quantity until about two years ago, when it became scanty and lasting only two days. The flow has become more scanty during this time.

Present Illness.—For the past four years the patient has complained of a peculiar sensation in the left side of her throat with a concomitant buzzing sound in her left ear radiating to the left frontal region and following which she becomes confused and dull. Then follows a sensation of flushing of the left forehead, face, and finally a diffusion of this all over her body with a generalized perspiration. The entire attack lasts about three or four minutes and occurs diurnally three or four times a week. She has never fallen down nor has there been loss of sphincter control. When spoken to during the attack she is able to hear the voice but is unable to understand what is being said. About once in two months she has a general convulsion lasting a few minutes after which she sleeps and during which there is loss of sphincter control. There is no relation between either type of attack and her period. Has not been working for the past few months because of her illness. Four years ago she had an acute enlargement of the thyroid, with exophthalmos, nervousness and fatigue. These symptoms lasted several weeks and disappeared under treatment.

Physical Examination.—Revealed a female five feet one inch in height and weight 115 pounds. Her hands and feet were unusually small, wearing a six and one-half glove and a one and one-half shoe. There is an almost entire absence of hair on hands, legs and in axillae. The breasts are very large. The skin is dry. The left thigh and left foot are smaller than the right. She never perspires very much and is constipated.

General physical examination is negative as is also neurological. Roentgen ray and blood examination is negative.

She was placed on thyroid extract grs. I and ovarian extract grs. I, both given three times daily before meals. The patient reported on Sept. 20, that she had had a slight petit mal attack, but that she was feeling much better generally. Her period had come on Sept. 16, 1920, and was freer than usual.

She reported again on Oct. 27, 1920, that she had had a general convulsion on Oct. 24—also that she was rather nervous and apprehensive,

and fatigued easily. Her pulse was 86 to the minute and there was a noticeable enlargement of the thyroid. The thyroid medication was discontinued.

Again reported each week until Dec. 15, 1920, when she reported that she had had no further attack of either type, felt much more ambitious and was going to work. On Dec. 22, 1920, she had a general convulsion after the longest period she had ever gone without a convulsion. Menstruation has been much more profuse. Ovarian substance grs. V prescribed one week prior to and during her period.

On Feb. 16, 1920, she reported that she had been well since her last visit and had had no attacks except a slight dizziness just before her last period. Is working regularly.



Case VI.—There is marked development of the air sinuses of the skull. The sella turcica is of large size, its floor is regular. The dorsum sella is moderately thin and the anterior clinoid is of normal size and thickness. The marked development of the sinuses are acromegalic features.

CASE VI.

F. C.—Colored female, 17 years. No occupation. Brought to Mental Hygiene Clinic on Oct. 10, 1920.

Family History.—Negative.

Personal History.—Patient was late in developing, having walked at 17 months and talked at the same time. Had never been bright and has been able to learn to read and write to a very limited extent. Her menstruation was established at 13 years, regular, of three or four days' duration.

Present Illness.—Since the age of 12 years the patient has suffered with generalized convulsions every four weeks and usually about one week prior to the onset of her period. At first they were nocturnal, but of late have been diurnal.

For the past month the patient has been very irritable, sullen and depressed. At times she has imagined that those about her talk and laugh at her. Threatened suicide and is very difficult to manage at times.

On examination corroborates the history given above and shows a distinctly defective make-up. The intelligence by the Stanford Revision shows a mental age of eight years and four months with an intelligence quotient of 52 per cent, with a basic year of six years and a grasp limit of ten years, so that she would be classified as a high grade imbecile.

Physical Examination.—Reveals a very large female of about five feet ten inches in height and 180 pounds weight.

Her hands and feet are very large, the patient wearing a 7 glove and a 7-B shoe. Her hands and feet are very cold and she perspires very freely. The cheek bones are very high and the head is large. General neurological examination is otherwise negative.

Roentgen-Ray Examination.—The infundilum is narrow. There is marked development of the air sinuses of the skull. The sella turcica is of large size. Its floor is regular. The dorsum sella is moderately thin and the anterior clinoid is of normal size and thickness. Ossific development in the hands is normal, but the bones are of unusually large size. The marked development of her sinuses and the large hands are acromegalic features. The blood Wassermann and the laboratory examinations were negative.

Course and Treatment.—She was placed on ovarian extract, grs. I and pituitary (whole gland), grs. I, both three times a day before meals. Under this treatment her general condition improved. There was an absence of convulsions for almost two months. At the end of this time, however, she had three general convulsions which were not as severe as usually observed, and she was very irritable for a few days after. Otherwise, she has continued to feel well and has lost some weight. On Feb. 2, the patient reported that she had one convulsion, but this was the first one that she had since Dec. 20.

Feb. 16, she reported a convulsion after which she was rather disagreeable for a while. There were no further convulsions until March 13, when she had three.

She again reported on April 13 that she had had only one convulsion since her last visit. She looked better physically. Had lost five pounds since beginning treatment and seemed much brighter. Intelligence test on this day showed an intelligence quotient of 55 per cent, showing that there was some improvement intellectually, although it was comparatively slight.



Case VII.—Sella turcica is small and closed in. There is no lesion of the clinoid processes nor evidence of increased intracranial pressure.

CASE VII.

A. D.—Female, aged 22 years. Single. Occupation, factory worker. White. Seen at St. Peter's Hospital, Brooklyn, March 13, 1921.

Family History.—Mother died of apoplexy. History otherwise negative.

Personal History.—Normal development as a child, with whooping cough at the age of 9 years and measles at 12. Had pneumonia twice; the first time at the age of 15 years and the second time one year ago, following which she developed an empyema for which she was operated upon. Habits good.

Menstruation began at the age of 11 years and has always been regular, but the period lasted only one day. Prior to the onset of menstruation for about twenty-four hours has severe pain and usually has an epileptiform convulsion.

Present Illness.—With the onset of menstruation at the age of 11 years the patient has been subject to generalized epileptiform convulsions, usually coming on the day of menstruation or the day before. She has only one convulsion. There are no auras, and from the description appear to be epileptic in character. Her attacks usually occur early in the morning and while they are chiefly at the menstrual period, occasionally the convulsions will occur one week prior to the period.

Physical Examination.—Reveals well nourished and developed adult female of about 130 pounds weight, five feet five inches in height. Hair on head, axillae and pubic region is coarse and abundant. There are no hair on the arms or legs. Skin is dry. There is a moderate bilateral thyroid enlargement. General physical and neurological examination otherwise negative. Blood pressure systolic 120, diastolic 90. Laboratory examinations, including blood Wassermann,

are negative except that she has shown a faint trace of sugar in the urine at times, with a specific gravity varying from 120 to 125.

Roentgen-Ray Examination of head showed a small closed in sella turcica without evidence of intercranial pressure.

Course and Treatment.—The patient was placed on ovarian extract grs. I t. i. d. and thyroid extract grs. I once daily before meals. She was kept on the thyroid for several weeks. This was discontinued because she seemed to be getting restless and nervous, and she was placed upon pituitary extract (whole gland) grs. I t. i. d., in addition to the ovarian extract. Under medication she felt better generally and her menstruation appeared on the 17th of March. She had a general convulsion on the 18th. On April 23 she had a generalized convulsion lasting about five minutes. This convulsion preceded the onset of her menstrual period.

This case is still under observation, so that the final outcome is uncertain.

The glucose tolerance test is not used in this case because of the fact that she has a faint trace of sugar in her urine and it was feared that bad results might come from a sudden accumulation of sugar in the system.

COMMENT.

CASE I showed evidences of dysthyroidism with dysovarianism, probably with dyspituitarism. The ovarian deficiency appeared to be the dominating one, and there was marked improvement in her case under treatment.

CASE II showed dysovarianism with marked improvement under treatment.

CASE III showed definite dyspituitarism with some ovarian deficiency and a possible pineal complication, although the influence of the latter is problematical unless it existed when she was quite young. She showed a marked improvement under treatment for the ovarian and pituitary deficiency.

CASE IV showed a definite dyspituitarism, with some improvement under treatment which might have been more marked, had the patient kept up proper treatment.

CASE V showed a definite dysovarianism with a probable dysthyroidism. She has shown a very marked improvement under treatment for the ovarian deficiency, but reacted badly to thyroid treatment.

CASE VI showed a definite dyspituitarism and dysovarianism with improvement in conduct and in frequency of the attack under therapy. She is very defective mentally and will remain so for the rest of her life.

CASE VII showed a definite dysovarianism with a possible dysthyroidism. She showed some improvement, but the case has not been under

treatment long enough to state the final outcome.

There were four cases showing a small sella turcica, one of which showed in addition calcification of the pineal gland, and another calcification of the posterior lobe of the pituitary gland. The cases showing dyspituitarism all showed the small sella turcica with the exception of one which showed the large sella turcica and acromegalic features.

Conclusion.

1. There appeared to be a definite relation between deficient ovarian secretion and epileptiform attacks.

2. There appeared to be a definite relation between dyspituitarism attended by deficient secretion and epileptiform attacks.

3. Practically all of the cases showed more than one glandular involvement.

4. Striking physical abnormality was absent, except in one case.

5. The failure of the attack to disappear entirely in some cases may be due the effect that glandular involvement other than those established were overlooked, and therefore not medicated, or establishment of the epileptic habit rendered this form of discharge of energy more difficult to control after being present for some time.

6. Transitional forms of various endocrinous disturbances should be sought for in every case of epilepsy.

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PYELITIS.*

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THE limited time will permit only a brief sketch of my subject and, for that reason, some of the statements may appear a bit dogmatic. On mooted points little, if any, discussion can be attempted.

Urologists are generally agreed that renal infections are blood borne, and that pyelitis is usually secondary to involvement of the parenchyma, though there is some evidence to show that bacteria can localize primarily in the pelvis.

We constantly take into the blood stream bacteria that are destroyed or eliminated with-

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out harming us. The idea that the entrance of bacteria into the blood is always serious is erroneous; more and more are we respecting its great ability to rid itself of organisms, and we are gradually crediting it with the same resisting powers that the abdominal surgeon has learned to ascribe to the peritoneum. Both the blood and the peritoneum can stand bacterial insults that would not be tolerated by other tissues.

Under certain conditions of bacterial virulence and local or general resistance, we are unable to withstand these bacterial invasions, and we suffer tissue damage. Rosenow has shown bacteria have a selective action upon certain organs.

For the development of pyelitis there must be a source of infection from which bacteria enter the circulation, and some factor or factors rendering the kidney and its pelvis vulnerable. Of the first causes may be mentioned infected teeth, diseased tonsils and sinuses, appendix and gall bladder diseases, wounds, either accidental or operative. Lesions in, or disturbances of, the intestinal tract are common sources of infection. These causes are by no means all, but are the ones most frequently operative. Renal infections so often follow operations, especially those that involve the intestinal tract or the perineum, that I feel special mention must be made of this fact.

Among the causes rendering the kidney susceptible are to be enumerated such as produce

1. Congestion.
2. Irritation.
3. Faulty drainage.

Some fall in more than one of the above classifications. For instance, renal mobility is a source of congestion from the disturbance of the venous return and bad drainage because of a kinked ureter.

Factors causing congestion may be mechanical, chemical or toxic, as renal mobility, cantharides, the toxins of infectious diseases.

Of irritants, stone is the most frequent, though at times growths in the pelvis are encountered.

Drainage is most often interfered with by stone, kinking, stricture, the pressure of the pregnant uterus, pelvic growths, inflammatory exudates, or blood clots from renal growths.

It is necessary for the production of a renal infection to have more than the source of infection and the predisposing causes; there must be added an activating factor, such as great mental worry, fatigue, or sudden chilling. In my experience exposure to wet and cold has most often precipitated an attack, with the possible exception of operation, and even here the exposure may be a large factor. Recurrences, or more properly, an exacerbation of a

quiescent infection are more easily produced than the original attack, so the necessity of advising against the causes thought to have initiated the first attack.

While the colon bacillus is most often found, it is possible that others may have been present in the beginning and have disappeared as a result of the overgrowth of the colon bacillus, or eliminated by the natural resisting powers of the body. Baisch years ago made this observation. It may also be that colon bacilli circulating in the blood would not have found a nidus in the kidney unless it had been already damaged by other bacteria.

The virulence of the infection varies from the fulminating type to that in which the symptoms are so slight that they are scarcely noticeable. There may be one single attack, with death or complete convalescence, recurrent attacks, a chronic type with acute exacerbations. Usually one kidney is infected, next most frequent is the affection of the second kidney a few days after the first, and last in frequency is the simultaneous involvement of both. The liability to bilateral involvement should make one chary in advocating operation, especially nephrectomy.

The onset may be acute, sudden and severe, or so slight that the patient is little disturbed. Even in the acute cases, careful questioning will often bring to light the fact that the patient has been indisposed for a few days before, as shown by headache, anorexia, and general aching pains.

In the very acute and fulminating types there is a chill followed by high temperature, rapid pulse, at times delirium and marked prostration. Usually there is pain in the affected kidney, though this may be so slight that little impression is made on the patient; tenderness, however, can usually be elicited. This passes off in a few days, even though the patient continues acutely ill. In the acute cases the chills occur at irregular times and are succeeded by high temperature. At first there may be no pus in the urine and this for one or both of the following reasons. The infection is primary in the parenchyma and it is not until the pelvis is involved that pus is eliminated. Again, there are periods when the ureter becomes obstructed, from swelling of the mucosa, and does not drain urine into the bladder. Under this condition there may be no pus in the urine unless the bladder is involved. After a short time the bladder becomes involved and there is a complicating cystitis. Some of the acute persisting types simulate sepsis or typhoid. There is usually a high leucocytosis.

In the more chronic types there is slight renal pain, mild temperature at times and urinary frequency.

Diagnosis: If the condition is kept in mind there is seldom any difficulty in making a diagnosis, except during the first few days when no pus is appearing in the urine. As before stated, there may not be pain enough in the renal region to attract the patient's attention, or in the infection that follows operation, the operative pain may so overshadow the other that it is not appreciated. Usually it can be brought out by deep palpitation or hammer percussion. All post-operative temperatures that do not show some definite cause should be suspected of having a renal origin. Pyuria, high temperature, with or without chills, renal tenderness, and bladder irritation almost surely indicate pyelitis. Such a diagnosis can be readily corroborated with the cystoscope and ureteral catheter.

In the chronic cases the cystoscope and the ureteral catheter are necessary in making a diagnosis and localizing the trouble.

Nowadays the diagnosis of pyelitis is not sufficient. We must know if there are complications, such as stone, ureter stricture, pressure from growths, etc., and the degree of structural and functional damage done the kidney. All can be proved by radiography, pyelography, renal function tests and blood examination. It is worse than useless to treat a pyelitis where, as a result of obstruction and infection, the kidney has been destroyed. Such a kidney is better out.

Treatment: Predisposing and exciting causes must be discovered, eliminated or remedied as soon as practical. Of course, during an acute attack no one would think of extracting teeth or removing tonsils, etc., but uterine malpositions or pressure from a pregnant uterus can be relieved or lessened. At a suitable time, however, the source of infection must be given attention.

In the fulminating attacks, when the patient is in a desperate condition, nephrectomy must be done if only one kidney is diseased. Fortunately, these cases are rare.

In acute attacks not requiring operation, the patient must be put to bed and absolute rest enjoined. Heat applied to the renal region is grateful and has a beneficial effect on the condition; dry cupping also is of value. For the first week or ten days, sodium citrate or sodium-bicarb or both are given every three hours in forty to sixty grain doses; if not tolerated by mouth they may be given by rectum. Water is forced by mouth. Colon irrigation, either with tap water or a 2% soda bicarb solution, is done once or twice daily. If pregnancy exists, an attempt is made to relieve ureteral pressure by posture. In the majority of cases betterment is noted in a few days; there is a drop in

temperature to normal or near normal. When such occurs the patient is put on urotropin and acid sod. phosphate.

Should not such favorable effect be produced in a few days, ureteral catheterization and renal lavage should be done. In the first two or three days of primary attacks, when the infection is in the parenchyma, such a procedure is of no value; but when pus is found in the urine or early in the recurring attacks, it is a most efficacious procedure. If gently and carefully done there is little discomfort or damage and the results are often dramatic. I do not hesitate to repeat it every two days, or even every day. Silver nitrate in .5% strength has given the most satisfaction. This, I think, causes a shrinking of the swollen ureteral mucosa and increases the drainage. To me, this is a most rational procedure and certainly the results are excellent. An acute cystitis causes greater difficulty and more pain, but is not a contra-indication.

The majority of the acute attacks get well spontaneously or on simple treatment. Those that do not, fail because of some factor that is a constant source of infection or interferes with drainage. If we grant this is so, then we must find our sources of infection; eliminate them, and establish drainage. Ureter stricture is a frequent cause of bad drainage and must be relieved by dilatation if we are to get good results.

Before instituting treatment of the chronic cases we must determine the function of the kidney and the damage done. It is in the old chronic infections that the great value of local treatment is seen. The majority have had all kinds of other treatment—including acids, alkalies, antiseptics and vaccines. There are a few we cannot cure by local treatment, but it is seldom that even these are not benefited. In the cure of these cases we accomplish more than the relief of a local condition. Many of the colon bacillus infected patients suffer with absorption symptoms, as shown by mental depression, weakness and often arthritis.

The lavage treatment is applicable in girls of four and over, and in boys as young as eight. Kretchmer has reported brilliant results in a series of eight children with chronic pyelitis. Our youngest patient was a girl of six to whom this treatment was given painlessly—without any form of anesthesia.

The local treatment has given me better results in both the acute and chronic infections than anything I have tried. It must be remembered that most of the chronic cases have been treated for years by all other kinds of methods—the success in these is the best endorsement.

SOME THERAPEUTIC SUGGESTIONS IN THE MODERN TREATMENT OF EPILEPSY.*

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IN the past we have tried to understand and treat epilepsy upon too narrow and mechanical lines. Specific organs and functions both in the brain and bodily viscera have been accused, but all have lacked constancy and degree of defect to account for the disorder. We are then thrown back upon the assumption that the essential fault in the epileptic is a biologic one.† Our organic and mechanical principles have helped us to understand the nature of the convulsive fit itself, but have not advanced our knowledge regarding all the mental aspects of the disorder. So far as the convulsions themselves are concerned, they do not essentially differ from those seen in a host of organic diseases, as Bright's, diabetes, paresis, and arterio-sclerosis. Try as best we may, physics and chemistry only make patent the mechanism by which the convulsion is brought about, but they do not explain the essential disorder itself as a degenerative one; hence we are driven to the biologic point of view to understand and treat it.

What is this biologic concept as applied to epilepsy? Essential epilepsy is primarily a mental disorder based upon a constitutional defect of instincts, mental and physical, in which the loss of consciousness is the nucleus of its symptomatology. The convulsion is secondary, and may be altogether absent. The biologic approach is not simply a broader and more comprehensive aggregation of the different chemical and physical processes of the body. Its fundamental postulate is that man shows himself in living structure and living activity, and that a summation of all his different living responses when grouped together produce certain results which no one or several functions possess. In history, for instance, we have now learned that it is impossible to gain a correct historical interpretation of a certain period by merely a summation of the great minds of that age. Likewise we have learned that society is not merely the aggregation of so many different individuals, and that an understanding of the individual psychology of the different members will give an understand-

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† One might say that our approach could be called a study in Biotics, which as defined by the Century Dictionary is the science of vital functions and manifestations; the powers, properties, and qualities peculiar to living organisms; or vital activities proper, as distinguished from the chemical and physical attributes of vitality. These activities are often designated as vital; but since this word is generally made to include at the same time other manifestations which are simply dynamical or chemical, T. Sterry Hunt has proposed for the activities characteristic of the organism the term *biotics*.

ing of the sociology of a community group as a whole. No. The functioning of the aggregate is something more than a collection of its several components.

What is it, then, that is superadded or inherent in a human organism not demonstrable in the activities of its several parts? It is the whole environment, both in time and space, from which the functioning of a human organism *cannot be separated*. It is really a part of it, the very personality, the interacting of the individual as such—its past inheritance, its present activity, and the portent of future relationships. For the purpose of investigation we do double violence to study our subject in the static state—in other words, merely making a categorical list of the individual's defects as presented in a consultation account. To study an epileptic properly an observation upon all his normal human activities is necessary.

What are the defects of personality which the epileptic shows when thus biologically studied? We find the fits as such are but a part of an inherent defect. First of all, exact studies show they are possessed of a similar but variant makeup of personality and constitution. The specific faults of make-up show there is a congenital defect in the primary instincts; these are roughly summed up in the egocentricity, supersensitiveness and the lack of a rich and varied capacity to use their minds in a natural and normal manner; this we call emotional poverty. The epileptic may not suffer a special intellectual defect before the advent of his disease, but he invariably shows defective normal social adaptations, to the home, school, and community life. Other so-called norms have similar character defects, but not to the same degree, nor do they possess these characteristics so exclusively as the potential epileptic. This statement is based upon a long series of careful studies.

The next point in our thesis is that an individual so endowed can neither stand undue physical stress nor mental ones. In consequence they break down in more pronounced manifestations of the disease so soon as these life stresses prove too onerous. In other words, the make-up determines the line of break; the potential epileptic then responds to his inherent constitutional weakness. This principle is comparable to that which we know holds good in other physical and mental diseases. The legion of inciting causes are then only precipitants. Shall we treat the epileptic, then, on the basis of the alleged cause and try to suppress the prominent symptoms, or take into account his profound inherent biologic defect? Obviously the latter course is the rational one.

First of all, we must lessen or remove the immediate stress. We must place the epileptic in that sort of physical and mental environ-

ment to which he can normally react. Then begins the educative and developmental system of treatment along the lines of his innate defects, be they physical, mental, or both. The make-up invariably connotes physical defects. Simply because we here stress the fundamental defects of instincts, it does not exclude the importance of the best physical and chemic studies of the problem, only giving attention to the latter, as has so often been the rule in the past, fails to grasp our problem in its entirety.

What clues for an exact re-educational treatment do we follow up? First of all, a comprehensive study of the manner of thinking and acting of the epileptic must be made. On this data we then can base our treatment. Again, however, we must not do surface plowing and not go deeply into the problem. The life reactions which the epileptic shows in his self centering concern must be broadened tactfully and painstakingly into a trend of work and interest that shall lessen his conflicts and stresses. We may teach him indirectly a better world philosophy and manner of handling his difficulties and thus avoid the wide swings of emotional reaction that perturbs his very soul. Obviously, in the more pronounced defects this training treatment has to be done away from home, but in an environment that has an equal variety of interest and appeal. From a study of the conditions that precede the lethargies, tempers and twilight states of petit mal we may gain much information for our educational plan of therapy. Then gradually we can increase the social and environmental demand. This main principle of treatment takes months or years in the severer cases. It is obvious if we can properly tranquilize our patient chemic repression of the fit episodes are not needed. The latter should be used only when we fail to control our patient and his environment. As regards the fit episode itself, we look upon it as a mentally regressive symptom, that is, the attack breaks off the conscious demand and allows the psyche or intimate unconscious activity to concern itself with those things that the individual experienced in earliest life. Studies of the twilight states and dreams prove this. Thus conscious and unconscious motives may be requisitioned in the training treatment.

Moreover, it seems more than likely that we must also revise our conception of the so-called loss of consciousness in epilepsy. It would seem that while there is a break in the awareness of the patient's environment that his self-awareness is really heightened or increased. Even in the severe grand mal the semi-conscious heightened self-awareness passes insensibly over into the most intensive self-concern, although this state may in one sense be called unconscious. Another point we may note, by the way, is the disorder is really organic, but

not in the narrow sense this term is usually applied to a definite and specific lesion in the cortex, but a widespread impairment and deterioration of the psyche as a whole and the lesion is ultra microscopic. This position is fortified by the fact that less than half the cases coming to autopsy show no specific and constant lesion of the brain and in a large per cent no lesion at all is found. It is interesting to note that the fits are not the chief or sole deteriorating agents in epilepsy, although the two may be connoted. Many cases cease having attacks and yet actual psychologic tests show continued mental deterioration ensues. The converse may also be shown.

Unless there is a cessation of attacks plus a normal and healthful readaptation in our arrested cases we cannot hope for a permanent good prognosis in the individual case.

In conclusion, we may say: (1) Essential epilepsy is an organic disease of the whole personality, shown in a series of defects of instincts; these outstanding faults are summarized in egocentricity, supersensitiveness and emotional poverty. (2) The fit is the maximum periodic manifestation of the disorder; it is a psychic regression phenomenon, a protective release of the mental mechanism from too intense physical and mental stress. (3) The line of treatment is analytical, explanatory, and a broadly re-educative one, physically and mentally.

FEAR—A HARMFUL EMOTION. HOW MAY WE ELIMINATE IT FROM THE SURGICAL PATIENT'S MIND?*

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THE offspring of wild animals at birth are without fear, but that instinct needs only a few days of mother training to be developed to a high degree. Unhappy is the lot of any wild thing who loses its mother during the first few days of life, for without the fear instinct developed, it soon falls an easy prey to its many enemies.

Fear, therefore, as a means of protection, has been of untold advantage to all species in their development, especially to man, who survived not alone, perhaps, because he was fit, but because he knew when to retire and live to fight at another time.

This self-preservation instinct to flee from danger and to avoid painful contact coming down to man through the ages calls forth immense emotional and muscular activity. The thought or memory of an escape from an attack may cause the greatest degree of emotional excitement—so also the apprehending

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of an oncoming encounter with foe or surgeon may produce the same state of mind and body, and even though the individual remains passive during it, his exhaustion will be more complete and more profound than if he had given vent to his emotions in some form of motor activity. It is a well-known fact that fear associated with pain may exhaust the organism to the point of death. Our surgical patients whose minds are racked with these emotions of fear and worry are often exhausted before they are anesthetized, and are fit subjects for surgical shock and death. In no other disease is the relation between fear and the severity and aggravation of symptoms better shown than in exophthalmic goiter. The reduction in the operative mortality in the treatment of this disease has not been due to any improvement in technique. It has come about since we have had a better understanding of the disease and of the harmful effects of fright upon these patients. Crile's great work of anoci-association is a monument to his splendid genius!

Cannon has shown that all bodily functions are altered and perverted by the emotions of pain, hunger, fear, and rage—fear and rage being the most harmful. The preoperative rise in temperature, the fast pulse, the tremor, the insomnia and at times the glycosuria, are the results of terror which grip the mind of the patient about to be operated upon; oftentimes the subnormal temperature, the lost appetite, the drawn face and the languor seen in the post-operative patient are caused by grave worry and doubt. It is surprising to see the improvement in these patients as their mental attitudes are changed by suggestion.

Psychoanalysis reveals that much hysteria, psychoneurosis, and neurasthenic states have as their origin some past emotional upset—usually attended with fear or fright. We are all familiar with cases showing hysterical paralysis, aphonia, aphasia, or blindness which can be definitely traced back to some terrifying emotion.

Granted, then, that fear is a harmful emotion which may be the foundation of future mental illness, which upsets bodily economy, retards convalescence, interrupts recoveries, and when severe and associated with pain may cause death, is not an earnest effort upon our part to eliminate this emotion from our patient's mind justifiable? What may we do in a practical way to eliminate it? In the first place, the patient should be considered from a psychological standpoint from the time she is admitted until after she leaves the institution. During her entire stay her mental welfare and comfort must receive the same careful consideration as her physical welfare—for the majority of our patients are mentally, as well as physically, ill.

The personnel of the hospital should be chosen with great care, and the personality of each worker must suit the position he is to fill. Few of us realize how timid and diffident most of our patients are upon admission, or how easily they may be hurt by apparent inattention or frightened by their new surroundings. It is so important to have their reception a cordial and a friendly one, for the first impressions they get of the hospital and of us are often lasting ones.

The doorman at the hospital, the telephone girls, and the clerks in the office of admission are very important members of the hospital family, for they come in intimate contact with the patient and the public, and yet how little thought and care are displayed in choosing individuals for these important positions. Some hotels and hospitals employ only fat doormen, and rightly so, for the fat man is usually good natured and cordial and with it all slow to anger. A rasping, shrill, impatient voice of a nervous telephone girl in the office of admission or the cold, business-like filling out of a questionnaire by some frigid clerk oftentimes gives the new arrival the wrong impression of the spirit in the institution. Here a little display of cordiality and friendly feeling is by no means lost, for, as mentioned before, our patients are diffident and easily hurt.

Upon admission to the ward, the new arrival should be waited upon promptly by attendants and nurses who have been specially trained, and she must be spared seeing, smelling, and hearing things which are objectionable to her. In other words, she is best admitted to a ward filled with only convalescent patients, who are happy and free from pain. If this can be done the chances are the patient's mind will be robbed of its fright and she will be made to feel at home at once. If, on the other hand, she is allowed to sit for a long time without notice or attention, watching those hurry by who have special missions to perform and who are too busy to greet her, she will feel hopelessly alone; or if she is given a bed next to a post-operative case who is groaning with pain, or one in the throes of having a gastric lavage, or if she be unfortunate enough to get a couch next to a patient in the typhoid state, it is not difficult to imagine her state of mind or to blame her for wanting to be back home again. The hospital that is equipped with many recovery rooms, small wards, and isolation corridors for the post-operative, the very sick, or those in delirious states is indeed fortunate, for the big ward should be made up of the new arrivals and the comfortable convalescent patients. It is wise not to move our operative cases into the big ward until they are free from pain, if it can possibly be avoided. No lavages or painful dressings should be done in

the ward, nor should a death be allowed to occur there. The mental peace of the new arrival should have this consideration, for fear injected into her mind at the beginning of her hospital stay is a bad impression if she is to have a comfortable and a quick convalescence.

It is not right to have operations delayed for an unnecessarily long time if there is nothing about the patient's case that justifies such a delay. The surgeon or his associate should visit the patient the night before the operation. At this time the patient is assured that her malady is curable; the operation is indicated and that her physical condition has been found to be perfectly satisfactory. If possible, she should be allowed to talk with convalescent patients who have had similar operations and who have had quick and comfortable recoveries. This will do more to encourage her than we realize. The spirit to win is half of the battle in all games of life, and the patient who feels, or can be made to feel, certain that she is going to come through a surgical ordeal usually does get well. On the other hand, the patient who is convinced he is going to die before his operation, who doubts what he is told about his operation, and who fears that everything is being misrepresented to him, generally does die or have the most stormy sort of a convalescence. (I say "he" very advisedly.)

The night or nights before operation must be spent in sound, restful sleep. Our patients should not be dehydrated by pre-operative purges and their rest broken by numerous trips to the bathroom. Most surgeons have discarded the castor oil or saline purge, and now rely upon the mildest laxatives or enemas, and rightly so, for our surgical patients need rest and fluids immediately before operation.

Our operations should be scheduled as early as possible to spare our patients the dreaded wait, the annoying thirst and the prostration from hunger. If for any reason the operation cannot be performed until late in the morning or in the afternoon, we do not hesitate to give our patients warm fluids, as coffee, tea, and broths.

The subject of the anæsthetist and the anæsthetic is extremely important and vital if our patients are to be spared fear and fright. The treatment of the exophthalmic goiter patient by Crile's anoci-association has been purposely left out of this discussion because it is so refined and so complicated. Any surgeon, however, who is able to successfully employ the technique of anoci-association to his goiter patient can be justly proud of his anæsthetists and his organization and can take satisfaction in his ability to perfect such an organization. The anæsthetist must be a skilled psychologist and have a personality which can readily apply

different kinds of suggestion to different individuals. At the beginning of any anæsthetic—chloroform, ether, nitrous oxid—a mixture of eight parts of suggestion and two parts anæsthetic is the best one known. If the fears of the patient can quickly be allayed by a constant stream of suggestion she will no doubt go to sleep quietly and recover from the anæsthetic in the same state of mind. The older text books of surgery show cuts illustrating the stage of excitement during anæsthesia. The service of five or six of the strongest helpers in the hospital were enlisted to control the patient during this period. These terror-stricken individuals invariably woke up in just the frame of mind in which they went to sleep—kicking, struggling, screaming, and trying to flee from something horrible. Is it any wonder that these frightened, starved, dehydrated, strychnine-lashed patients had anything but a horror of our hospitals? The writer may be wrong in his belief that the subconscious mind goes to sleep last and is the first to recover in anæsthesia, but there is much evidence to support it.

The question as to whether our patients had better come to the operating room for anæsthesia or be anæsthetized in special rooms is a much debated one. (Here again the exophthalmic goiter case is not considered.) If the case can be accompanied from her room or ward by the anæsthetist and welcomed by a friendly group in the operating room where no instruments are in sight, her attention undoubtedly will be so attracted by what is being said to her that her fright, if she has had any, will be forgotten. If, however, she fears the operating room she is anæsthetized in a special room. During the anæsthesia she is left entirely with the anæsthetist. She must never hear the rattling of instruments; and it is well to train the operating team to keep their peace while the anæsthetic is being administered. Witticisms and laughter are best tabooed, for it is serious business to the patient, this being operated upon, and she does not want her case considered in a light-hearted way. Equally important, a discussion of her case is not wise, for she may be able to hear even though she cannot talk, and be badly frightened by having certain details of her case discussed which have not been gone over with her. The writer knows of an instance where the surgeon, believing the patient to be asleep, said to his assistant: "We will first explore the gall bladder, and if we don't find the stone we will turn him over and look at the kidney." "No," said the patient, who was not asleep, "some other surgeon who knows what he is going to find shall operate upon me!"

The anæsthetist is the most valuable member of the operating team, and if properly

trained, and with the right personality, can do more to rob the surgical patient's mind of fear than anyone else.

Can anyone witness the successful anæsthetizing of young children and see child after child put to sleep without crying, without struggling, without fright, and not admire the great skill that is being shown in suggestion and hypnotism? Or, who of us, after seeing a screaming, struggling child asphyxiated by a poor anæsthetist, is in the position to say just how much or of what type of future mental ill-health may have its origin in the fright caused by this bad anæsthesia?

It is important to have the patient recover quietly from the anæsthetic in a recovery room. She must be administered to by a nurse who has been specially trained and who will assure her that the operation has been successfully performed and that her condition is excellent. Quiet, calm assurance at this time that everything is as it should be works better than sedatives, although it is essential that immediate post-operative suffering be controlled by morphine. We give frequent small doses of morphine for the first two days, and large amounts of fluids by mouth and rectum soon after operation. Everything possible is done for the comfort of these patients. After operation nurses are with them constantly and they have frequent visits from the surgical staff. The apprehensive patient who is allowed to suffer cannot be convinced that her condition is satisfactory—it is far from being so to her—and she fears an unsatisfactory or fatal outcome. The services of a corps of efficient, loyal, well-trained nurses, who love their work and look upon it as an art and not as a trade, are indispensable at this time.

The convalescent period of the successful surgical patient is short and certain. If there is good morale in the hospital, and in the ward particularly, the patient will be carried along on the tide of optimism and a feeling of security. The surgeon must come in close contact with his patients, for he knows that he need not be feared in order to get his full quota of respect. Too much etiquette and ceremony during rounds do not encourage the friendly association that the chief ought to have with his convalescent patients.

All surgical patients must be examined by the surgeon or his associate when they are ready to leave the hospital. At this time the patient's disease or operation should be explained to her in detail, all final instructions for her after-care should be carefully given her, besides telling her that her home physician will be written to about her case. This gives her a sense of security at home, and the request that she write back a report of herself from time to time is met with delight, for she feels

that the interest shown in her will not come to an end when she leaves.

The surgeon cannot rely upon his operating skill alone for his full measure of success, for it is necessary to give himself freely to his patients at all times. They need to be comforted, assured, and bolstered up for the trying ordeals they are about to undergo. The surgeon's optimism must be contagious—his co-workers must all be infected by it and his organization trained in practical psychology if the patient's mind is to be freed from the harmful emotions of fear, apprehension, doubt, and worry.

Little touches of human kindness—strict and constant attention to the patient's mental welfare will do much to rob our hospitals of their cold institutional atmospheres which frighten so many of our diffident patients and often interfere with many a satisfactory recovery.

SOME PERSONAL PSYCHOANALYTICAL EXPERIENCES WITH PROF. FREUD.*

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AS an indication of the interest taken in psychoanalysis in Europe, it may be mentioned that the sixth International Congress of Psychoanalysts held at the Hague in the early part of September, 1920, was the first international congress of the medical profession held since the war, at which the members attending were nationals of nearly all the principal warring and neutral nations. Great interest and activity were displayed by those present, who came from England, Holland, Switzerland, America, Germany, Austria and Russia. At some of the sessions fully 100 individuals, mostly members in good standing, were present. All the members were of the Freudian school. Many papers of great value on technical and applied psychoanalysis were read. All in all, attendance at the meeting was stimulating, and gave one an inkling of the progress of psychoanalysis in Europe. Reports by the various members of the different countries were, in general, encouraging as to the advance of psychoanalysis, both in a special and applied sense. Especially noted was the advance in England during and since the war. The status of analysis in Austria, as evidenced in Vienna, is very satisfactory. It is to be noted that in Vienna there is no attempt, as far as I know, to found a psychoanalytical society by any of those who seceded from the Freudian school. I have reference to Wilhelm Stekel and Alfred Adler. On the contrary, the followers of Freud have a very active membership in the Vienna Psychoana-

* Read at the Annual Meeting of the Medical Society of the State of New York, at Brooklyn, May 5, 1921.

lyst Society, to the number of about twenty-five. The members are actively and keenly interested in the work. Meetings are held every two weeks, and are well attended. The impression I took away with me, both from the International Psychoanalytic Congress at the Hague and from my associations with the members of the Vienna group of analysts, is a very favorable one, and leads one to expect greater progress in the near future.

So much for a very brief summary of the situation in general. In presenting to you some of my personal experiences with Prof. Freud, I shall give in detail, not so technical as to make it uninteresting to the non-analyst or the general neurologist, the technique of analysis as I noted its employment by him in his analysis of me.

It is a generally accepted fact among analysts, and a point frequently emphasized by Freud that a psychoanalyst must have been himself analyzed before he can hope to master the technique. Freud has also stated that in persons exceptionally free from conflicts and psychic inhibitions, a self analysis of his own dreams may be sufficient to enable such an individual to practice psychoanalysis. Such individuals must, however, be few in number. However, as the technique grew in complexity, owing to the fact that continued work with the neuroses demonstrated the existence of more numerous factors concerned in their formation than were previously evident, it gradually became clear that reading of psychoanalytical literature, analysis of one's own dreams, and the attempt to apply practically knowledge thus gained, fell far short of being the ideal method of becoming proficient in the practice of psychoanalysis; a thorough analysis by a competent analyst is a *sine qua non* for the individual who wishes to do satisfactory work in this field.

In no wise does the analysis of one who intends to practice psychoanalysis differ from that to which one suffering from a neurosis submits himself at the hands of an analyst. The student must submit himself to the same technique as does a patient. It is only in this way that the student can master the technique. In this respect instruction in other branches of medicine differs radically from that in psychoanalysis. This is due to the fact that as far as unconscious mental processes are constituted, they differ in the normal from those in the neurotic in degree only, and perhaps also in their more ready demonstration in the latter. The difference does not lie in kind. He who wishes to become an analyst must realize in himself the existence of such unconscious mental functioning, its nature, its mode of acting, its mechanism in evidencing itself, and also its ability to conceal its activities. It

is essential for one practicing analysis to know himself in a very literal sense before he is able successfully and in a competent manner to treat a patient. Knowing one's self is preliminary to knowing the mental processes that govern human conduct in general, and in particular to knowing the psychic nature of the neurotic disturbances. If the analyst himself be not free from psychic conflicts and inhibitions, he will be unable to help the patient recognize such impediments to a cure.

Prof. Freud, then, analyzes the future analyst under the same conditions, with the same technique as obtains in the case of a patient. He sees all patients, certainly until well along in the treatment, every day, except Sundays and holidays. Each session lasts one hour. With few exceptions the analysts in this country are in the habit of seeing their patients three times a week. Before my experience with Freud, like the other analysts, I, too, saw my patients three times a week. I have, therefore, some means of comparison, and feel that seeing a patient daily has at least two distinct advantages. Firstly, it cuts the total duration of the treatment in months at least in half. I mean that the treatment extends over a period of fewer months. Secondly, and this is the more important of the two, the rate of progress is more steady and satisfactory, on account of the fewer interruptions. More of the material produced by the patient; as, for instance, in the dreams, is available for the analysis.

All analysts on the Continent, and in England also, have their patient recline on a couch, with the head towards the analyst, who sits at the head of the patient, just out of range of the latter's line of vision. The reclining posture has the advantage of producing relaxation, and enables the analyst to note even minor movements of an involuntary or unconscious nature on the part of the patient, who at the same time cannot be occupied with watching the analyst. We in this country, with few exceptions, had been in the habit of having the patient sit in a chair facing the analyst. I feel that this has the disadvantage of the patient paying too much attention to the person of the analyst, especially to his facial expression, attempting to interpret looks, gestures, etc. In other words, the patients analyze the analyst.

With the patient (future analyst) in the reclining position, the next step is to proceed with free associations. He is told to give whatever comes into his mind, without any reservations whatsoever; to omit nothing, however trivial or irrelevant or unimportant the thought may appear. The patient is to lay aside all critique. No questions of a nature meant to lead on the patient are put to him by the analyst.

The next point of interest which I wish to take up is that of the resistance, indicated frequently early in the treatment by silence; the patient says that no thoughts occur to him. The management of this phenomenon requires great technical skill. The resistance originates from two sources: firstly, from the repressed material in the patient, and, secondly, from repressed thoughts the patient has in reference to the analyst. The phenomenon illustrates the point previously mentioned, that there is no qualitative difference between the unconscious mental processes of normal and neurotic, and perhaps lends emphasis to a statement made by Ernest Jones that a wholly normal person is an anomaly, and that a so-called normal person is more likely to be abnormal than a neurotic.

The resistance originating from the attitude of the patient to the analyst embraces the phenomena of the transference. To one like myself, Freud holds the position of the father of psychoanalysis, and he very readily becomes a father substitute, and brings out nicely the situation of child and parent. As in the case of patients in general, so in this instance the phenomena of the transference were very interesting and very important for the progress of the analysis. The phenomena of the transference constituted a very important phase of the psychoanalytic experience. They demonstrated that the bringing to the conscious and the correct interpretation of these phenomena constitute the steps necessary to verify the statement so frequently made that the neurotic lives through with the analyst (brings to the analyst) in the course of treatment, in a wholly unconscious manner, experiences in his early life, and tends to identify the analyst with individuals in his early childhood with whom the patient was intimately associated; that the latter manifests feelings for the analyst identical with those felt for individuals in the past, in instances where the points of resemblance (identification) are of the most superficial or minor nature. These phenomena also demonstrated that their analysis is very vital for a convincing understanding and acceptance of the existence of infantile or unconscious mental processes, in so far as they still activate not only neurotic symptoms, but also general personal characteristics, dreams, slips of the tongue, etc. As I mentioned before, this phase of the treatment demands the best of the analyst, for the success of the treatment depends on the handling of the transference.

The resistances originating from the repressed material of the individual analyzed offer less difficulty after the resistances originating from the transference are dealt with adequately.

In handling the free associations given, for

instance, to a dream, the values of the different elements in the chain of associations must be determined by the analyst. Free associations to some part of a dream may be unlimited in number; it is the duty of the analyst to recognize the value and pertinence of the different elements in the free associations in their bearing on the emotional life of the patient. To do this accurately requires, naturally on the part of the analyst, a most intimate knowledge of the life history of the patient, and of his deep-seated or unconscious impulses. This phase of the treatment requires further on the part of the analyst a very retentive memory for details. For though the history of the patient, with great detail may have been recorded by the analyst in writing, yet this cannot be used during the analysis proper; for the entire attention of the analyst is required for the patient at the moment. A great mass of detail is carried in the memory of the analyst, and such parts thereof as have a bearing on what the patient is saying at the moment becomes conscious to the analyst.

As I just mentioned, to evaluate the different elements in the free associations requires on the part of the analyst a most intimate knowledge of the history of the patient, a knowledge of the deep-seated impulses, the instinctive impulses, the partial sexual impulses, the ego instincts, etc. Not that they are ever absent, or that their presence as such are to be demonstrated. Their early manifestation and their present-day activities are sought for. While no elements in the free associations are overlooked, yet after some progress in the treatment has been made, such associations are emphasized and called to the attention of the patient as appear to Freud to evidence the activity of infantile unconscious impulses or wishes. He seeks the significance of the deeper associations, but by no means overlooks the superficial.

In respect to dream interpretation, I might say that Freud does not vary from the generally accepted method. Namely if not spontaneously indicated by the patient, for the elucidation of the dream in question, the attention of the patient is directed to the rule that a dream originates in some thoughts or experience of the day preceding the dream, and he is requested, if possible, to find the origin of the dream, or more properly the dream incitor. From the free associations to the various dream elements, an attempt is made to seek the unconscious repressed wish or wishes, which have made use of the day remnants (thoughts) as a means of finding a disguised expression in the dream. Wherever inference from the free associations permits, deep-seated wishes are sought to be made conscious to the patient. An attempt is made to make evident

the repressed wishes in as concise a form as possible.

The question has frequently arisen as to what factors in the treatment are the important ones in bringing about a cure in psychoanalysis. Is it the bringing to the conscious knowledge of the individual, of the repressed, unconscious wishes that produces the benefit? Or does the resolution of the conflicts have the curative effect? Is it the ability to sublimate impulses previously inhibited from obtaining satisfactory outlet? It is difficult, if not impossible, to evaluate the rôle played by these different factors. They are all concerned, perhaps, to a varying degree. There is, however, one factor not enumerated above which I believe plays the most important rôle. It is this factor which brings a feeling of conviction as to the correctness of the interpretations, and as to the existence of unconscious mental processes. I refer to the living over by the patient in the course of the analysis, of situations, experiences, or phantasies, long past or even forgotten and recalled during the analysis. Freud has repeatedly mentioned that an intellectual acceptance of phenomena psychoanalytically demonstrated brings about no curative effect or deep-seated conviction. For this purpose they must be emotionally accepted. In the treatment the patient usually with lasting effect after the phenomena of the transference have been made conscious to him re-lives in a conscious way, experiences, actual or phantasiaed, with all the emotions present at the time, even though years may have elapsed. Anger, joy, envy, hate, love, etc., once more are experienced in connection with situations or persons in regard to whom they originally existed. All analysts have repeatedly observed this in patients. I have also. It was, however, a novel and convincing experience to be the subject myself.

A few words as to the rate of progress of the analysis. It is not at all steady, but quite irregular. A week or more may go by, with little or no profit, apparently. Then valuable data appear, and valuable deductions are made. There is then again a period of slack, and then some loose ends are gathered and united. Things touched upon perhaps some weeks before, not very clear at the time, now become more clear. Very little, usually no direct effort can be made to proceed along definite lines. As a rule the immediate work in hand depends on the material produced by the patient at the moment. Though recently what has been called by the analysts in Europe "active therapy" has been employed, yet I find that this addition is a minor detail, and of itself gives no hope that more direct means are at hand for obviating the great difficulty brought about by the almost complete reliance for the

rate of progress and of material handled on the productions given by the patient. No short cut to a cure has been found as yet.

I wish to mention briefly that in the employment of dream symbolism, Freud relies almost exclusively on the free associations of the patient for its interpretation. Only in very few instances does he lay any stress on the so-called generally accepted symbols, and in such cases also seeks corroboration for their interpretation on their close connection with and relation to the free associations given by the patient. While Freud recognizes that some symbols are universally interpreted in the same way, yet such symbols serve their purpose better for descriptive than for therapeutic purposes, except as I mentioned before when the patient's associations warrant a generally accepted interpretation. Freud at no time insists on the absolute correctness of his interpretation, but leaves it to the repeated recurrence of the material for confirmation or denial of the correctness of the interpretation. For in the therapeutic application of the psychoanalytic technique, only the truth or accuracy of the interpretation in relation to the individual is of value, and not the general applicability of the symbolism. The therapeutic aim in this sense is direct and immediate.

I will close by giving in brief the duty of the analyst in the course of a psychoanalytic treatment. Firstly, he must exercise great patience, a quality that Prof. Freud possesses in a great measure. He must not be hurried by the demands of the patient. He must feel a genuine interest in the work. To the emotional outbursts of the patients; to their exhibition of the various attitudes that become evident in the phenomena of the transference; to their immoralities and perversions, the analyst must take a strictly scientific attitude, if I may call it that. There must be a complete absence of the attitude of judge or moralist. Only one who has been well analyzed can take the proper attitude.

The active part of the duty of the analyst consists in what he has to tell to the patient. He must know what to tell the latter, and more important still, when to tell it. As a rule the analyst speaks little, and Freud is no exception to the rule. However, that which he has to say is clearly and concisely put, and properly timed. By the latter statement I mean that the analyst, after he has become well acquainted with many details of the patient's history, usually can see a little further ahead than the patient, while the latter is giving free associations. That is that the analyst knows more about the patient than the latter knows of himself. The analyst then tells the patient what he thinks the latter can comprehend or appreciate at its true value. Care is taken not

to interpret too far in advance of the patient's progress. Freud makes it a rule to encourage the patient to make his own interpretations, to work out his own difficulties, wherever possible, especially after the patient has made some progress.

The main points of interest have, I believe, been covered, though very briefly. I trust I have made myself understood, for I realize the difficulties under which I am laboring in reading such a technical paper before a non-psychoanalytical audience. I do hope that you will see the absolute necessity of an individual being analyzed by a competent analyst before he undertakes to treat the psychoneuroses by means of the psychoanalytic technique.

THE RELATION OF THE FLEXOR-ADDUCTOR FOOT DEFORMITY TO DISEASES OF THE NERVOUS SYSTEM.*

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THERE are a number of quite different diseases of the nervous system which are associated with deformities of the feet. The particular type of deformity which is the subject of this paper results from an overactivity of the intrinsic and extrinsic flexors of the foot and toes and the adductors of the foot.

If the intrinsic flexors of the foot are over-toned a simple pes cavus results. If to this, overtoning of the gastrocnemius and soleus group is added, equinus results. If the adductors are overactive varus results.

The diseases which give rise to deformities are divisible into three groups. The first includes a number of diseases which involve the central neurones. The more important are listed below. A second group is due to diseases of the peripheral neurones. Some of these are given below. The part they play in causing foot deformities will not be discussed in this paper. A third group is made up of *club-foot*.

A. *Functional Origin.*

1. Hysteria.

B. *Central Neurone Origin*

1. Infantile or congenital hemiplegia.
2. Infantile or congenital diplegia.
3. Adult hemiplegia.
4. Parkinsonian syndromes.
5. Epidemic encephalitis.
6. Other post-infectious and post-hemorrhagic striate syndromes.
7. Wilson's disease or progressive lenticular degeneration.
8. Dystonia lenticularis (dystonia musculorum deformans, torsion spasm, acquired double athetosis).

9. Lenticulo-rubro-cerebello-olivary degeneration.
10. Chronic non-familial chorea.
11. Friedreich's ataxia.

C. *Peripheral Neurone Origin.*

1. Epidemic poliomyelitis.
2. Progressive muscular atrophy.
3. Spina bifida.
4. Peripheral neuritis.
5. Hypertrophic interstitial neuritis.

D. *Unknown Origin.*

1. Congenital club-foot.

The deformity may be spastic or flaccid, depending upon the tone of the muscles involved. It is a combination of postural abnormality and of tone abnormality.

When spasticity is present, and contracture permanently deforms the feet, the original flexor-adductor position may be very greatly modified. Muscle and aponeurotic contracture sets the foot in extremely abnormal positions. When the spasticity is not very great the foot can be replaced in a fairly normal position, but when it is great this is impossible.

1. *Hemiplegia.*

Post-hemiplegic contracture produces any of the combinations of the equinus, cavus and varus positions and, in addition, flexion of the toes. There are all degrees of severity. It is common to find flexion of the toes and a slight equinus as the only evidence of overtoning.

2. *Congenital diplegia.*

In this disease flexor-adductor deformities are almost the rule. They may develop late. The term club-foot is applied to these deformities in many cases. It is often impossible to distinguish the club-foot of diplegia from the simple type. It is very probably true that congenital club-foot is often the only manifestation of a disease of the nervous system which, were it more extensive, would cause diplegia. It is of interest that the deformity occurs in both the pyramidal and the extrapyramidal types of the disease.

3. *Parkinsonian syndromes.*

It is not usual to find flexor-adductor foot deformities in this disease. However, they occasionally occur. Morphologically they do not differ from those of hemiplegia.

4. *Epidemic encephalitis.*

In the Parkinsonian varieties of this disease it is quite common to find various forms of the deformity under discussion. It may be spastic or flaccid.

5. *Other forms of post-infectious and post-hemorrhagic striate diseases.*

These form a heterogeneous group in which flexor-adductor deformities are also found. The following case report illustrates one variety:

The patient, a woman fifty-seven years old, suddenly went into coma about eight weeks be-

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fore admission to the hospital. She remained in this condition for five days. On recovering consciousness she was unable to walk, due to extreme rigidity of the legs. A little under two months after that, her condition having gotten progressively worse, she was admitted to the hospital. At this time she was incontinent of urine, had some difficulty in speech, and was unable to walk. Examination gave evidence of severe arterial thickening, both on ophthalmoscopic examination and palpation of the arteries. She showed some mental impairment. There was extreme rigidity of all four extremities and a cog-wheel sensation in both arms. There were coarse tremors of both arms and hands. The finger-nose test showed marked tremor. The tongue could not be protruded and speech was thick. Facial movements were impaired in their extent, but showed no definite paralysis. The deep reflexes were all retained with the exception of the Achilles jerks, which could not be elicited because of the extreme rigidity. There was a doubtful Babinski on the left. The patient complained of severe pain in the legs and feet (thalamic origin). The feet were *rigidly held* in a position of *equino-varus*, which was associated with *abnormal concavity of the instep* (pes cavus). The patient's feet resembled exactly a plaster cast of a case of congenital club-foot in an adult which I had seen about two weeks before.

6. *Wilson's disease—progressive lenticular degeneration.*

Contractures are part of this disease. In the feet they are of the flexor-adductor variety. They are spastic in character, due to contracture. Often the foot is very seriously deformed and the mechanism at work is consequently somewhat obscured.

7. *Dystonia lenticularis (dystonia musculorum deformans, tortion spasm, acquired double athetosis).*

This disease also showed the same type of deformities. Spiller, describing acquired double athetosis, says: "The lower limbs were extremely spastic and presented athetoid movements, the right foot was strongly inverted and the right great toe extended in the movements, while the left foot was placed so strongly in the position of equinus that the toes were more posterior than the heel." Tortion spasm shows the same. Hunt, in a description of this disease, says: "The foot is held in a position of extreme plantar flexion, including the toes, producing a conspicuous concavity of the plantar surface" (the semilunar foot). Taylor, in his second case of dystonia lenticularis, says, "both feet showed talipes equinus."

8. The *lenticulo-rubro-cerebelle-olivary degeneration*, described by Rhein, also had the type

of deformity under discussion. Rhein, speaking of the left foot in this extrapyramidal disease, says that it "was held in a position of talipes equinus."

9. *Chronic chorea in children.*

In a few cases of this group I have noticed a moderate degree of flaccid pes cavus. It is interesting in this connection that Spitzzy, the Viennese orthopedist, has seen three cases of chorea with pes cavus. Chorea, as has been abundantly shown, affects the striate body, though this is not the only lesion.

10. *In hysteria*, a common deformity of the foot when contracted, is due to a cavus equinus position. The toes are often much flexed. If we regard the various manifestations of hysteria as evidence of psychological block at various physiological levels it is readily seen that the block in hysterical flexor-adductor foot deformities must be at the level capable of producing this. If we compare the morphology of the deformity to those due to lenticular and pyramidal diseases we must begin to wonder whether it be not true that either are organic or a functional blocking of voluntary power may produce deformity by allowing lower centres uncontrolled activity.

11. *Friedreich's ataxia*, whose pathological lesion is not near that of capsular hemiplegia or the various striate diseases, such as Wilson's disease, dystonia lenticularis and Parkinson's disease, shows a pes cavus, often cavus-equinus. It would seem that the same physiological system of fibres is affected, but in a different part of the nervous system. For the present, nothing can be gained by a lengthy discussion of the matter. Clinically, the foot in this condition is often indistinguishable from those of some of the diseases mentioned above.

12. *Congenital club-foot.*

It is apparent that some forms of this disease must be of nervous origin. The frequency of their association with congenital hemiplegia and congenital diplegia, the morphology identical to that seen in the striate types of disease, the basic identity of action of the muscles, makes it obvious that a common central origin exists. That there are many cases associated with diseases not either pyramidal or extrapyramidal is clear from their occurrence in spina bifida, for example.

In this discussion, essentially clinical, an attempt has been made to show that in a great variety of diseases of the central nervous system, an almost identical foot deformity occurs. With the exception of Friedreich's ataxia, hysteria and club-foot, the pathological basis is either destruction of the pyramidal tract or involvement of the next lower centres—those of the striate body. For the present an interpretation of the causes at work, of the integrations of the nervous system at fault, does not seem possible.

HISTORY OF THE DISPENSARY LAW.*

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A LEARNED economist wisely stated that all civilized communities have enacted laws having for their object the enforcement of certain restraints upon the appetites, and that the benevolent impulses of our nature which move us to give relief to those who may appear to be in distress may often be the cause which creates a new lot of beggars. He said that these impulses may lead to injury, when not guided by reason and *should* be restrained as well as the appetites.

The Dispensary Law, which requires all dispensaries to obtain a license from the State Board of Charities, was enacted to restrain dispensaries from encouraging the abuse of medical charity, and the first penalty in the law was enacted to be applied to this form of abuse. The second penalty in the law was designed to act as a deterrent to the fraud that was easily practiced upon this form of charity.

When the first dispensary bill was introduced in the legislature in 1897 the committees representing the medical societies found the press and the public alive to the question at issue, and ready to actively co-operate to secure the enactment of the dispensary law. As evidence of such co-operation, let a few of the leading newspapers, published in 1897, be quoted:

New York *Herald*, June 19, 1897. An article describing a visit of a reporter to one of the well-equipped dispensaries: "It is difficult to resist the conclusion that *not* more than one in twenty-five—the pen is tempted to write *one* in fifty—of the applicants treated at the clinic yesterday afternoon was a legitimate patient." Making allowance for the reporter's enthusiasm the proportion would be still very high.

Mail and Express, May 20, 1897: "The indiscriminate medical charity is but one phase of the morbid philanthropy which seeks to be doing something which appears to be good—a philanthropy which has done much to degrade men."

Evening Post. An article states: "That the free dispensaries, which are such worthy charities in theory, have through several causes become dangerous menaces to society in general; they absolutely encourage begging and dependence on charity."

The *Tribune*: "The financiering of many medical charities gives the impression that it is proper for the citizen to receive something for nothing."

New York *Sun*, May 26, 1897, editorial: "Many hospitals and dispensaries intended for the relief of the poor are supported by public money and by private gifts which should not be devoted to those who can afford to pay for medical advice. To permit knowingly such an abuse

is entirely indefensible and is in the nature of a breach of trust, and it is besides an encouragement to fraud."

The comments of the press were a natural reaction to the abuse or improper use of dispensaries prior to the enactment of the law. At that time a dispensary could be established at any place, such as a back room of a drug store, in a tenement house, or in a room or building having no running water. William B. Buck, former Superintendent of Inspection, State Board of Charities, states: "There were rival dispensaries on opposite corners, and before the dispensary law was passed a policy of *laissez-faire* on the part of the State toward dispensaries in marked contrast to its attitude toward other charities, which resulted in the establishment of these institutions, some of them for insufficient or improper reasons."

This is from the *Mail and Express* of February 25, 1898: "Not long since a dispensary, located in the Borough of Manhattan, applied to the Charity Organization Society to have all the cases that should apply during some certain month investigated. This is the result of investigating all cases that reside on Manhattan Island, or claim to do so: Total number applying, 520. False addresses, 131; able to pay something, 39; fully able to pay, 106=276; unable to pay, 231; refused information, 13.

"Some dispensary managers, who have estimated the percentage of unworthy applicants, have put the figures at 3%. This table, it will be found, shows 53% without, including those refusing information. These investigations have cost twenty cents each." Those who were in favor of a dispensary law showed the need of State supervision in order to improve the conditions under which the patients received medical treatment, and to correct the numerous abuses, many of which have been referred to. The dispensaries appealed to the charitable public on the bases of work done. It was a common practice to mix or confuse patients and cases—one patient might be four cases in an afternoon, and vice versa. The proponents of the dispensary law called attention to the need of a system of bookkeeping, which would include a proper record of all patients treated, instead of the inaccurate, incomplete and worthless records which showed that about 50% of the population of New York City received dispensary treatment.

The opposition to the enactment of the law was voiced by the dispensary managers and representatives of the teaching bodies. James G. Cannon, Vice-President of the Fourth National Bank and President of the Good Samaritan Dispensary, was their chief spokesman before the Joint Legislative Committee. (See *Evening Post*, February 16, 1898.) "Now, gentlemen, this legislation the dispensaries object to. They object to the grant of power, such as is seen in no other instance, and ought not to be given in this case. But the medical gentlemen say there are numerous professions requiring licenses;

* Read at the Annual Meeting of the Second District Branch of the Medical Society of the State of New York at Brooklyn, December 9, 1921.

why not apply this to the case of dispensaries? Gentlemen, when an individual is refused a license he can turn his talents and employ his capital in some other direction and pursue some other trade or calling. But a dispensary is a chartered institution which can do absolutely nothing but dispense medicine and medical relief. When you refuse it a license you confiscate its property. Gentlemen, where does the demand for this legislation come from? Those who advocate it are members of one profession—the medical profession—they come from the counties of New York and Kings. They do not represent all the medical profession of those counties, much less the profession of the State. What was it that inspired this legislation? I don't propose to answer that question. I prefer to have Dr. Charles Phelps, of New York City, reply. I quote from his address as president of the New York State Medical Association: "There seems sufficient reason," he said, "for believing that the average income of the medical man has been seriously diminished. It is true that at the present time a certain number of specialists, surgeons and consulting physicians in large cities receive even extravagant compensation, but a majority of the members of the profession, who compose its rank and file, family physicians, and general practitioners, have suffered a grievous loss. This loss has been especially felt in this city, and the profound impression it has produced is demonstrated by the organized effort which was made during the past winter to obtain relief by legislative enactment. Actuated by a belief that abuses of medical charges are in great part responsible for the financial depression in professional business, medical societies were enlisted in an effort to restrict the charity of hospitals and dispensaries to those individuals who are its proper recipients." There is a pretty plain statement of the underlying motive that inspires this legislation—the desire of the medical profession to increase their incomes. But why, if there are too many members don't they decrease their numbers? Why don't they make it more difficult to enter their profession, and thus limit their number, rather than deprive the public of what they concede to be a cheaper administration of medicine and medical attention than they will offer if the matter is left with them? The object of this dispensary bill, so far as we can ascertain it, is to shut the doors of such institutions to those persons, but not a word is said as to limiting the charges the doctors will make these people when the doors of these institutions are closed. Are you ready to pass such a bill? Do you believe it is in the interest of the public? Legislatures are endeavoring to secure to the people at large equal benefits in the necessities of life. This is a bill which has for its object the restriction of the furnishing of the greatest necessities that one could ask for. It is a bill to reduce, so to speak, the capacity of the people at large to receive medical treatment at moderate

charges, and to permit the physicians to increase their emoluments. If this act is to go through, by all means, change its title. Write it plainly: 'An Act to prevent medical treatment at moderate rates and to permit unlimited charges by physicians.' In a word, gentlemen, make it an act to create a medical trust."

Governor Roosevelt cheerfully signed the Dispensary Bill, which made it a law on April 18, 1899, and kindly presented the pen to the writer.

There is a seeming contradiction in the law to which I wish to call your attention. After Governor Black vetoed the Dispensary Bill of 1898 he stated the reason for the veto, in an interview granted for that purpose. He said every person had a right to do as much charity as he pleased, and he would sign no bill that would interfere with a doctor's right to establish a dispensary as long as he used his own money in maintaining it. But if he used any money other than his own in maintaining such dispensary then he could be properly subjected to State supervision. The following was added to the first section of the law to meet the Governor's views: "However that the moneys used by and for the purposes of said dispensary shall be devised wholly or in part from trust funds, public moneys, or sources other than the individuals constituting said dispensary, and the persons actually engaged in the distribution of charities of said dispensary. Governor Black made no objection to the last part of section 294, which seemed to me to invalidate the words quoted from section 290 which permits a person to establish a dispensary, provided he uses his own money. But what privilege is gained when section 294 deprives the individual of the use of the word dispensary or any of its synonyms, as follows: "Nor shall any person, corporation, institution, society, association, or agent thereof, except a duly licensed dispensary, display or cause to be displayed a sign or other thing which could directly or indirectly or by suggestion indicate the existence of the equivalent in purpose and effect of a dispensary"?"

There was a doctor who displayed a sign, "Clinic," near the basement door of his residence, who removed it on receiving notice from the State Board of Charities that the Attorney General had given an opinion that according to the section of the dispensary law, above quoted, it was a violation of the law to use the word "clinic" on a sign which could be directly, indirectly or by suggestion indicate the existence of the equivalent in purpose and effect of a dispensary. Knowing the intention of the section which exempts the doctor using his own money for the purpose of the dispensary, I doubt if that opinion of the Attorney General would hold in court. As to the meaning and practical application of the law we are in agreement with the State Board of Charities, as expressed in their "Rules and regulations in accordance with which dispensaries shall furnish, and applicants obtain,

medical or surgical relief, advice or treatment, medicine or apparatus. * * *

These Rules and Regulations are an accurate interpretation of the spirit and the words of the Dispensary Law. And any change in the rules to provide for wide-open pay clinics or dispensaries would be little less than nullification of the intent and purpose of the Dispensary Law. The first penalty in the law was intended to apply to the dispensary which violated the law or the rules established by the State Board of Charities. It reads:

"Any person who willfully violates any of the provisions of this article, or any of the rules and regulations made and published under the authority of this article, shall be guilty of a misdemeanor, and on conviction thereof, shall be punished by a fine of not less than ten dollars and not more than two hundred and fifty dollars."

The second penalty in the law applies to the patient who makes false statements as to his ability to pay for the medical service. It reads:

"Any person who obtains medical or surgical treatment on false representations from any dispensary licensed under the provisions of this article, shall be guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not less than ten dollars and not more than two hundred and fifty dollars."

The question of defining a poor person was passed to the State Board of Charities because no one could phrase a satisfactory definition to be embodied in the law. Although before the committees of the Legislature the poor person was the theme. The chairman of the Joint Committee declared that:

"The principles involved in this bill are perfectly clear. This bill is designed to restore to the poor people an absolute monopoly of what belongs to them alone by virtue of the prime purpose for which all dispensaries are designed, and prevent any further encroachment upon the rights of the poor by those who have no right to so encroach."

"Every dispensary is supported by private donations and bequests or by public appropriations, or by both, solely for the benefit of the poor, and the use of those institutions by any but the poor is an abuse of medical charity, and a fraud upon the institution, or else a misapplication by the institution of private funds held in trust by it for a specific purpose, or public funds appropriated for a specific purpose, or both."

"This bill is designed to relieve the poor of the annoyance and inconvenience constantly complained of on account of being compelled to wait in these dispensaries until the well-to-do patrons are cared for. That condition of affairs in our dispensaries is a source of constant complaint."

The Joint Committee being unable to frame a satisfactory definition of a poor person decided to give special attention to the defining of a dis-

pensary, especially that part indicated below in italics:

"Sec. 290. Definition of dispensary.—For the purposes of this article, a 'dispensary' is declared to be any person, corporation, institution, association, or agent, whose purpose it is, either independently or in connection with any other purpose, *to furnish, at any place or places, to persons non-resident therein, either gratuitously or for a compensation determined without reference to the value of the thing furnished, medical or surgical advice or treatment, medicine or apparatus.*"

The Joint Committee placed its faith in the State Board of Charities, believing the Board would be guided by the definition in framing its rules and regulations.

The following are in harmony with the law:

(b) A pass card shall be issued to every applicant who is admitted for treatment, which card shall be numbered to correspond with the number on the admission record card, and on one side of which shall be printed the usual information in regard to attendance upon the class to which he or she is assigned, and on the other side the penalty for false representation as follows:

"Penalty for False Representations.

"(Section 296, Chapter 55, Consolidated Laws),

"Any person who obtains medical or surgical treatment on false representations from any dispensary licensed under the provisions of this article, shall be guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not less than ten dollars and not more than two hundred and fifty dollars."

"(Imprisonment until fine be paid may be imposed. Code Crim. Pro., § 718.)

"(c) A diagnosis and history record, which shall be filled out by the physician or dentist of the clinic to which the patient is assigned, or under his direction, and which shall contain the name, the record number to correspond with the admission record card, the date, the diagnosis, and the treatment or treatments administered, and also the date of each subsequent visit during the year and the treatments administered, and on the discharge of the patient the results of treatments so far as they can be ascertained."

The rule governing the admission of patients to a dispensary shows wise judgment in the interpretation of the law:

"III. The Admission of Applicants.

"All persons applying for advice or treatment at the dispensary shall be interviewed by the registrar or his assistant to determine the question of their admission, and the disposition of each case shall be governed by the following:

"(a) All emergency cases shall be admitted and receive prompt treatment and care.

"(b) Applicants belonging in the following

classes may be admitted in the discretion of the registrar:

"1. Patients who are received in dispensaries connected with medical colleges and are selected for use in clinical instruction.

"2. Patients admitted for the treatment of communicable diseases.

"Other applicants shall be questioned as to their ability to pay a physician for his services, and there shall be admitted as patients only those who are in the opinion of the registrar unable to pay a physician or dentist for the treatment required. When necessary for the proper determination of the case, the registrar shall cause an investigation to be made into the financial status of the applicant, and the result of such investigation shall be filed among the permanent records of the dispensary. A record shall be kept of the names and addresses of patients refused treatment under the provisions of this rule.

"IV. Records.

"The records of each dispensary shall include at least the following:

"(a) An admission record card for each applicant received for the first time during any State fiscal year (beginning July 1), which card shall be filed alphabetically and be substantially in the following form:

"Name..... No.....
 Address
 Sex..... Occupation..... Age.....
 Are you able to pay for the services of a physician?
 Remarks:
 Assigned to..... Clinic
 Dr.
 Date.....
 (Name of Dispensary)."

Of all the rules the one calling for the use of admission cards designed as a record and to restrict the dispensary service to the poor is neglected. Some of the managers wish to make a showing of large number of patients treated, others say it is impossible to retain experienced specialists unless the dispensary has large classes; some are influenced by the increased revenue resulting from the fees received from the applicants, and some of the registrars are incompetent, while others are unwilling to make an investigation. The Dispensary Law, as administered by the State Board of Charities, has accomplished more good than I have time or space to record. The path has been made difficult by the growing desire for cases by the teaching institutions, by dispensaries being connected with hospitals and acting as feeders for them, and by encouraging pay patients to help make the dispensary self-supporting. The proposed changes in the law affecting the definition of a dispensary will permit State wide pay-clinics to be licensed by the State Board of Charities.

Deaths

BANER, WILLIAM L., New York City; College of Physicians and Surgeons of New York, 1885; Fellow American Medical Association; Member State Society; Academy of Medicine; Visiting Physician St. Vincent's Hospital. Died December 9, 1921.

BOGUE, EDWARD AUGUSTUS, New York City; Castleton, Vt., 1857; Fellow American Medical Association; Member State Society; Academy of Medicine. Died November 22, 1921.

BUCK, FRANCIS D., New York City; College of Physicians and Surgeons of New York, 1876; Fellow American Medical Association; Member State Society. Died December 4, 1921.

BURGETT, WILLIAM W., Fultonham; New York University, 1882; Member State Society. Died November 9, 1921.

CONSTABLE, HERBERT LEE, New York City; New York University, 1889. Member State Society. Died December 18, 1921.

COX, TRUMAN H., Lee Center; Cincinnati, 1875; Member State Society. Died December 2, 1921.

CRAIG, THOMAS C., Brooklyn; University of Pennsylvania, 1880. Member State Society. Died December 13, 1921.

GALLAGHER, WILLIAM C., Slaterville Springs, Geneva, 1863; Member State Society. Died December 24, 1921.

GRISWOLD, VERNON MARK, Fredonia; University of Buffalo, 1880; Fellow American Medical Association; Member State Society. Died November 26, 1921.

HASWELL, EDDY STEARNS, Albany; Albany Medical College, 1909; Fellow American Medical Association; Member State Society. Died November 19, 1921.

LIPMAN, JOSEPH, New York City; Long Island College Hospital, 1901; Member State Society. Died December 18, 1921.

OLLIPHANT, SAMUEL RUTHERFORD, Mount Vernon; Tulane University, 1878; Member State Society; New York Academy of Medicine. Died December 26, 1921.

PATERSON, ROBERT CHILDS, Saranac Lake; McGill University, 1902; Fellow American Medical Association; National Tuberculosis Society; Member State Society. Died December 24, 1921.

PERRY, CHARLES H., Oneida; Dartmouth, 1866; Member State Society. Died December 16, 1921.

POHL, GUSTAV ADOLPH, Buffalo; University of Buffalo, 1886. Member State Society. Died December, 1921.

PRIME, WILLIAM REID, New York City; New York University, 1879; Fellow American Medical Association; Member State Society. Died December 5, 1921.

RANKIN, JOHN, Brooklyn; Long Island College Hospital, 1882; Fellow American Medical Association; Member State Society; Consulting Physician Caledonian Hospital. Died December 21, 1921.

SCHENCK, GARRETT KOUWENHOVEN WILLIAMSON, Far Rockaway; College of Physicians and Surgeons of New York, 1901; Member State Society. Died December 6, 1921.

TORREY, EDWARD, Olean; College of Physicians and Surgeons of New York, 1869; Member State Society. Died December 8, 1921.

VAN PEYMA, PETER W., Buffalo; Buffalo Medical College, 1872; Member State Society; Buffalo Academy of Medicine. Died November 30, 1921.

VINCENT, WESLEY GROVE, New York City; Yale, 1900; Fellow American Medical Association; Fellow American College of Surgeons; Member State Society; Academy of Medicine; Assistant Surgeon Post-Graduate Hospital. Died January 3, 1922.

WALKER, LE GRAND ALLEN, Rochester; College of Physicians and Surgeons of New York, 1891; Fellow American Medical Association; Member State Society; Academy of Medicine. Died November 8, 1921.

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ASSOCIATION OF RESERVE OFFICERS OF THE U. S. PUBLIC HEALTH SERVICE

On October 20, last, this Association was organized for the purposes stated in the Constitution, as follows:

To support and encourage all efforts toward increasing the efficiency, activities and standing of the U. S. Public Health Service, and the members of the Officers Reserve Corps thereof.

To develop good fellowship, co-operation and understanding between the U. S. Public Health Service and all agencies, professional, social and governmental, having to do with the care, treatment and rehabilitation of the veterans of the World War, and all other beneficiaries of the U. S. Public Health Service, and of all other activities of the U. S. Public Health Service.

To consider and support all legislation, national or state, pertaining to the betterment of the disabled ex-service man.

To support and encourage all legislation pertaining to the extension of rules and regulations governing the public health.

To support and offer assistance to the Surgeon General of the U. S. Public Health Service, and the Director of the U. S. Veterans' Bureau and their associates, in any and all of the perplexing problems which pertain to their official duties.

To take an active interest in all legislative matters that may affect all professional and scientific classes of reputable and ethical physicians and dentists in the United States.

To further the interests of scientific medicine and dentistry, especially those interests pertaining to the practical problems surrounding the general question of public health.

BRITISH NATIONAL COUNCIL FOR COMBATING VENEREAL DISEASES

This organization in November last began the publication of a journal, *Health and Empire*. The first issue shows evidence of the widespread and efficient efforts being made and a foreword by the President, Lord Corell, C. B. E., M. C., as follows:

The problem of Venereal Disease is one of the gravest which confronts the civilized world, though a great deal more information is finding its way into the press and to the public now than was the case even a very few years ago.

Much of this information is incomplete and too often cast in a highly controversial form. Furthermore, the problem is one which must be looked at from the widest possible point of view. It cannot be regarded locally or even as a matter affecting a single nation. Just as it was shown in the war that the whole of industry was now such a closely knit organism that it was impossible to affect any one part of it without also affecting other and, at first sight, unrelated parts, so also, with the means now available throughout the world of rapid intercommunication it is abundantly established that to deal satisfactorily with such diseases as these, remedial measures, as well as information, must be based upon an international conception. It will, for example, be perfectly obvious that even were it possible entirely to eradicate these diseases in any one country, such eradication would have but a temporary effect if in a neighboring country these diseases were rife and allowed to overflow the boundaries of that country.

The Provisional Committee of the Health Section of the League of Nations which has just been set up is a definite recognition of the above truths. For these reasons and in order also to enable Branches of the National Council both at Home and Overseas, as well as all those interested in the campaign against Venereal Disease to be kept fully informed of one another's activities, it has been decided experimentally to start this "Journal," and it is my earnest hope that it will receive such support as will enable it to play a valuable part in concentrating activity and formulating public opinion in the vital campaign against these terrible scourges.

REVISION OF CONSTITUTION AND BY-LAWS

By direction of the Council at the December meeting, the proposed revision of the Constitution and By-Laws of the Medical Society of the State of New York is published in this issue.

The members of the Society are urgently requested to consider this proposed new draft and to communicate objections or additions to the Executive Committee of the Council in order that the matter may be presented clearly and expeditiously to the House of Delegates.

All propositions received will be tabulated in proper order and suitably presented for consideration.

MEDICAL PUBLICITY

At the last annual meeting of the American Medical Association, the Speaker of the House of Delegates, the late Dwight H. Murray of Syracuse, made a strong plea for impersonal medical publicity and the President of the Association also spoke in favor of it. Proper medical publicity would produce a better understanding of the physician by the people for their mutual benefit. Throughout the medical press of the world evidences of a demand for such publicity are found without a really good workable scheme to bring it about. In this connection the following extract from an article in the New York World by Heywood Broun may be of interest.

"As the son of one doctor, brother of another, cousin of another, friend of many, acquaintance of more and patient of several," writes Don Clarke, "I am extending to you my best wishes for a long and healthy life. You earned it by your piece in this morning's paper.

"You certainly rang the bell. I hope somebody was home at the moment.

"Old Dr. Professional Etiquette is the curse of the profession he dominates. He would be a fine old gentleman if he hadn't been doped by his colleagues until he has become more like his arch enemy, Old Dr. Professional Jealousy, than few—if any—of the pill distributors will admit.

"You may not know it, but it is a fact that if you were being fatally mistreated by one doctor no fellow practitioner would consider it any of his affair to interfere. You could die. And that would make everything professional and nice.

"As a newspaper reporter I came in personal contact with instances where misinformation was

spread broadcast in newspapers on medical subjects because of doctors' refusal to answer questions put by newspaper reporters.

* * * * *

"It is a queer thing, but when Dr. Friedmann came to this country several years ago with his alleged cure for tuberculosis the leaders of the medical profession in New York would tell newspaper men 'in confidence' that Dr. Friedmann's cure wasn't a cure at all. I recall that the late Dr. Abraham Jacobi, than whom no finer gentleman, scholar and medical man ever lived, told me personally that he and his colleagues had investigated Dr. Friedmann and his claims and found they were the bunk. Could I print it? I could not. Dr. Jacobi took the stand that professional etiquette prevented him from telling the truth about Dr. Friedmann—and Dr. Friedmann, according to Dr. Jacobi, was raising false and terrible hopes in the minds of those afflicted with tuberculosis.

* * * * *

"It is a fortunate thing that the heart of the medical profession is sound. It numbers in its ranks some of the noblest men that ever lived. It's an outrageous, damned shame that the real, honest-to-God doctors can't be educated to publicity—that they can't be taught that there is a vast difference between self-advertising and laying their cards on the table when the publicity comes unsought to them.

"Some of the greatest members of the profession in New York do understand. They have learned through the fair play they have been given in the newspapers. As soon as all doctors learn, there will be a whole lot less medical hokum in the news and a heap less of misinformation circulated about cancer 'cures' and tuberculosis 'cures,' and that sort of thing.

"The time has come when doctors must realize that the newspapers are going to carry articles about them and their work whether they like it or not. The time has come when they should cooperate to see that newspaper reporters get accurate medical information. Personally I think the medical associations should be the clearing houses for all such information."

THE PRESENT SITUATION WITH REGARD TO NARCOTIC ADDICTION IN THE U. S.

ROGER G. PERKINS, M. D.*

Although there has of late years been an immense amount of publicity on this subject, I believe that there is an undue amount of smoke in comparison with the size of the actual blaze. Analysis of statements and statistics leads me to feel that the whole proposition is comparatively simple and can be well expressed in a series of syllogisms, somewhat as follows:

I.

1. An addict is a person who habitually takes doses of narcotics in amounts toxic to the non-addict, and who suffers withdrawal symptoms when deprived of the drug.

2. Addicts are developed through curiosity, through bad company (much the same thing) and through medical treatment.

3. There are three sources of drug supply for addicts: prescriptions of physicians and purchase from peddlers, together with specially exempted compounds, such as paregoric, which are readily accessible.

* Summary developed by the writer in the course of preparation of the report on Narcotic Addiction for the American Public Health Association in 1921, as a basis of discussion for the Committee, and in no way an official document.

4. The Harrison Law and interpretations, or any other law and interpretations can effectually control and record only the legitimate traffic.

5. Restrictions intended to control illegitimate traffic, or smuggling, can only result in increased prices and consequently greater profit to the smugglers.

6. The only method of control of the underground traffic is to eliminate the supply.

7. The only way to eliminate the supply is through prevention of sales to irresponsible persons, and the only way to do this is to get an agreement by the governments holding the monopolies that they will not sell save to persons whose disposition of the supplies can be recorded and controlled.

8. It is therefore quite futile to expect material reduction of the underworld trade at present.

II.

1. Addicts either have an associated condition which is a contra-indication to withdrawal or they do not.

2. Those who have such a condition should be kept comfortable regardless of objections to addiction, or to their social status.

3. Those who do not have such a condition are either defectives or not defectives.

4. Defectives will not co-operate in attempts at cure and must be forcibly dealt with if at all.

5. The main "contagion" of addiction is through defectives and criminals.

6. Non-defectives tend to concealment of their addiction and are therefore less likely to spread the habit.

7. The present number of defectives and criminal addicts is probably greater than that of the other group.

8. It is at least possible to consider different methods of treatment for the two groups.

III.

1. Addicts as such are suffering from a definite disease or they are not.

2. Opinions on this subject vary, both at home and abroad.

3. Scientific research abroad—there is little published in America—voices the opinion that addiction is a disease and attempts to show its characteristics.

4. The work presented, while very suggestive, requires further confirmation but cannot be rejected without attempts at such confirmation.

IV.

1. The present laws and rulings, while nominally of a revenue character, are intended to reduce addiction by making it harder to get the drugs.

2. The latitude given the officials in charge of administration of the Harrison Law has led to considerable variation in the interpretations.

3. The law acts in establishing a form of registration and record which admits of following the distribution of the drug from wholesaler to consumer, save in a limited number of exceptions.

4. The point of greatest danger as regards possible avoidance of the intention of the law is the prescription of the physician.

5. It is claimed that in New York only a small fraction of one per cent of the physicians are involved in this avoidance.

6. The peddling trade, being extra-legal from the beginning, need not be considered here.

On the basis of these syllogisms, which I think cover the fundamentals, one can base further discussions, even if some of the original items be not accepted.

V.

1. There is no dispute as to the status of the degenerate and criminal addict, who must be separated from the drug by force, and prevented from obtaining a new supply.

2. There is no dispute as to the status of addicts with conditions agreed to contra-indicate withdrawal.

3. The discussion centers about two points:

(a) The character of the treatment of all cases, but more especially those not in the criminal or degenerate class.

(b) The interpretations of the phrase "conditions contra-indicating withdrawal."

4. The *current* headings of the types of treatment are "ambulatory" and "institutional" but these apparently simple terms are variously interpreted by various persons.

5. "Ambulatory" in its strict sense, appears usually to mean that persons able to be about and carry on their daily routine more or less successfully are given bulk dosage to cover a given period, with or without the service of a personal attendant or guard.

6. "Institutional" in its strict sense, means the hospitalization under close restrictions, and the carrying out of definite courses of treatment, until the patient is freed from the craving.

7. Ambulatory treatment can be carried out either by private physicians who prescribe a number of doses at one time, these doses to be taken at the will of the patient, or through a dispensary which acts in the same manner.

8. Various dispensaries have been opened in New York, New Orleans, Shreveport, Cleveland, and other places, and nearly all have been closed. The reason for closing has been usually stated as the abuse of the facilities in one way or another.

It seems clear that a dispensary which, with no more individual attention than the average institution of that kind gives, dispenses the drug in multiple doses, will cater not only to those who should have the drug without question, but to the ordinary criminal and degenerate addict.

On the other hand, it would appear from the reports of Dr. Butler of Shreveport, where the dispensary is still functioning, that it is possible, at least in a community of that size, to meet the problem successfully and to avoid the abuses. Whether this is possible in a large population center, with a number of floaters, is a separate and important question.

Where the community is not too large, and treatment is confined to actual residents, it may be possible to select cases so as to avoid danger.

9. The relation of the practising physician to the question has caused perhaps the most excitement. It is obvious that when a physician is found supplying addicts without inquiry into each case, and is making no attempt at cure, he is acting in opposition to the spirit and letter of the law. On the other hand we find the argument that a physician has the right to treat cases in his own way, and that it may not be possible to take certain patients off the drug at once, without a more or less long continued preparation. This argument claims that any arbitrary rules as to the speed of reduction are a trespass on professional rights.

10. Hospitalization is a failure if it confines itself to a brief routine treatment, with no provisions for the long after-treatment emphasized as necessary by European writers and by our own. Absence of this results in 90 per cent relapses, within a short time.

There is at present no financial provision for such after-treatment, and there are few places outside of jails and correctional institutions in which the addict without funds may obtain routine treatment. Moreover, even in the pay sanatoria the course of treatment is brief.

POSSIBLE REMEDIES.

1. As noted earlier, there is no hope of checking the underground traffic without international agreement.

2. The ground laws show the disposition of all drugs legitimately obtained by the physician.

3. If the smuggled supply was unobtainable, the only source for the underworld supply would be thefts from legitimately obtained supplies.

4. It is generally agreed that this would be a small

matter and in no way competent to supply the peddling trade.

5. The percentage of dispensers of legitimately obtained drugs, who cater primarily to addicts, is small and easily ascertained.

There are really two problems, one for the future, one for the immediate present.

Granting the removal of the underground trade through national agreement, and adding to this the time-worn factor of education of the medical practitioner to prevent the type of addiction for which he has been responsible, it is clear that the addiction of the future generations, as far as opium and its derivatives are concerned, would not be serious.

For the present, however, the problem is more complex. We cannot get international action all at once. We cannot develop adequate hospital facilities all at once, and if previous contentions are accepted, mere hospitalization without convalescent care would be an unwarranted expense.

The mere forbidding of an action without removal of the means to carry out the action has never been more than temporarily successful and it is well known that the best of reforms occur in waves, with long intervals between the waves.

In reality how serious is the condition and how much of a menace is it? In the earlier propaganda, the percentage of our population who were addicts was placed as high as four per cent. Now it is claimed as affecting one-fourth of one per cent, or less, a notable drop, and one not claimed as the result of the execution of the law.

The great majority of the addicts who may be considered as a public menace, are in the large cities, and according to such statistics as we have available, are for the most part in the criminal classes. Inasmuch as addicts of this type are resistant to all treatment save by force, the only way they can be cared for is in correctional institutions in which they may be retained till detoxicated. At least this portion then may be considered as a police problem, rather than as a public health problem.

If this is true, the fact that the reason for relapse is the accessibility of the drugs through peddlers, brings us back to the same point in the circle, namely, the checking of smuggling and its checking by the only possible means, removal of the foreign source of supply.

If the peddlers' supply was limited to thefts from registered stocks, it would certainly be insufficient to spread addiction, even if it was adequate for the present group. The problem would be self-limiting, far more than would even adequate hospitalization and after-cure.

In summation, it seems to me that the solution for the future lies primarily in the international limitation of the sale of opium products to registered and responsible persons and secondarily in the education of physicians and the public as to the development of addiction.

The solution for the present is far more difficult. The supply is accessible, there is no adequate hospitalization in sight, the educational side is incomplete. There is little disagreement among reputable persons as to the disposition of most of the cases. The main argument concerns the interpretation of the proper control and treatment in a limited number of individual cases. There are, it seems to me, two main points of difference. *First*, can the physician be trusted to play fair with the law? *Second*, is the number of such cases and their relation to society a menace?

Decisions and recommendations must be made on the basis of facts. It does not appear likely that further investigation will do more than to increase our statistical knowledge, and fill out the records of types and cases. The only point under serious dispute which may be cleared up by scientific investigations, and which should be most carefully studied, is the classification of addiction as a disease or as something else. Until this is done in a manner sufficiently clear to carry conviction, the present arguments will continue.

NOTES FROM THE NEW YORK STATE DEPARTMENT OF HEALTH

EPIDEMIC JAUNDICE.

During the latter part of December the State Department of Health received through its sanitary supervisors reports of several outbreaks of a disease having the appearance of epidemic jaundice. As these reports have come in quite incidentally from two or three localities it is possible that similar cases have occurred elsewhere and the Department is communicating with every physician in the State in order to assemble further data and make an adequate investigation.

The recent cases which have aroused suspicion occurred in the towns of Georgetown, Madison County, Hannibal, Oswego County, Macomb, St. Lawrence County, and in the City of Oswego. The first of the earlier outbreaks which attracted the Department's attention occurred in the village of Berkshire, in April of 1920. A further extensive outbreak occurred in Chenango County and the adjacent part of Delaware County during January, 1921. The disease appears to be of a mild character, no deaths having been reported. However, this does not mean that it may not assume a severe character in the future. The State Department of Health is therefore very anxious to investigate carefully any outbreaks which may occur, in order to determine the identity of the disease, its mode of transmission and the measures that should be taken to control it.

So far it has not been possible to identify the cases reported in New York State with the spirochetosis ictero-hemorrhagica which is quite prevalent in Japan and which was of frequent occurrence in the trenches during the world war. In Japan the disease is characterized by a very high mortality (from 30 to 50 per cent), a mortality vastly in excess of that recorded in any other part of the world. In fact elsewhere the mortality has been very low. In Japan a spirochæta has been found quite constantly present in the cases and the same organism has also been discovered in rats. An organism apparently identical with the Japanese spirochæta has also been discovered in wild rats both in France and the United States. It has not been found associated with human cases in any American outbreak, so far as the Department has been able to discover.

The Department will appreciate immediate reports from the practitioners of the State, by telegraph or telephone, either through the Sanitary Supervisors, or directly to the central office in Albany, in regard to any groups of cases of this character. If any physician has observed in his practice an undue prevalence of jaundice in the past, the Department would be glad to have a description of the cases together with the pertinent epidemiological data, particularly with reference to the prevalence of rats.

NEW CIRCULAR ON BREAST FEEDING.

Realizing the importance of breast feeding as a factor in the reduction of infant mortality, the Children's Bureau of the Federal Department of Labor has recently published a bulletin entitled "Breast Feeding" which is an initial step in a nation-wide campaign for the promotion of maternal nursing. This bulletin is written for physicians and nurses by a pediatrician, and has been passed upon by representatives of the pediatric section of the American Medical Association, the American Pediatric Society and the American Child Hygiene Association. The Division of Child Hygiene of the State Department of Health has obtained a supply and is sending a copy to each of the health officers and public health nurses of New York State. The information which this publication presents is of especial interest to pediatricians and general practitioners. Single copies may be obtained from the Children's Bureau, Washington.

**REVISED CONSTITUTION AND BY-LAWS
OF THE MEDICAL SOCIETY OF THE
STATE OF NEW YORK**

CONSTITUTION

ARTICLE I.

PURPOSE OF THE SOCIETY.

The purposes of the Society shall be to federate and bring into one compact organization the medical profession of the State of New York; to extend medical knowledge and advance medical science; to elevate the standard of medical education and to secure the enactment and enforcement of just medical laws; to promote friendly intercourse among physicians; to guard and foster the material interests of its members, and to protect them against imposition; and to enlighten and direct public opinion in regard to the great problems of State medicine. (Same as old Constitution.)

ARTICLE II.

COMPONENT COUNTY MEDICAL SOCIETIES.

SEC. 1. The terms county medical society and component county medical society shall be deemed to include all county medical societies now in affiliation with this Society or which may hereafter be organized and chartered by the House of Delegates. (Source Const., Art. II, Sec. 1.)

SEC. 2. There shall be but one county medical society in each county affiliated with this Society. (Source By-laws, Chap. X, Sec. 1.)

SEC. 3. If there should be an insufficient number of physicians and surgeons in any of the counties of this State to form themselves into a medical society agreeably to law, such physicians may become members of the component county medical society of an adjoining county when eligible by the Constitution and By-laws of such society of such adjoining county. (Source, original charter, Sec. 24.)

ARTICLE III.

DISTRICT BRANCHES.

SEC. 1. The membership of the Society shall be divided into eight district branches, as follows:

The First District Branch shall comprise the members of the Medical societies of the Counties of Bronx, New York, Westchester, Rockland, Putnam, Orange, Dutchess and Richmond.

The Second District Branch shall comprise the members of the medical societies of the Counties of Kings, Queens, Nassau and Suffolk.

The Third District Branch shall comprise the members of the medical societies of the Counties of Albany, Rensselaer, Schoharie, Green, Columbia, Ulster and Sullivan.

The Fourth District Branch shall comprise the members of the medical societies of the Counties of St. Lawrence, Franklin, Clinton, Essex, Hamilton, Fulton, Montgomery, Schenectady, Saratoga, Warren and Washington.

The Fifth District Branch shall comprise the members of the medical societies of the Counties of Onondaga, Oneida, Herkimer, Oswego, Lewis, Madison and Jefferson.

The Sixth District Branch shall comprise the members of the medical societies of the Counties of Otsego, Delaware, Chenango, Cortland, Tompkins, Schuyler, Chemung, Tioga, Broome and Steuben.

The Seventh District Branch shall comprise the members of the medical societies of the Counties of Monroe, Wayne, Cayuga, Seneca, Yates, Ontario and Livingston.

The Eighth District Branch shall comprise the members of the medical societies of the Counties of Erie, Niagara, Orleans, Genesee, Wyoming, Allegany, Cattaraugus and Chautauqua. (Source Const., Art. II, Sec. 3; By-laws, Chap. VIII.)

SEC. 2. Each District Branch may adopt a constitution and by-laws for its government, subject to the same being duly approved as provided by the Constitution and By-laws of this Society. (Source By-Laws, Chap. VIII, Sec. 4.)

ARTICLE IV.

MEMBERSHIP.

SEC. 1. The membership of this Society shall be divided into three classes: (1) active; (2) retired and (3) honorary. (Source Const., Art. II, Sec. 1. By-laws, Chap. I, Secs. 2-3.)

SEC. 2. The active members shall be all members in good standing of the component county medical societies. (Source Const., Art. II, Sec. 1.)

SEC. 3. The retired members of this Society shall be those now on the roster of the Society as such and in addition such members of component county medical societies who are seventy years of age or over and who by a majority vote of the House of Delegates present and voting at any annual meeting shall be elected to such membership. (Source By-laws, Chap. I, Sec. 2.)

SEC. 4. The honorary members of the Society shall be all persons now on the roster as such and in addition such distinguished physicians residing outside of the State of New York who shall be elected to honorary membership at any annual meeting of the House of Delegates by a two-thirds vote of the delegates present and voting, provided the nomination shall have been made at a previous annual meeting. (Source By-laws, Chap. I, Sec. 3.)

SEC. 5. Honorary and retired members shall be entitled to the privilege of attending and addressing the meetings of the Society, but shall not be accorded the other rights and privileges of membership or be subject to assessments. (Source By-laws, Chap. I, Sec. 3.)

ARTICLE V.

OFFICERS.

SEC. 1. The officers of the Society shall be a President, a Vice-President, a Speaker and a Vice-Speaker of the House of Delegates, a Secretary, an Assistant Secretary, a Treasurer, an Assistant Treasurer and one Councilor from each District Branch. Each of said officers, with the exception of the councilors shall be elected by the House of Delegates and his term of office shall begin at the termination of the annual meeting of the House of Delegates and shall be for one year or until his successor or successors shall have been duly chosen. The term of office for the Councilor from each of the district branches shall be for the term of two years and such Councilor shall be elected by the District Branch in which he may reside and shall be the President thereof. (Source Const., Art. III, Secs. 1 and 2.)

ARTICLE VI.

HOUSE OF DELEGATES.

SEC. 1. The House of Delegates shall be composed of (1) Delegates elected by the component county medical societies; (2) Officers of the Society; (3) Chairman of standing committees who shall be ex-officio members thereof. Each said component county medical society shall be entitled to elect as many delegates as there shall be State Assembly Districts in such county at the time of the election, and each such component county medical society shall be entitled to elect at least one delegate, and if at the time of such election membership of the component county medical society shall include members from an adjoining county, in which there is no county medical society, such component county medical society shall be entitled to elect from any such members as many additional delegates as there are Assembly Districts in the county or

counties so represented in its membership. (Source Const., Art. IV.)

SEC. 2. The House of Delegates shall be the legislative body of the Society; shall be charged with the general management, superintendence and control of the Society and its affairs and shall have such general powers as may be necessarily incident thereto and shall have power to suspend or otherwise discipline component county medical societies; to provide for a division of the scientific work of the Society into appropriate sections, to provide for the organization of the District Branches, to adopt rules and regulations for its own government and for the administration of the affairs of the Society and to delegate to the Council such power and authority as may be necessary to the efficient administration of the affairs of the Society while the House of Delegates shall not be in session. (Source Const., Art. IV.)

ARTICLE VII.

COUNCIL.

SEC. 1. The Council shall be composed of (1) officers of the Society, except the assistant secretary and assistant treasurer; (2) chairmen of the standing committees; (3) the retiring President for a term of one year after his term of office expires. (Source Const., Art. V.)

SEC. 2. The Council shall be the executive body of the Society and shall have charge of all properties and the financial affairs of the Society; shall elect an *Executive Committee of the Council to carry on during the interim between the regular meetings of the Council the affairs and the business of the Society in accordance with the By-laws*; shall adopt rules and regulations for its own government and for the administration of the affairs of the Society within its control, not repugnant to the Constitution and By-laws of the Society or to the rules and regulation which may be adopted by the House of Delegates and shall have such additional powers and duties as the By-laws may prescribe. (Source Const., Art. V. Also new matter indicated.)

ARTICLE VIII.

CENSORS.

SEC. 1. The Society shall elect annually not more than twelve nor less than six Censors. (Source Laws of 1818, Chap. 206.) At least eight of said number shall consist of the President or the Vice-President when necessary, Secretary, and District Councilors and they shall be known as the Board of Censors of the Society. The Board of Censors shall have jurisdiction to hear and determine all appeals from the decision of component county medical societies which may involve the rights and standing of members whether in relation to one another or to county medical societies or to this Society. (Source By-laws, Chap. V, Sec. 1.) Five Censors shall constitute a quorum. Any member of any component county medical society, feeling aggrieved at the action of such Society may within six months after such action shall have been taken, appeal to the Board of Censors of this Society from the decision of such component county medical society, and any applicant for membership in such component county medical society who may have been excluded from membership in such Society, may likewise appeal from the action of said Society excluding him. (Source new Membership Corporation Law, Sec. 214.) (New, except as indicated.)

ARTICLE IX.

MEETINGS.

SEC. 1. "The Medical Society of the State of New York may, from time to time, change the place and day of holding its annual meeting to such other place and day in the year as may be more convenient, by a two-thirds vote of all the members of the House of

Delegates of said Society present at any anniversary or annual meeting of said Society, provided, that no such change shall be made unless notice of the intention to change the time and place of such annual meeting shall have been first given at a previous regular annual meeting. An entry in the minutes of said Society of notice of such intention to change the time and place of the annual meeting, and an entry in such minutes of the vote taken upon any motion made pursuant to any such notice shall be prima facie evidence of such notice, motion, and the vote had thereon respectively." (Laws of 1909, Chap. 213, Const., Art. VI, Sec. 1.)

SEC. 2. Intermediate stated meetings may be held at such time and place as the House of Delegates may appoint. (Source Const., Art. VI, Sec. 2.)

ARTICLE X.

FUNDS.

SEC. 1. Funds shall be raised by an annual per capita assessment on each component county society at a uniform per capita rate throughout the State, and the aggregate of such assessments for any member in any one year shall not exceed five dollars. (Source Const., Art. VII, Sec. 1.) (Membership Corporation Law, Sec. 215.) *Funds may also be raised in any other manner approved by the House of Delegates or by the Council when the said House of Delegates shall not be in session* and no funds of the Society shall be appropriated for any purpose, except by the authority of a resolution of the Council, nor shall any indebtedness be incurred by any officer, by members of Committees or members of the Society as a charge against the Society until the same shall have been approved by the Council. (Source Const., Art. VII, new matter indicated.)

ARTICLE XI.

REFERENDUM.

SEC. 1. At any annual or stated meeting of the Society or of the House of Delegates a majority of the members present may order a general referendum on any question in accordance with such general regulations respecting the manner of submission as the House of Delegates may prescribe. Members of the Society may vote thereon by mail or by roll call in open meeting. The poll on the question shall be closed at the expiration of ten days after the general submission; and if the members voting shall comprise a majority of all the members of the Society, a majority of such vote shall determine the question and be binding on the Society and the House of Delegates. (Source Const., Art. VIII, Secs. 1-2.)

ARTICLE XII.

AMENDMENTS.

SEC. 1. Amendments to this Constitution except such as are obligatory by law, can be made only at an annual meeting of the House of Delegates.

SEC. 2. Notice of the proposed amendment shall be given at a previous annual meeting of the House of Delegates, and before the same can be acted upon, it shall be published twice before the annual meeting in the official bulletin or journal of the Society or sent, when so ordered by the House of Delegates to each component county medical society at least two months before the meeting, at which time final action shall be taken thereon.

SEC. 3. The affirmative vote of two-thirds of the delegates present and voting shall be necessary for adoption.

SEC. 4. Amendments made necessary by law shall be made either by the Council or House of Delegates whenever such necessity exists.

SEC. 5. This Constitution shall take effect immediately, except that the term of office of any councilor now in office whose term of office shall not have expired, shall continue for the term for which he was duly elected.

BY-LAWS.

CHAPTER I.
MEMBERSHIP.

SEC. 1. A copy of the roster of members in good standing of component county medical societies certified by the Secretary of such society to be correct shall be *prima facie* evidence of the right of the members whose names appear therein to membership in this Society. (Source By-laws, Chap. I, Sec. 1.)

SEC. 2. Active members who are eligible for retired membership in this Society may apply therefor, and such applications must be approved and endorsed by the President and Secretary of the component county medical society to which such applicant belongs and thereupon sent to the Secretary of this Society in time for presentation at the first meeting of the annual session of that year of the House of Delegates. (Source By-laws, Chap. I, Sec. 3.)

SEC. 3. All nominations for honorary membership must be endorsed by three members of the Society and forwarded to the Secretary in time for presentation at the first session of the annual meeting of that year of the House of Delegates. (Source By-laws, Chap. I, Sec. 3.)

SEC. 4. Any member ceasing to be a member of a component county medical society shall cease to be a member of this Society. (Source Const., Art. II, Sec. 1.)

CHAPTER II.
MEETINGS.

SEC. 1. The notices of the annual, regular and special meetings of the Medical Society of the State of New York, its House of Delegates, Council and Censors shall state the date, place and hour and shall be mailed in securely postpaid wrapper to each member of the body holding such meeting at least ten days before said meeting. The affidavit of mailing by the Secretary of the Society to the last recorded address of the member shall be deemed sufficient proof of the service upon each and every member for any and all purposes. (Source Const., Art. II, Sec. 3.)

SEC. 2. Each member in attendance at the annual meeting, special or intermediate stated meetings of the Society shall enter his name and the name of the component county medical society to which he belongs in a register to be kept by the Secretary of the Society for that purpose. No member shall take part in any of the proceedings of such a meeting until he shall have complied herewith. (Source By-laws, Chap. II, Sec. 1.)

SEC. 3. All members in good standing so registered may attend and participate in the proceedings and discussions of the general meetings of the Society and of the sections. (Source By-laws, Chap. II, Sec. 2.)

SEC. 4. It shall be the duty of the Secretary of the Society to present annually to the House of Delegates, a resolution providing for the date and place of holding the next annual meeting and according to the provisions of law, a two-thirds vote of the House of Delegates is necessary to pass the resolution. Should such resolution be not introduced, the House of Delegates hereby delegate authority to the Council to fix the time and place of such meeting. (New.)

SEC. 5. The following shall be the order of business at all general meetings of the Society:

1. Calling the Society to order.
2. Address of welcome by the Chairman of the Committee on Arrangements.
3. Reading the minutes of the last meeting.
4. Reports of special committees.
5. Special addresses.
6. President's address.
7. Reading and discussion of papers.
8. Miscellaneous business.

(Source By-laws, Chap. II, Sec. 3.)

SEC. 6. Special meetings of the Society shall be

called by the President upon the request of one hundred members; and in case of the failure, inability or refusal of the President to act, such meeting may be called by a notice thereof subscribed by one hundred members. (Source By-laws, Chap. II, Sec. 4.)

SEC. 7. Special meetings of the House of Delegates shall be called by the Speaker upon the request of fifty delegates; and in case of the failure, inability or refusal of the President to act, such meetings may be called by a notice thereof subscribed by fifty delegates. (Source By-laws, Chap. II, Sec. 5.)

CHAPTER III.

HOUSE OF DELEGATES.

SEC. 1. The House of Delegates shall meet annually on the day before the annual meeting of the Society. The meeting may be adjourned from time to time as may be necessary to complete business, providing that the sessions shall conflict as little as possible with the annual meeting of the Society. (Source By-laws, Chap. III, Sec. 1.)

SEC. 2. Thirty delegates shall constitute a quorum. (Same as old By-laws.)

SEC. 3. The House of Delegates shall make careful inquiry into the condition of the profession in each county of the State, and shall have authority to adopt such methods and measures not in conflict with the Constitution and By-laws of the Society as it may deem most efficient for building up and increasing the interest in such county societies as already exist; for organizing the profession in counties where societies do not exist and for organizing district branches. (Source By-laws, Chap. III, Sec. 3.)

SEC. 4. It shall elect delegates to the House of Delegates of the American Medical Association in accordance with the Constitution and By-laws of that body, and it may elect or appoint such other delegates as in its judgment, the interests of the Society may require, and it shall provide for the issue of credentials to all delegates. (Same as old By-laws.)

SEC. 5. It shall upon application provide for the issue of charters to county societies in affiliation with the Society, and it shall hear and finally determine all appeals taken from decisions of the Board of Censors. (Same as old By-laws.)

SEC. 6. It shall have authority to appoint committees for special purpose from among members of the Society. Each committee shall report to the House of Delegates and to the Council when it so desires and also when requested by it when the House of Delegates shall not be in session. (Source By-laws, Chap. III, Sec. 6. New portion indicated.)

SEC. 7. It shall have authority to organize the physicians of two or more sparsely settled and adjoining counties into societies to be suitably designated so as to distinguish them from district branches; and the societies so organized shall be entitled to all rights and privileges of county societies and the members thereof to the rights and privileges of members of county societies. (Same as old By-laws.)

SEC. 8. The following shall be the order of business at the sessions of the House of Delegates:

1. Calling the meeting to order.
2. Roll call by the Secretary.
3. Reading of the minutes of the previous meeting.
4. Address of the President.
5. Address of the Speaker.
6. Report of the Council.
7. Report of the Secretary.
8. Report of the Treasurer.
9. Reports of standing committees.
10. Reports of special committees.
11. Unfinished business.
12. New business.

(Same as old By-laws.)

SEC. 9. The officers and committees of the Society to be elected by the House of Delegates shall be elected at an adjourned session of the annual meeting of the House of Delegates, which adjourned session shall be held at a convenient hour on the first day of the annual meeting of the Society. No members shall be eligible for any office, or entitled to vote for any officer or delegates who is in arrears for county dues and State Society per capita assessment. (Source By-laws, Chap. III, Sec. 9.)

SEC. 10. Method of Holding Elections.—All elections shall be by ballot, each delegate depositing his ballot upon call of the roll, and a majority of the votes cast shall be necessary to elect. In the event of a single nominee only for any office, a majority vote without ballot shall elect. In case no nominee receives a majority of the votes on the first ballot, the balloting shall continue until one of the nominees receives a majority of all the votes cast, when he shall be declared elected, but in case no delegate or alternate for the American Medical Association receives on the first ballot a majority of the votes, the nominees shall be declared elected in the order of the highest number of votes received, until the allotted number shall have been chosen. In case of a tie vote for delegate or alternate a new ballot shall be taken. No ballot for any office shall be taken while a ballot for another office is being taken. (Chiefly new matter.)

SEC. 11. A delegate shall not be considered in good standing or entitled to vote in the House of Delegates if the component county medical society by which he was chosen is in default in the payment of any dues or assessments imposed by the House of Delegates or if such component county medical society shall at the time be under sentence of suspension imposed by the House of Delegates or if such delegate is not in good standing in this Society or in the component county medical society to which he belongs. (Source By-laws, Chap. I, Sec. 1.)

CHAPTER IV.

COUNCIL.

SEC. 1. The Council shall meet at the close of the annual meeting of the Society, to organize for the ensuing year.

It shall meet once during the months of May and December of each year, the time and place to be selected by the President, and it shall meet at other times upon the request in writing of five members of the Council, or upon the call of the President.

SEC. 2. Seven members shall constitute a quorum. (By-laws, Chap. IV, Sec. 1 and 2.)

SEC. 3. The Council shall elect by majority vote an Executive Committee consisting of seven members of the Council, one of whom shall be the President, one the Secretary and five other members of the Council, at the regular meeting of the Council held at the close of the annual session of the Society. The President shall nominate the candidates for election to the Executive Committee, and other candidates may be nominated by any member of the Council. The Executive Committee shall hold office until the following annual meeting of the Council or until their successors shall be duly chosen. The Executive Committee shall upon election, organize immediately for business, elect a Chairman, a Vice-Chairman and a Secretary. The Executive Committee shall hold regular meetings at times and places that shall be fixed by the Chairman and any two members of the Executive Committee may require the Chairman thereof to call a meeting for such time and place as shall be designated by them, in writing, of which the members shall have at least two days' notice. Four members shall constitute a quorum. (Source—Present rules of Council.)

SEC. 4. The following shall be the order of business at meetings of the Executive Committee:

1. Calling the meeting to order.
2. Roll call.
3. Reading of minutes.
4. Reports and communications.
5. Unfinished business.
6. New business.

(Source—same.)

SEC. 5. The Executive Committee shall superintend all publications of the Society and their distribution and shall have authority to appoint an editor and such assistants as it may deem necessary. The Executive Committee shall have such other powers and duties as may be delegated to it from time to time by the Council. It shall act as advisor to the legal counsel of the Society in suits brought against members of the Society for alleged malpractice. (Source—same.)

It shall examine the Constitution and By-laws and all amendments, additions or alterations thereto which may be submitted to the Council for approval and shall report to the Council its approval or disapproval thereof. The Chairman of the Executive Committee may, or any two members of the Committee may require the Chairman to order a referendum vote by the members of the Council on any question that may come before the Executive Committee and members of the Council may vote thereon by mail or telegram. The poll on the question so submitted shall be closed at the expiration of five days after such submission, and if the members of the Council voting shall comprise a majority of all the members of the Council, a majority of such vote shall determine the question and be binding upon the Council and the Executive Committee.

In case of any vacancy in the Executive Committee through death, resignation, disqualification or other cause, the President shall appoint a successor to fill such vacancy until the next meeting of the Council.

The Executive Committee may adopt rules and regulations for its own government and for the administration of the affairs of the Society not repugnant to the Constitution and By-laws of the Society or to the rules and regulations which may be adopted by the House of Delegates or the orders of the Council.

SEC. 6. All moneys of the Society received by the Council shall be paid to the Treasurer of the Society. The Council shall audit the annual accounts of the Treasurer and Secretary and other agents of the Society and present a statement of the same in its annual report to the House of Delegates. The Council shall likewise make a report to the House of Delegates of its transactions for the year and of the amount of money belonging to the Society under its control.

The Council shall have power to fill any vacancies which may occur in any elective or appointive office not otherwise provided for. (Source By-laws, Chap. IV, Sec. 3.)

SEC. 7. The Council between meetings of the House of Delegates may legislate as a House of Delegates upon any matter over which the House of Delegates would have jurisdiction if in session, but such legislation shall be consistent with any action taken by the House of Delegates during said year on said matter and it shall have power to take all action necessary to give full effect to any action taken during said year by the House of Delegates for the purpose of promoting the best interests of the Society. When occasion arises for the Council to exercise its power as a House of Delegates when the House of Delegates is not in session such legislative action of the Council shall not become effective unless submitted to a referendum of the House of Delegates and approved by a majority thereof. Ten days shall be allowed between the submission of such referendum and the closing of the vote.

SEC. 8. The Council also shall have general supervision of all arrangements for the annual meeting. (Same as old By-laws.)

SEC. 9. The standing or special committees of the Society, whether appointed under the By-laws or special action of the House of Delegates or of the Council, shall when ordered by the House of Delegates or requested by the Council, report to the Council and shall be subject to the jurisdiction of the Council at all times when the House of Delegates shall not be in session. (Part new.)

SEC. 10. The following shall be the order of business at meetings of the Council:

1. Calling the meeting to order.
2. Roll call by the Secretary.
3. Reading of minutes and communications from the Secretary.
4. Communications from the Treasurer.
5. Communications from the chairmen of standing committees.
6. Unfinished business.
7. New business. (Same as old By-laws.)

CHAPTER V.

CENSORS.

SEC. 1. All appeals to the Board of Censors of this Society shall be made in writing and shall contain a digest of the testimony of witnesses heard and evidence received in the proceeding before such component county medical society and a copy of the decision of such society and a specification of the appellant's exceptions to the decision appealed from. The Board of Censors shall decide the matter on said papers, unless in their opinion, the taking of further evidence is deemed advisable, in which event the said Board may proceed to take such evidence and upon the whole case make a final disposition of the matter. (New.)

CHAPTER VI.

DUTIES OF OFFICERS.

SEC. 1. The President or the Vice-President when necessary shall preside at all meetings of the Society, the Council and the Censors. The President shall appoint all committees not otherwise provided for. He shall deliver an address at the annual meeting of the Society, and he shall perform such other duties as custom and parliamentary usage may require. He shall be *ex officio* a member of all standing committees. (Source By-laws, Chap. VI, Sec. 1.)

SEC. 2. The Vice-President shall assist the President in the discharge of his duties, and in his absence the next ranking officer shall perform such duties. In the event of the President's death, resignation, removal, incapacity or refusal to act, the Vice-President shall succeed him. (Source By-laws, Chap. VI, Sec. 2.)

SEC. 3. The Speaker shall preside at all meetings of the House of Delegates. He shall deliver an address at the annual meeting and shall perform such other duties as custom and parliamentary usage may require. He shall appoint all special committees *serving during the meeting* of the House of Delegates. (Source By-laws, Chap. VI, Sec. 3. New part indicated.)

SEC. 4. The Vice-Speaker shall perform the duties of the Speaker when requested by the Speaker to do so, or in case of the death, resignation or refusal of the Speaker to act in that capacity from any cause. (Same as old By-laws.)

SEC. 5. The Secretary shall attend all meetings of the Society, the House of Delegates, the Council and the Censors, and shall keep minutes of their respective proceedings in separate records. He shall be the custodian of the seal of the Society, and of all books of records and papers belonging to the Society, except such as properly belong to the Treasurer, and shall keep an account of and promptly turn over to the Treasurer all funds of the Society which come into his hands. He

shall provide for the registration of the members at all sessions of the Society. With the aid and co-operation of the secretaries of the county societies, he shall keep a proper register of all the registered physicians of the State by counties. He shall aid the Councilors in the organization and improvement of the county societies and the extension of the power and influence of the Society. He shall conduct the official correspondence notifying members of meetings, officers of their election and committees of their appointment and duties. He shall affix the seal of the Society to all credentials issued to members of the Society elected or appointed by the House of Delegates and to such other papers and documents as may require the same. He shall make an annual report to the House of Delegates. He shall supply each county society with the necessary blanks for making their annual reports to this Society. Acting under the direction of the Committee on Scientific Work he shall prepare and issue all programs. The amount of his salary shall be fixed by the Council. He shall be *ex officio* a member of all standing committees. He shall make entry of the name of each and every member of the Society and the time of his admission and shall include in his minutes an annual report of the state of the treasury. (Source By-laws, Chap. VI, Sec. 5. Last part new.)

SEC. 5a. The Assistant Secretary shall aid the Secretary in the work of his office and in his absence or inability to act, perform the duties of the latter until he shall resume his duties, or in case of a vacancy until a successor shall be appointed. When acting as Secretary he shall have all the rights and privileges of that office, not otherwise. (Same as old By-laws.)

SEC. 6. The Treasurer shall keep accurate books of accounts of all moneys of the Society which he may receive, and shall disburse the same when duly authorized by the Council; but all checks drawn by the Treasurer upon the funds of the Society shall be countersigned by the President or by the Secretary of the Society. He shall give security for the faithful performance of his duties, which shall be approved and placed in the custody of the President. He shall make an annual report to the House of Delegates. The Treasurer shall be a trustee of the Merritt H. Cash Fund, and Lucien Howe Fund, and such other special funds as may be established. His salary shall be fixed by the Council. The report of the Treasurer to the House of Delegates and the acceptance of the same by the House of Delegates shall constitute an approval by the Society of the actions of the Treasurer in accordance with law. (Same as old By-laws, except last part new.)

SEC. 7. The Assistant Treasurer shall aid the Treasurer in the work of his office, and in his absence or inability to act, perform the duties of the latter until he shall resume his duties, or in case of a vacancy until a successor shall be appointed. When acting as Treasurer he shall have all the rights and privileges of that office, not otherwise. (Same as old By-laws.)

SEC. 8. Each District Councilor shall visit the counties of his district at least once a year. He shall make an annual report of his work and of the condition of the profession in each county in his district at the annual session of the House of Delegates. (Same as old By-laws.)

SEC. 9. The expenses actually incurred in the performance of the official duties of delegates of the Society to the meetings of the House of Delegates of the American Medical Association, of officers, members of the Council and Executive Committee thereof, presidents of the District Branches, shall be paid by the Society upon submission in conformity with the following conditions: the Delegates of the House of Delegates of the American Medical Association shall be reimbursed or allowed the actual cost of railroad transportation from the place of their residence to the

place where such meeting is held and return, including the cost of Pullman accommodation and such allowance shall be made to such delegates provided such delegates shall have attended each session of the meeting of the said House of Delegates to which he was elected and he shall have presented to the Secretary of this Society, evidence of such attendance and the incurrence of such expenses. The President and the Secretary of the Society shall be reimbursed or allowed for traveling within the State, that is necessary for the performance of their duties as such officers and which is actually done in the performance of such official acts as such officers, the actual cost of railroad transportation or its equivalent, from the place where such officer resides to his destination, including the cost of Pullman accommodation and return, and a further allowance, where the same is actually incurred and necessary during the time actually occupied in such official activities, of a sum for maintenance not to exceed ten dollars per diem and such officers shall present to and file with the Secretary, a proper voucher therefor. The members of the Council and the Executive Committee thereof, shall be reimbursed or allowed for expenses incurred in the attendance upon meetings of said Council or Executive Committee, the actual cost of railroad transportation or its equivalent, including Pullman accommodation, from the place of their residence to the place where such meeting or meetings shall be held and return, and such member of said Council or Committee shall present to and file with the Secretary, a voucher therefor. The officers of the District Branches of the Society shall be reimbursed or allowed for expenses incurred in the attendance upon meetings attended by them in the performance of their official duties, the actual cost of railroad transportation or the equivalent thereof, including Pullman accommodation, from the place of their residence to the place where such meeting or meetings shall be held and return, and such officer shall present to and file with the Secretary, a voucher therefor. Each District Branch shall be entitled to receive a sum not to exceed one hundred dollars per annum to defray the expenses of holding the annual meeting of such District Branch, and shall present to and file with the Secretary a voucher therefor if such funds are desired by such District Branch. All bills or claims or vouchers hereinabove provided for, shall be filed within thirty days after the date of the incurring of such expenses unless further time, not to exceed ninety days in any given case for good cause shown, shall be allowed by the said Council or its Executive Committee. (New—President rules of Council.)

CHAPTER VII.

COMMITTEES.

SEC. 1. Classification of Committees.—Committees shall be classified as (a) Standing Committees; (b) Reference Committees; (c) Special Committees.

SEC. 2. The following shall be the Standing Committees of the Society:

- A Committee on Scientific Work.
- A Committee on Legislation.
- A Committee on Public Health and Medical Education.
- A Committee on Arrangements.
- A Committee on Medical Research.
- A Committee on Medical Economics.

SEC. 3. The Committee on Scientific Work shall consist of the Chairman, a member to be appointed by the President of the Society and approved by the Council, and the Chairman of the different sections. It shall hold meetings and prepare the necessary programs for the annual meeting of the Society and for

such other special meetings as may be designated by the House of Delegates. It shall forward programs in ample time for publication, and not later than thirty days before the annual session shall send a completed program to the Secretary for the printing of the final program.

SEC. 4. The Committee on Legislation shall consist of three members including the Chairman. It shall keep in touch with professional and public opinion. Under the direction of the House of Delegates it shall represent the Society in procuring the enforcement of the medical laws of the State, in the interest of public health and of scientific medicine, and in procuring the enactment of such medical laws as will best secure and promote the welfare of the whole people.

SEC. 5. The Committee on Public Health and Medical Education shall consist of nine members, including the Chairman. It shall investigate, report upon and present to the Society such subjects as may seem to the Committee to be of special importance in their relation to the public health.

SEC. 6. The Committee on Arrangements shall consist of eight members, including the Chairman. It shall provide suitable accommodations for the meeting places of the Society, and of the House of Delegates, Council and Censors, and shall make all arrangements for these meetings. The Chairman of the Committee shall report an outline of the arrangements to the Secretary for publication in the program, and shall make such additional announcements during the session as occasion may require.

SEC. 7. The Committee on Medical Research shall consist of the Chairman and one member for each 200 or fraction thereof, of the membership of the eight District Branches of the Medical Society of the State of New York. It shall adopt such measures as may be necessary, to instruct the public and the profession in the desirability of animal experimentation and shall use all honorable means to oppose such bills as may be presented to the Legislature with the view of limiting or restricting scientific progress. In legislative work it shall act in co-operation with the Committee on Legislation.

SEC. 8. The Committee on Medical Economics shall consist of five members, including the Chairman. It shall investigate all matters affecting the economic status of physicians and shall report annually to the House of Delegates such recommendations as may, in its judgment, seem proper.

SEC. 9. The Chairman of all standing committees shall be elected by the House of Delegates, unless otherwise provided for in the By-laws. The remaining members may be elected by the Council.

REFERENCE COMMITTEES.

SEC. 9a. (a) Immediately after the organization of the House of Delegates at each annual meeting the Speaker shall appoint from among the members present such committees as may be deemed expedient by the Speaker. Each committee shall consist of five members, unless otherwise provided. These committees shall serve during the meeting at which they are appointed.

(b) To the appropriate committee shall be referred resolutions, measures and propositions presented to the House of Delegates before final action shall be taken, unless otherwise ordered by the House of Delegates.

(c) Each Reference Committee shall, as soon as possible after the adjournment of each session, or during the session if necessary, take up and consider such business as may have been referred to it, and shall report on the same at the next session, or when called on to do so. Three members shall constitute a quorum.

SPECIAL COMMITTEES.

SEC. 10a. Special Committees may be created by the House of Delegates to perform the special functions for which they are created. They shall be appointed by the officer presiding over the meeting at which the committee is authorized, if such committee is to conclude its work during said meeting of the House of Delegates, otherwise by the President, unless otherwise ordered by the House of Delegates. (Part new.)

(b) The Committee on Prize Essays shall consist of three members including the Chairman. Its duty shall be to receive all essays offered in competition for prizes which may be offered by this Society. (Same as old By-laws.)

The Committee shall make all necessary rules and regulations for the award of prizes subject to the terms of the deeds of gift, and shall report the result at the next annual meeting of the House of Delegates. They shall give notice through the Society's publications or by other methods within thirty days after their appointment, of the amount of the prize essays and when the essays shall be submitted to the Committee.

Members of the Committee on Prize Essays shall be elected by the House of Delegates for the term of two years. (Same as old By-laws.)

MEMBERSHIP OF COMMITTEES.

SEC. 11. Any member of the Society shall be eligible to serve on Standing or Special Committees. All members of committees who are not members of the House of Delegates shall have the right to present their reports in person to the House of Delegates and to participate in the debate thereon, but shall not have the right to vote. (Same as old By-laws.)

CHAPTER VIII.

DISTRICT BRANCHES.

SEC. 1. Each District Branch shall elect a President, as directed in this Constitution and By-laws, who shall be the Councilor for that Branch. (Chap. VIII, Sec. 2, same as old By-laws.)

SEC. 2. Each District Branch shall elect such officers as are provided for in its By-laws, who shall attend the business meetings. (Chap VIII, Sec. 3, same as old By-laws.)

CHAPTER IX.

SECTIONS.

SEC. 1. The Sections designated by the House of Delegates shall each annually elect a Chairman and Secretary provided that each Section may elect its Secretary to serve a longer time at its discretion.

SEC. 2. The Chairman of the various Sections shall be members of the Committee on Scientific Work.

SEC. 3. The election of officers of Sections shall be the first order of business of the afternoon session of the second day of each annual meeting. To participate in the election of any Section a member must be registered with such Section and must have recorded his name and address in the Section registry.

SEC. 4. Each Section shall hold its meetings at such times as designated by the Committee on Scientific Work. (Chap. IX, same as old By-laws.)

CHAPTER X.

COMPONENT COUNTY SOCIETIES.

SEC. 1. Whenever a member in good standing in any component county medical society removes to another county in this State, his name, upon his request, shall be transferred to the roster of the component county medical society of the county to which he removes, without cost to him. (Re-enact Chap. X, Sec. 4.)

SEC. 2. At its annual meeting each component county medical society shall elect a delegate or delegates to represent it in the House of Delegates of this Society,

in accordance with the Constitution and By-Laws of this Society. (Re-enact Chap. X, Sec. 5.)

SEC. 3. The Secretary of each component county medical society shall keep a roster of its members and of all other registered physicians of such county in which shall appear the full name of each of said physicians, the date of his admission to such society, his residence and the date when his license to practice medicine in this State was granted. *He shall note any changes in said roster by reason of removal, death, revocation of license or other disqualification.* (Source Chap. X, Sec. 6—part new.)

SEC. 4. He shall forward said roster and information, together with the names and places of residence of each of the officers of said society, the names and residences of each delegate of the House of Delegates of said society to the Secretary of this Society thirty days before the date of its annual meeting. (Source Chap. X, Sec. 7.)

SEC. 5. The Treasurer of each component county medical society shall forward to the Treasurer of this Society, the amount of the State per capita assessment on or before the first day of June of each year. (Source Const. Art. VII, Sec. 2.)

SEC. 6. Each component county medical society may adopt a Constitution and By-laws for the regulation of its affairs provided the same shall be first approved by the Council of this Society. (Chap. X, Sec. 9.)

CHAPTER XI.

MISCELLANEOUS.

SEC. 1. No address or paper before the Society, except those of the President and orators, shall occupy more than twenty minutes in its delivery, and no member shall speak upon any question before the House for longer than five minutes nor more than once on any subject, except by the consent of a majority vote. (Same as old By-laws.)

SEC. 2. All papers read before the Society by its members shall become the property of the Society. Permission may be given, however, by the Council, House of Delegates or the Executive Committee to publish such paper in advance of its appearance in the NEW YORK STATE JOURNAL OF MEDICINE. (Source Chap. XI, Sec. 2, slight change.)

SEC. 3. Any distinguished physician of a foreign country or a physician not a resident of this State, who is a member of his own State Association, may become a guest during any annual session upon the invitation of the President or officers of the Society, and may be accorded the privilege of participating in all the scientific work of the session. (Same as old By-laws.)

SEC. 4. The deliberations of the Society shall be governed by parliamentary usage, as contained in Roberts' Rules of Order, when not in conflict with the Constitution and By-laws of the Society. (Same as old By-laws.)

SEC. 5. Officers, members of Standing and Special Committees of the Society, may be removed from office or otherwise disciplined for malfeasance or non-feasance in office, upon written charges made by any member and transmitted to the President. The President may, in his discretion, order a trial upon said charges by the Council or a Committee thereof and in the event of such trial, the accused shall be given at least ten days' notice of such charges and have full opportunity to defend the same, but no such officer or member of the committee shall be removed or otherwise disciplined except by a two-thirds vote of the Council. In case any such officer or member of the committee shall be removed, he may appeal from the decision of the said Council to the House of Delegates, but pending the determination of such appeal, he shall not exercise the functions of his office. (New.)

CHAPTER XII.

SEC. 1. The seal of the Society shall be as follows:



CHAPTER XIII.

AMENDMENTS.

SEC. 1. Amendments to these By-laws, except such as are obligatory by law, can be made only at an annual meeting of the House of Delegates.

SEC. 2. Notice of the proposed amendment shall be given at a previous annual meeting of the House of Delegates, or to the Council and before the same can be acted upon, it shall be published once before the annual meeting in the official bulletin or journal of the Society or sent, when so ordered by the House of Delegates to each component county medical society at least two months before the meeting, at which time final action shall be taken thereon.

SEC. 3. The affirmative vote of two-thirds of the delegates present and voting shall be necessary for adoption.

SEC. 4. Amendments made necessary by law shall be made either by the Council or House of Delegates whenever such necessity exists.

COMMITTEE ON PRIZE ESSAYS

The Committee on Prize Essays takes pleasure in once more drawing the attention of the members of the Medical Society of the State of New York to the Merritt H. Cash Prize and the Lucien Howe Prize, \$100 each, which will be open for competition at the next annual meeting of the State Society, which will be held in Albany on April 17, 1922.

The Lucien Howe Prize will be awarded for the best original contribution to the knowledge of surgery, preferably ophthalmology, and is not limited to the members of the State Society, any physician being at liberty to compete for it.

The Merritt H. Cash Prize will be awarded for the best original essay on medical or surgical subjects and is only open to members of the Medical Society of the State of New York.

The essay shall be typewritten or printed, and the only means of identification of the author shall be a motto or other device. It shall be accompanied by a sealed envelope, having on the outside the same motto or device, and containing the name and address of the writer. Essays must be sent to the chairman of the Committee, Dr. Albert Vander Veer, 28 Eagle Street, Albany, N. Y., not later than the 1st of April, 1922.

A. VANDER VEER, M.D., Albany.

EDWARD D. FISHER, M.D., New York.

CHARLES G. STOCKTON, M.D., Buffalo.

County Societies

MEDICAL SOCIETY OF TOMPKINS COUNTY

ANNUAL MEETING, DECEMBER 20, 1921.

The meeting was called to order by the president, Dr. E. L. Bull.

The minutes of the November meeting were read and approved as read.

The minutes of the November meeting of the Comitia Minora were read for the information of the Society, being the report of the nominations made by the Comitia for officers of the Society for the ensuing year.

The President announced that, there being no objection, the voting would be by one ballot on which would be placed the names of all officers voted for, Drs. J. W. Judd and W. B. Holton were appointed tellers. The polls were declared open and the following officers were elected for the ensuing year: President, John E. Wattenberg, M.D., Ithaca; Vice-President, Minor McDaniels, M.D., Ithaca; Secretary, Wilber G. Fish, M.D., Ithaca; Treasurer, J. Wesley Judd, M.D., Ithaca; Censors, L. T. Genung, M.D., Ithaca; Luzerne Coville, M.D., Ithaca; Esther E. Parker, M.D., Ithaca; Walter B. Holton, M.D., Ithaca; Hardy T. Rhodes, M.D., Ithaca; Delegate, Luzerne Coville, M.D., Ithaca (for two years); Alternate, Willets Wilson, M.D., Ithaca.

The Secretary presented his annual report which was accepted and directed to be spread upon the minutes.

The Treasurer presented his annual report which was read and accepted.

The Legislative Committee presented their annual report which showed that the Society was active in legislative matters affecting the practice of medicine and the health and welfare of the public.

The Committee on Public Health presented their annual report showing that the public health of the community is well guarded.

The Special Committee appointed to consider the interests of the Society and its members in certain pending legislation affecting industrial medicine, made their report, recommending that the Society put itself on record as being opposed to such legislation.

The President in opening his Annual Address stated that the first Medical Society in Tompkins County was organized in the year 1818, that, though working at various times under different names it had for several years been known as "The Medical Society of Tompkins County," and that actually the Society is now 103 years old, vigorous and still growing, the remaining portion of the address was devoted to the duties of Medical Societies with relation to legislative matters pertaining to public health and the practice of medicine.

Professor J. S. Shearer of Cornell presented a paper on "Some Recent Developments in X-ray Therapy."

THE MEDICAL SOCIETY OF THE COUNTY OF CAYUGA

ANNUAL MEETING, AUBURN, DECEMBER 1, 1921.

The Annual Meeting was called to order at 7:30 P. M., in the parlors of the Woman's Union, with an attendance of sixty-two members and guests. The President Dr. Coe in the Chair.

The following officers were placed in nomination for the ensuing year: President, L. D. Snow; Vice-President, J. L. Wiley; Secretary, L. A. Treat; Treasurer, F. A. Lewis; Censors, W. H. Coe, Chairman, N. B. Ford, R. R. McCully, L. B. Sisson, F. W. St. John.

After an adjournment for dinner the business session was resumed.

The Secretary read his annual report which was approved as read.

The Treasurer read his annual report. Drs. Swayze and Armstrong were appointed an auditing committee to go over the accounts, which were later pronounced correct.

Dr. H. S. Bull spoke of the deficit in the society's treasury and made the suggestion that the dues be raised to \$10, \$5 for the State and \$5 for the County. Carried unanimously.

Election of officers then took place with Dr. Davenport moving that the Secretary cast a ballot for the slate as printed above, including: Delegates to the State Society, H. S. Bull; Alternates, R. F. Johnson, F. A. Bennett.

Dr. Beers brought up the matter of the Wheeler prize essay fund of \$300 which has been left in the bank for a number of years. He made a motion that the President appoint a member to take the place of the late Dr. Buckland, and that the Committee then present a plan to the Society for the use of the money. Dr. Beers called attention to the fact that this would be timely, owing to the depleted treasury. President Coe appointed Dr. Sincerbeaux to fill Dr. Buckland's place.

Rev. Harold N. Geistweit, pastor of the First Baptist Church was the guest of the evening and gave a talk on music.

The Retiring President, Dr. Coe, gave an address on "Some New Features in the Differential Diagnosis of the Acute Abdomen."

During the latter part of the dinner popular songs were sung with Dr. Bull as song leader.

BRONX COUNTY MEDICAL SOCIETY

REGULAR MEETING, NOVEMBER 16, 1921.

The following Resolutions and Recommendations were unanimously adopted:

Resolved, That we protest against the abolition of the Poor Clinic by Cornell University and against the entrance of the University into commercial medicine for a profit.

That the establishment of pay clinics by a University is inimical to the best interests of the public at large and of the medical profession in particular because such clinics are in direct competition with the physicians who practise in the immediate and remote vicinity.

That the offer of co-operation by the University with the general practitioner is a blind to beguile the latter to refer cases to them.

That we condemn the conduct of the physicians who permitted their names and their positions to be used for such crass newspaper publicity as the advance announcement contained.

That such advertisement is distinctly adverse to the best actions of Medical Men and to the Code of Ethics as established by the American Medical Association.

That we recognize that these very men will not and cannot offer their services to the patient, but will merely act in an advisory capacity far from the clinic rooms.

That for all the above reasons we recommend that the respective County Societies to which these men belong and under whose jurisdiction Cornell University Medical School exists shall take proper and fitting action to reprimand these men and the University, and furthermore shall recommend to its members that they do not accept positions in a Dispensary that works to the economic detriment of their brethren.

MEDICAL SOCIETY OF THE COUNTY OF ROCKLAND,

ANNUAL MEETING AND BANQUET, NEW CITY,
DECEMBER 7, 1921.

The meeting was called to order with an attendance of thirty-six members and guests.

The following officers were elected for the year 1922:

President, H. C. Storrs, Thiells; Vice-President, R. O. Clock, Pearl River; Secretary, R. O. Clock, Pearl River; Treasurer, Dean Miltimore, Nyack. Censors: R. R. Felter, Chairman, Pearl River; M. J. Sanford, Suffern; Ralph DeBaun, Congers; M. J. Sullivan, Haverstraw; John Sengstacken, Stony Point. Delegate to State Society, C. D. Kline, Nyack (for two years); Alternate, G. A. Leitner, Piermont.

Dr. Wilson, who acted as "mine host," provided a most appetizing menu, which was enjoyed by the largest number that ever attended the annual banquet. Dr. Gibb, President of the Society, acted as master of ceremonies. Following the dinner a most enjoyable entertainment was given, which included humorous stories told by Mr. Lawrence Sharkey, known in vaudeville as the "Irish Senator."

WAYNE COUNTY MEDICAL SOCIETY

ANNUAL MEETING, DECEMBER 13, 1921, LYONS, N. Y.

The meeting called to order at 11.30 A. M. in the courthouse with an attendance of nineteen members and three visitors. President Dr. C. H. Bennett in the Chair.

The minutes of the preceding meeting were read and approved as read.

The following officers were elected for the ensuing year: President, J. R. Sanford, Newark; Vice-President, R. S. Carr, Williamson; Secretary-Treasurer, L. H. Smith, Palmyra; Censors, H. L. Chase, Palmyra; M. E. Carmer, Lyons; D. F. Johnson, Newark; Delegate to State Society, E. A. Nevin, Newark; Alternate, Ralph Sheldon, Lyons.

Two new members were elected and one member reinstated.

The Secretary-Treasurer read the following reports: The Wayne County Medical Society has a membership of thirty-four, being a gain of three: one by affiliation; one by reinstatement and one by application. There have been four regular and two special meetings with an average attendance of seventeen.

Financial report: Cash on hand December 14, 1920, \$31.17; received from dues and fees \$255.00; total \$286.17. Disbursements for dues to the State Society and incidental expenses \$230.20, leaving a balance of \$55.97 of which \$34.00 is due the State Society.

The President-elect appointed the following: Committees on Legislation: E. A. Nevin, George S. Allen, Ralph Sheldon; on Public Health: M. E. Carmer, G. D. York, John Van Doorn, R. A. Reeves, J. F. Myres.

The Chairman of the special committee on illegal practitioners made a very full report. Moved, second and carried that the report be accepted and the committee be continued.

J. C. Carmer read a communication from the chairman of the Legislative Committee of the State Society giving warning of the probability of the introduction in the state legislature of the Health Insurance Bill, the Re-registration Bill, the Chiropractic Bill and the Health Centers Bill.

The following amendment having been introduced at the last annual meeting was read and adopted:

Resolved, That the By-laws be amended to read (Chapter X, section 1) each member shall pay annually the sum of two dollars.

SCIENTIFIC SESSION

"Atypical Surgical Cases," John C. Carmer, M.D., Lyons.

"History of Medical Progress," H. L. Chase, M.D., Palmyra.

"Fracture of the Patella, with a Demonstration," Edwin W. York, M.D., Newark.

"Goitre." General Discussion.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

THE SUBMUCOUS RESECTION OF THE NASAL SEPTUM.

By W. MEDDAUGH DUNNING, M.D., Consulting Otolgologist, Fordham and Manhattan State Hospitals; Consulting Laryngologist, Ossining City and Alexander Linn Hospital, Sussex, N. J.; Asst. Surgeon Manhattan Eye and Ear Hospital; Surgeon Bronx Eye and Ear Infirmary. Surgery Publishing Company, New York, November, 1921.

CLINICAL DIAGNOSIS, A TEXT-BOOK OF CLINICAL MICROSCOPY AND CLINICAL CHEMISTRY FOR MEDICAL STUDENTS, LABORATORY WORKERS, AND PRACTITIONERS OF MEDICINE. By CHARLES PHILLIPS EMERSON, A.B., M.D. Associate in Medicine The Johns Hopkins University; Professor Medicine Indiana University School of Medicine. 156 Illustrations, Fifth Edition Entirely Rewritten and Reset. J. B. Lippincott Company, Philadelphia and London.

EPIDEMIOLOGY AND PUBLIC HEALTH, A TEXT AND REFERENCE BOOK FOR PHYSICIANS, MEDICAL STUDENTS AND HEALTH WORKERS, IN THREE VOLUMES. By C. VAUGHAN, M.D., LL.D., Chairman of the Division Medical Science, National Research Council; Emeritus Professor, Hygiene, University of Michigan. Assisted by Henry F. Vaughan, M.S., Dr.P.H., Commissioner of Health, City of Detroit, and George T. Palmer, M.S., Dr.P.H., Epidemiologist for the Department of Health of the City of Detroit. Vol. I, Respiratory Infections. C. V. Mosby Company, St. Louis, 1922. \$9.00 is the price of book.

PRACTICE OF MEDICINE. By HUGHES DAYTON, M.D. Fourth Revised Edition. 12mo. of 328 pages. Philadelphia and New York, Lea and Febiger, 1921. \$2.25.

A FORM OF RECORD FOR HOSPITAL SOCIAL WORK, INCLUDING SUGGESTIONS ON ORGANIZATION. By GERTRUDE L. FARMER, Directory, Department of Social Work of the Boston City Hospital, Boston, Mass. J. B. Lippincott Company, Philadelphia, London & Montreal. Price, \$1.50.

THE MEDICAL CLINICS OF NORTH AMERICA. Volume V, Number III (The Philadelphia Number, November, 1921). Octavo, 362 pages, 44 illustrations. Philadelphia and London: W. B. Saunders Co., 1921. Published bi-monthly. Price per clinic year: Paper, \$12.00. Cloth, \$16.00.

PITFALLS. By A. J. CAFFREY, M.D., Instructor in Physiology at Milwaukee Medical College from 1901 to 1910. Assistant Professor of Medicine at Marquette University School of Medicine from 1913 to 1920. The Gorham Press, Richard G. Badger, Boston, Mass.

THE EVOLUTION OF MODERN MEDICINE. A Series of Lectures Delivered at Yale University on the Silliman Foundation in April, 1913. By SIR WILLIAM OSLER, BART, M.D., F.R.S. New Haven, Yale University Press, 1921.

HOSPITAL OF THE PROTESTANT EPISCOPAL CHURCH IN PHILADELPHIA. Medical and Surgical Reports of the Episcopal Hospital, Volume V. Press of William J. Dornan, 1920.

Book Reviews

PHYSICAL DIAGNOSIS. By W. D. ROSE, M.D., Second Edition. 309 illustrations. C. V. Mosby Co., St. Louis, 1921. \$8.50.

This volume has been largely rewritten and supplemented with recent advances. It is divided into four parts: Thorax; Abdomen; Head, Neck and Extremi-

ties; and Nervous System. Each part affiliates the anatomy, pathology, and the physical signs, together with a short description of the physical principles involved, aiding the interpretation of these signs. The accompanying illustrations are both diagrammatic, and representations of pathological specimens. A brief chapter is devoted to radiographic examinations. The book is conservative, and it is well printed throughout, with admirable paragraphing in larger type print of the various physical conditions. Both the physician and the under-graduate desiring a quick review or reference, either of the normal or abnormal, will find it here, treated in a satisfactory, complete and condensed form.

A. T. MAYS.

THE SURGICAL CLINICS OF NORTH AMERICA (Issued Serially, one number every other month). Volume I, Number 3. By Boston Surgeons. 345 pages, with 159 illustrations. Per clinic year (February, 1921, to December, 1921).

In this number of the Clinics some of the more important hospitals of Boston are represented by excellent discussions on a great variety of surgical conditions. Among them one might call attention to "Radium treatment of menorrhagia of the young," "Treatment of congenital dislocation of the hip," "The Syme Amputation," "Tendon surgery" and others of equal interest. The Hub is to be congratulated upon its first output for this series.

Volume I, Number 4. Chicago Number.

This number has given many of the surgeons and hospitals of Chicago an opportunity to display a most interesting series of clinical cases. "Ligation of inferior thyroid artery and vein," "Acute appendicitis in pregnancy at term," "Ileocolic intussusception" and "Syphilis of the stomach" are some of the subjects discussed in a most instructive way. The Clinics have thus far maintained a high standard, setting a distinguished goal for other ambitious cities. W. B. Saunders Co., Phila. and London. Paper, \$12 net; cloth, \$16 net.

ORGANIC DEPENDENCE AND DISEASE: THEIR ORIGIN AND SIGNIFICANCE. By JOHN M. CLARKE, D.Sc., Colgate, Chicago, Princeton; LL.D., Amherst, Johns Hopkins; member National Academy Sciences. Yale University Press, New Haven, Conn., Humphrey Milford, Oxford University Press, London. 1921.

In this essay, the author presents evidence of organic dependence and disease among the fossil remains of the paleozoic era. He has found many examples of symbiosis, mutualism and parasitism among these earliest, long extinct inhabitants of the earth. Using Huxley's broad definition of disease as "a perturbation of normal activities," he postulates that organic dependence, leading to disease, has had a profound influence upon races as well as individuals; that it has caused the extinction of many and markedly modified others. Perhaps the author did not intend to moralize but the moral is, nevertheless, quite obviously "dependence is death."

E. B. SMITH.

INFLUENZA: AN EPIDEMIOLOGIC STUDY. By WARREN T. VAUGHAN, M.D. (American Journal of Hygiene, Monographic Series, No. I, July, 1921). Baltimore, 1921.

In this work the author presents a most complete study of influenza, correlating the past history of the disease with the recent epidemic. He is logical in the manner of his presentation and his final conclusions as to methods of prevention of the disease are scientifically conservative. The entire work shows that it has been prepared with extreme care and only after an exhaustive study of the subject. It will undoubtedly be of great interest to all those interested in influenza and a study of the work is recommended to all medical writers as an example of the manner in which a medical article should be prepared.

E. H. M.

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TUBERCULOSIS OF THE PERICARDIUM.*

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TUBERCULOSIS is the cause of much of the disease seen in the serous sacs of the body; in fact, eliminating the streptococcus, one can say that the tubercle bacillus is the principal bacterial factor in the production of pathological processes in these cavities. The lesion is always secondary to the initial focus which, as a rule, lies in the lymph node system of the thorax, or in the lung. The primary tuberculous lesion can also, as is well known, be situated in the intestine or in the lymphnodes of the mesentery. The four main serous membranes pleura, pericardium, meninges and peritoneum are not involved equally, as the incidence of tuberculosis of the pleura and of the meninges would indicate. This difference is probably due to the fact that the usual primary focus of this infection lies in the lung or in the lymphnodes of the thorax, and consequently a more intimate relation of these foci exists to the pleura than to the other serous membranes. There seems to be also considerable difference in the ability of these sacs to resist infection. Meningeal tuberculosis, for example, most certainly has a high mortality, and one wonders as to whether there exist less virulent forms of this disease which actually heal, and which we do not diagnose clinically, or recognize even at autopsy, as an end result of a tuberculous process. Old fibrous adhesions of the meninges, although of a much finer texture than those seen in the other serous sacs, are by no means such unusual findings at the base of the brain at autopsy. Excepting lues, one would hesitate to express an opinion as to their origin; but on general principles they could be classed as the healed result of an inflammatory process. This is the interpretation we give to similar findings in the peritoneum and in the pleura. If one is to accept the opinion that most of the fibrous adhesions found at autopsy in the pleural sac are evidence of a healed tuberculous process, one might believe that the pleura had an unusual ability to at least be able to resist, or to limit the action of the

tubercle bacillus. However, it is more in keeping with the facts to indicate that the usual mode of infection of the pleura is different from that of the meninges, where the infection is probably always blood borne, and consequently is more diffuse in distribution. Pleural infection, when blood borne, may be just as widespread and possibly almost as serious; but it must be a very common occurrence in the pleura for the infection to develop in a localized manner opposite an active lesion in the lung, lying close to the surface. This is what occurs at the apex of the lung. Much, therefore, of fibrous pleuritis, which for the present we shall consider as tuberculous, probably commenced and ended as a local process, a sequence of events not by any means as common in the other serous sac. The apparent resistance of the pleura, therefore, is likely by no means real.

The pericardium, situated as it is in proximity to the common site of primary foci of tuberculosis in the thorax, does not present evidences of this disease as often as one would expect. The finding of a typical tuberculous lesion in the pericardium at autopsy is not rare, but on the other hand, it is by no means common; while the demonstration of a recognizable clinical tuberculosis of this sac is, to say the least, infrequent. On the other hand, there is little doubt that many of the clinical types of the disease are not diagnosed, and from the pathological aspect there is a considerable group of old healed fibrous lesions found at autopsy which are at times not unlikely tuberculous, but as to their exact nature, it is a most difficult matter on which to speak positively. I wish to refer to the forms of tuberculosis of the pericardium that are met with at the autopsy table, and to a type of this disease which it has been my experience to see from the clinical side. Undoubtedly, both the pathological and clinical observations are familiar to you as accurate descriptions have previously been made. Osler in 1893 described seventeen cases which he had observed either in the autopsy room or in the wards. No essential facts have been added to his observations, although, later, Wells carefully analyzed the pathological features of this condition in greater detail.

There may be considerable variation in the gross appearance of tuberculosis of the pericar-

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dium. A diffuse scattering of miliary tubercles over the pericardial surfaces is sometimes seen; but more often the inflammation, in addition to the presence of tubercles, presents also a reaction characterized by the development of fibrin, with or without fluid, which may be clear, hæmorrhagic or purulent. The amount of fibrin may be excessive, completely filling the sac, forming a layer from two to four cm. in thickness. The sero-fibrinous type of this exudative reaction is probably the more common. The exudate develops on the surface of the tuberculous base, and not infrequently to outward appearances the tuberculous character is entirely submerged, and only by scraping the surface, which removes the fibrin, does one see the mass of tubercles lying in the deeper layers of the exudate. In some instances, however, in this exudate caseation, as a rule in the form of small localized areas, is observed. We have never seen the large masses of caseous material which have been described by others. One rarely sees a more typical picture of the so-called bread and butter heart than in this sero-fibrinous infection. One finds also a typical tuberculous exudate which seems to be more plastic in type, so that the cavity of the sac is obliterated, and small areas of caseation may be enclosed here and there in the meshes of the fibroblastic tissue. This type possibly indicates a degree of healing between those we have just referred to, and the next group that is to be considered; but at this stage these obliterative lesions present characteristic histological pictures of tuberculosis. It is a wise rule to section all the inflammatory lesions of the pericardium. The amount of fluid present in the sac varies considerably. There are cases on record where three to four litres of fluid have been found in the sac at autopsy, while during life one to two litres have been aspirated on single occasions.

One can, however, by no means include all of the lesions produced by the tubercle bacillus in the pericardium in the above mentioned types, because there is a large group called the adherent or obliterative pericarditis, in which undoubtedly a certain number represent the healed stage of a tuberculous process. There is a difference of opinion as to the proper interpretation of this condition. Some regard the lesion as always being the end result of tuberculosis. This, however, is not true; but that a certain number represent a healed tuberculous pericarditis, we are ready to admit. Some years ago, Wells studied this problem from a large series of autopsies, and he came to the conclusion that in only a limited number of the adherent forms of pericarditis was the etiological factor to be considered as tuberculosis. Norris, in a similar study, however, was inclined to believe that tuberculosis accounted for a large number of these adherent lesions. In arriving at a true estimate as to the

relation of adherent pericarditis to tuberculosis, one must keep in mind that this fibrous lesion may be the end result of any form of acute pericarditis. Therefore, the diseases, which are prone to be associated with or followed by an acute inflammation of the pericardium, should be considered as etiological factors. The group of infections, to which one would here refer, are acute rheumatic fever, chorea, and tonsillitis; while pneumonia also may be considered in the same light. These infections produce more acute pericardial inflammation than does tuberculosis, and it is, therefore, our opinion that more of the fibrous adherent forms take origin in the acute fibrinous infections of the pericardium than in the tuberculous types. When there is also present an endocardial or myocardial disease with an accompanying hypertrophy, the rheumatic origin of the infection is fairly definite. We have seen, however, some cardiac hypertrophy with a tuberculous pericarditis. There will still remain a certain number of adherent forms of pericarditis in which one is unable to develop any history of rheumatic fever, pneumonia or other infections, and where a post-mortem finding of an isolated calcareous or caseous lymphnode or nodule at the apex of lung is the only demonstrable sign of recognizable tuberculosis. These adhesions present nothing but fibrous tissue so that the diagnosis of tuberculosis, if made, is by inference rather than by histological demonstration. Is it not possible that some mild infections of the rheumatic group might not be quite able to reproduce exactly the same thing? We certainly often see, clinically, acute pericarditis where apparently the endo and myocardium are not involved, make the usual recovery. In such instances if a moderate amount of fibrin were present there is no special reason why in the healing process, occasionally in place of the normal complete absorption, organization by fibrous tissue change may not occur, with an adherent pericardium as the result. It is generally supposed that the old fibrous adhesions in the pleura represent tuberculosis. This is certainly true for apical lesions, but what becomes of all of the pleurisy that one observes associated with acute pulmonary infection; surely some fibrous adhesions of the pleura, particularly those at the base are not tuberculous, so while we would freely admit that the spontaneous healing of a tuberculous process in the pericardium occurs with a resultant adherent pericarditis, it is a difficult matter to actually be sure how often this fortunate sequence of events takes place.

It seems rather strange that calcification, a cardinal sign of healed tuberculosis, when it occurs in the pericardium very rarely means this disease. This is the conclusion drawn from the work of those who have studied the subject. Calcification of the pericardium is a very un-

usual finding, as indicated by the report of Jones of fifty-eight cases in literature up to 1901. Wells had four cases; but none of them was associated with tuberculosis. Calvert and Pigg reported one following a suppurative pericarditis, and Wells considered his to be due to the same condition. The calcification develops in inspissated purulent material, and although we have noted it in the pleura on several occasions, we have never encountered an example of it in the pericardium. Calcification is of interest here more from the pathological point of view. It tends to occur later in life, as the average age of 48.4 as given by Jones, would indicate. Although, as a rule, it does not mean tuberculosis, still tuberculosis did appear to be responsible for one or two of the fifty-eight cases mentioned.

The tubercle bacillus reaches the pericardial sac most commonly by the lymphatic stream from tuberculous lymphnodes which lie in apposition to the parietal pericardium. The infection also may come by direct extension of a tuberculous process from the pleura and adherent lung, mediastinal lymphnodes and vertebræ. It is believed, although difficult to prove, that a softened tuberculous lymphnode may actually rupture, and the contents discharge directly into the sac. Finally, the tubercle bacillus may be carried to the pericardium by the blood stream. According to Wells, in explaining the tuberculous nature of some of the adhesive cases of pericarditis, the adhesions may develop by toxins liberated from an adjacent tuberculous focus without going through the stage of tubercle formation.

It might be well at this time to review some of the data that has been noted by various observers on the incidence of tuberculous pericarditis as found at the autopsy table. Wells studied 1,048 autopsies and in 10 of these he was able to demonstrate a tuberculous pericarditis which had lesions characteristic of a tuberculous process. In 364 of this number, some lesions of tuberculosis were shown, and of them 208 gave evidence of being in an active stage. In 26 instances of miliary tuberculosis the involvement of the pericardium occurred twice, and in 84 cases of miliary tuberculosis and a very active local process, the pericardium was involved but three times. It is evident, therefore, that in only 5 per cent of active tuberculosis does a pericardial lesion develop. He further showed that there were in all 128 cases presenting disease of the pericardium, so that with the 10 cases of tuberculosis, it represented a percentage of 8 of the total number. Of 128, 57 were chronic and 71 were acute lesions. Of the 57, 8 were of rheumatic origin, 6 were tuberculous and 43 were of doubtful origin. On analyzing the 43, 24 represented general adherent pericarditis and in 19 the adhesions were single or partially adherent. Thirteen out of this number, Wells regards, were adherent

forms of a tuberculous pericarditis. There were, therefore, 30 other cases showing fibrous adhesions in the pericardium which were not tuberculous, and of this number at least 11 were of the adherent obliterative type. Norris bases his facts on the study of 7,219 autopsies. In this number there were 1,780 tuberculous cases, and 82 of them showed a tuberculous pericarditis or 2.4 per cent. Of the 82, 32 demonstrated the histological lesion of tuberculosis; the other 50, however, did not show tubercles but were classed as the adherent tuberculous form of pericarditis. Norris had previously eliminated, as far as possible, all the adherent forms of pericarditis due to other causes. In 1,000 autopsies recorded by Osler, in which 275 presented evidence of tuberculosis, there were seven cases of tuberculous pericarditis. Riesman collected 60 cases of pericarditis in 778 autopsies and of this number 20 were completely obliterated. He believes that many of these were tuberculous.

I have recently had occasion to analyze 1,000 records from Dr. Oskar Klotz's department at the University of Pittsburgh, with reference to the subject of pericarditis in general. My findings are in close agreement with those just given. There were 10 cases that were frankly tuberculous. Nine of these occurred in the male and one in the female. In the first decade of life there were no cases, in the second two, in the third three, in the fourth, two, in the fifth, two, and in the sixth decade one. Upon the debatable tuberculous cases we have the following data to present. There were 40 instances of chronic fibrous adhesions in the pericardial sac; 23 of these were totally adherent, 17 were partially. Three of the first group were undoubtedly tuberculous, but of the remainder we are of the impression that in not more than 5 is the probability of tuberculosis to be considered. Of our chronic obliterative forms, therefore, 8 out of 23 would be, we believe, a good estimate. What is true of the complete development of adhesions in the pericardial sac is probably also true of the partial, and by inference the relative number of tuberculous cases among them would probably be the same.

From the facts known, and from clinical experience there is definite evidence to indicate that spontaneous healing of a tuberculous process in the pericardium undoubtedly occurs, possibly more often than we imagine. These healed lesions, however, give us no idea as to the severity of the original process. It might well be that the virulence of this infection in the pericardium varies widely, and these spontaneous cures represent mild clinical forms of the disease, not the clinical form to which I wish later briefly to refer. In one of our cases we were unable to locate the primary focus; but in all probability the mediastinal lymphnode had lost its identity in the tuberculous mass of the pericardial wall.

Riesman's case was of this type. Our material also indicated that the development of the lesion in the pericardium appears to have little or no relation to the extent of a tuberculous process elsewhere in the body. It is somewhat surprising to find but three instances of tuberculous pericarditis in 23 cases of general miliary tuberculosis. The development of a tuberculous pericarditis as a part of a general serositis in a miliary infection does not seem to be borne out by Wells' or my own figures. In 37 cases dying of pulmonary tuberculosis in only 5 did we find an involvement of the pericardium.

Having reviewed the pathological side of tuberculous pericarditis, it might be well to speak of this process from its clinical aspect, because there are certain differences. The disease is recognized less frequently at the bedside than at the autopsy table. It is known that the diagnosis of adherent pericarditis is extremely difficult, as the signs of this condition may be either very difficult to interpret, or else absent. Therefore, it is but natural that many of the chronic healed forms of this infection are recognized only at the post-mortem examination. When, however, this disease is observed in the more acute exudative stage the problem in diagnosis is not so much one of difficulty in recognizing the pericarditis as in differentiating pericarditis of tuberculous or other infectious origin. It is this acute fibrinous or sero-fibrinous tuberculous pericarditis to which we wish to call your attention. This is probably the only clinical form of the disease that may be recognized, as it is an entity in the same way as the well known clinical type of tuberculosis of the peritoneum.

I have been able to follow to the autopsy table two cases of tuberculous pericarditis which occurred on my service. The history, physical signs, and course of these cases compared in general with the descriptions given by Osler many years ago. At the onset, and in the early part of the illness this form of tuberculous pericarditis presents the same picture as one sees in the acute fibrinous or sero-fibrinous infections following the rheumatic fever group of diseases. Pain may or may not be present. When the illness commences suddenly pain is often associated with dyspnoea and cyanosis and later followed by the development of a pericardial friction sound. The increase in the cardiac dullness is often very pronounced. If the fluid develops slowly there may be very little apparent discomfort from the large quantity which on certain occasions has been known to amount to 1 to 2 litres. All of the above signs, at this stage in the disease are quite compatible with a pericarditis of a non-tuberculous nature. It appears to be of considerable value in diagnosis to have the infection persist beyond the period when it is usual for the ordinary form of acute pericarditis to subside. This

lengthened duration of the disease is a point of diagnostic value. During the prolonged course, which may be for a period of two to four months, one may recognize the pericardial rub often widely distributed for an unusually long period of time. Whereas, the rub in acute pericarditis is often fleeting, the friction sound in tuberculous pericarditis may be very prolonged. The cases that I have seen have had but little discomfort. The pulse throughout is rapid, respirations somewhat increased, and the temperature is of a tuberculous type. The association of an active lesion in the lung is not necessary, although the development of a lesion at the apices during the course of the disease is a confirmatory point in diagnosis. As the lymphnodes of the mediastinum bear such an intimate relation to this disease an X-ray plate of the chest is at times of value, depending a good deal upon the situation of the enlarged tuberculous nodes. In some plates, nothing but the massive cardiac shadow is evident and little information can be obtained regarding the condition of the lymphnodes of the mediastinum. The pericardial sac in this infection enlarges very often to an enormous extent, in fact 4 litres of fluid have been found at autopsy in this condition. With the development of increasing fibrin and fluid one may follow very easily the variation in the intensity of heart sounds from the normal at the beginning to where they become almost obliterated. This sign, of course, is not of differential diagnostic value, although, it is often well demonstrated in this disease.

The course of the disease is to recovery in a certain percentage, but in the greater number the condition is fatal. The autopsy table presents evidences that spontaneous healing does occur. Thayer has described a very carefully observed case of tuberculous pericarditis with an onset and course as we have just outlined. This report of Thayer's is of very considerable interest as he saw the case from the beginning, when it appeared as an acute sero-fibrinous pericarditis but which later was recognized as a tuberculous infection. Finally after three years the process completely healed and at this time he was able to diagnose an adherent pericarditis. A case of this type proves beyond doubt that some adherent pericardial sacs do represent the end result of a tuberculous inflammation. However, the majority of tuberculous infections which present clinical pictures that can be recognized probably die. Certainly, it is my impression that the tuberculous form of pericarditis which produces a recognizable clinical entity is a disease with a high mortality.

There is one point which should be mentioned, particularly as it refers to treatment,—the pericardial puncture. It has the value almost of an emergency measure in relieving the heart and

lungs particularly in cases where the fluid has developed suddenly. Thayer suggests that cyanosis, dyspnoea, and irregular pulse be considered as indications for puncture of the pericardium when fluid is present. In the more chronic effusions the removal of fluid may be done for somewhat different reasons, possibly the withdrawal of fluid in tuberculous cases (in Thayer's case, 1200 cc. was removed) tends to help absorption and prevent reaccumulation. We believe an analagous condition occurs in the pleura and in the peritoneum, and some have gone so far as to say that repeated drainage may occasionally induce recovery in tuberculous meningitis. One would, however, suggest that we keep in mind that certain of these pericardial sacs of tuberculous origin when opened present an enormous amount of fibrin with very little fluid, and consequently a pericardial puncture would, of necessity, give a dry tap.

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INFILTRATION AND INFILTRATION-BLOCK vs. REGIONAL ANESTHESIA IN ABDOMINAL WORK.*

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THERE is no denying the fact that local anesthesia has many advantages over general anesthesia in cases in which it can be successfully used. It is also evident that this fact is becoming apparent to an increasing number of surgeons. This is especially true of the younger group of men, but many of the older surgeons also are manifesting an increasing tolerance to this trend. Local anesthesia in its early days was confined to the use of the dangerous drug, cocaine, the toxicity of which necessitated the use of comparatively small doses of a weak solution. The methods of Schleich and Reclus were for this reason slow of adoption.

The advent of regional anesthesia in its modern sense took place, approximately, during the period in which safer drugs than cocaine, especially novocain, were discovered.

A limited number of surgeons have perfected themselves in regional methods and have shown the possibility of inducing analgesia with the minimum amount of the drug employed. During the early part of the present century these methods were developed to a marked degree. During the same period the art of administering general anesthesia had not reached the refinements shown today. While the regional methods required a prolonged course of training and were comparatively difficult of application their increased safety made this outlay of energy seem, to a considerable number of surgeons, entirely justifiable. During the last decade, however, the improved methods of producing general narcosis, with a reduction of the attendant dangers and disagreeableness, in addition to the difficulty of mastering the regional methods, have in the vast majority of clinics kept the balance in favor of general anesthesia. The dangers of general anesthesia, immediate and remote, combined with the unpleasantness and other disagreeable features, despite the improvements referred to, still leave much to be desired, but surgeons have realized that local anesthesia in order to compete with general as it is used today must be administered by methods which are less irksome both to the surgeon and to the patient, methods less difficult to acquire than those demanded by regional anesthesia. It has been apparent for a number of years that unless such methods could be developed and established the use of local anesthesia, notwithstanding its great merit, must remain limited and in the hands of a few highly trained specialists. In fact, this is the case today, excepting where regional anesthesia has been replaced by the more simple infiltration or infiltration-block.

Several factors have served to make possible the development of more simple methods of inducing local anesthesia and these may be considered responsible to a large degree for the broadening of its field. Foremost among these is the realization that novocain and some of the other local anesthetics possess a high degree of safety even when used in large amounts, provided the solutions are sufficiently weak and are safeguarded by the use of adrenalin. This allows one to obtain the highest potency of the drug used because the solution is brought into contact with the terminal aborizations of the sensory nerves.

Another important phase in the development of more practical methods of inducing local anesthesia is the proof that the infiltration of tissues does not retard nor interfere with healing, notwithstanding the fact that the uninitiated and those who are perhaps overenthusi-

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astic regarding the regional method are still making assertions to the contrary.

In the performance of abdominal operations under local anesthesia one has many factors with which to deal and for the present at least and until patients have been taught that these operations can be performed painlessly under local anesthesia the psychic factor must be reckoned with. The method used for the induction of anesthesia will have much to do with the increase or reduction of the patient's apprehension. We may by a series of maneuvers, each one of which causes the patient but slight irritation, reduce the patient's confidence, which may already have been a minus quantity. On the other hand the opposite effect may be produced and confidence rapidly established by the use of methods which are almost without irritating or unpleasant effects. The contact of a needle point with a sensory nerve, while not exceedingly painful, is oftentimes the cause of complaint from an apprehensive patient. Numerous painful needle pricks which must occur when perfect regional anesthesia is accomplished do not serve to reduce the handicap under which the surgeon often finds himself. We have found, for instance, that the psychic element is much more prominent and that patients are less easily controlled when time consuming methods, especially those which demand that the patient change positions upon the operating table one or more times, are used. We have, indeed, found this one of the most frequent objections to the use of splanchnic and caudal anesthesia, and, unless full co-operation of the patient has been obtained in advance, many of them do not take kindly to these procedures.

In an experience of nearly two thousand abdominal operations performed under local anesthesia I have been impressed with the fact that while the establishment of the anesthesia is important the method of its establishment is equally important and that in the establishment of this anesthesia the end does not justify the means. In other words, that it is almost as important to establish anesthesia painlessly as it is that anesthesia be established. While the stoical minority may submit without complaint to multiple minor painful insults, and while the large middle class may submit with more or less protest, and a certain percentage will not submit without complaint to painful sensations either for the administration of the anesthetic or for the performance of the operation, there can be no question but that the ideal method for all cases must be one in which anesthesia is established with the minimum of discomfort to the patient.

Simplicity, speed, accuracy, minimized labor and the slightest possible disturbance to the patient are the important elements in the induction of local anesthesia in abdominal surgery. Direct infiltration and infiltration-block possess these attributes to a much higher degree than does regional anesthesia. The one real advantage which regional anesthesia can claim is the reduction in the amount of the anesthetic used. That this is an advantage can not be gainsaid, and, yet, if experience counts for anything the simple infiltration of the abdominal wall for the purpose of producing anesthesia is not only a relatively but an absolutely safe procedure. So far as I know there have been no accidents from this cause. Provided the regular infiltration is used or a circumferential block, the dose differs but slightly from the dose necessary for regional blocking as the nerves must be blocked on both sides of the incision, as a rule.

The main objections offered to direct infiltration are:

First: The size of the dose necessary. (This is an objection which I think may be dispensed with for reasons already given above.)

Second: That the use of this method interferes with wound healing, which is absolutely untrue, and

Third: That the infiltration of the tissues obscures to some degree the tissues in the field of operation. This latter objection applies only in the case of hernia and here infiltration-block is to be recommended.

I shall present the method which I consider as ideal for use in abdominal surgery, a method under which I have been able to perform eighty per cent of all the abdominal operations which have come into my hands during the past six years. Patients of all ages have been operated upon by this method, children included, and twilight sleep has been administered only in a small percentage, perhaps less than ten per cent, although preliminary hypodermics have been used, usually one one-hundred-fiftieth of scopolamin and one-fourth of morphin or one-third of pantapon, and, at times long series of cases have been operated upon without the use of preliminary narcotics. Caudal anesthesia has been used in approximately one hundred cases during the last five years where complicated pelvic disease was anticipated, and splanchnic anesthesia, by the anterior route, has been used approximately two hundred times. Approximately ten per cent of our cases were of such a nature that mixed anesthesia would be a necessary adjunct to any method of local anesthesia known to-

day, excepting the intraspinal. In the remaining ten per cent general anesthesia was added either because the patient demanded it or because the anesthesia technic or surgical technic was faulty. In this regard it is interesting to note that with increased experience operations which were formerly thought to be difficult or impossible are now performed routinely under local anesthesia. In other words, we have learned that many of our failures were due to our inability properly to use the method rather than the fact that the work can not be done under this method when properly applied.

The essential points which bring about success, as I analyze them, are as follows:

First: Proper handling of the patient up to the time that the anesthesia is to be introduced. This does not relate especially to the matter of conversation with the patient in relation to local anesthesia. In fact, my feeling is that the less the patient's mind is allowed to dwell upon this subject the better. I refer more especially to the methods used by the attendants. In my clinic my anesthetist, who is a well trained woman, becomes acquainted with and takes the blood pressure of my patients and has a great deal to do with their transportation to the operating room. This insures careful handling, the avoidance of indignities and discomforts, and proper response to inquiries. Comfort upon the operating table and the avoidance of delay, quiet surroundings and a smooth working machine will do much to allay apprehension. It is a well known fact that the apprehension of the patient is at its height at about the time one begins to introduce the anesthetic and for this reason the direct infiltration with the pneumatic injector makes it possible to establish anesthesia with the minimum of discomfort to the patient. The initial wheal should be the only sensation of pain that the patient should have, although the needle point may impinge occasionally upon a large sensory branch in the deeper tissues. As anesthetic solutions have their greatest potency when coming in contact with the smallest fibrils of the sensory nerves we have at once the ideal condition for complete and rapid anesthesia. With the pneumatic injector the solution may be disseminated throughout the area of the incision in less than three minutes in any case and anesthesia is immediate and complete in nearly one hundred per cent of cases. The margin of error is small.

We make the incision between towel pins which elevate the skin thus avoiding the possibility of a combative action on the part of the abdominal wall. Success will show a negative intra-abdominal pressure with all mov-

able viscera falling away from the field of operation, provided this field is made to lie above other fields as may be done by tilting the patient. The force of gravity replaces the time-honored gauze pad driven by the impetus of the surgeon's strong right arm. Sponges are used as a rule only for the purpose of preventing soiling.

In the pelvis the more simple work is preceded by a blocking of the round ligaments and ovarian pedicles. More extensive operations, such as uncomplicated hysterectomies, may be performed under an infiltration across the round and broad ligaments and about the uterine cervix. Complete pelvic anesthesia may be obtained from blocking of the sacral nerves from in front or by the use of caudal anesthesia. Intestinal work, provided there is to be traction upon the mesentery, is preceded by a mesenteric block. In the upper abdomen splanchnic anesthesia is used and is introduced by the anterior method, a modification of that proposed by Kappis. Cholecystectomies, choledochotomies and the most extensive gastric resections may be quite painlessly made under this method. In gastric resections for cancer we have not hesitated to divide three or four ribs in order more easily to approach the cardiac end of the stomach. The liver is not withdrawn from the abdomen in working upon the gall tracts, but is rotated on a transverse axis within the abdominal cavity. There is but one class of gall bladder cases that we have been unable to handle by this method. I refer to the cases where the liver lies high up behind the costal margin. These and the acute abdominal inflammations have given us the most difficulty.

One of the objections frequently made to the use of local anesthesia in abdominal work relates to the impracticability of extending the incision so that the other fields aside from the one in the immediate vicinity of the original incision may be dealt with. While this objection may have some foundation where regional anesthesia has been employed it becomes relatively insignificant when the infiltration method has been used. A realization that the division of the abdominal wall in almost any direction is not objectionable, provided the nerve supply is conserved, and an appreciation of the relative safety of novocain make it possible to meet unexpected problems should they present themselves. With proper equipment a delay of less than two minutes only is necessary, provided an incision is to be extended or even provided the making of a secondary incision is deemed advisable. To illustrate: I operated upon a woman some years ago, in whom the diagnosis was in doubt, the patient

being a deaf mute. The most probable cause of the symptoms was decided to be the appendix, and the gridiron incision was, therefore, made. The appendix was removed, but its appearance failed to present sufficient evidence to account for her symptoms, and the gall bladder and the pelvis were inspected by means of vertical retraction and change of posture. The gall bladder appeared white and thickened, the uterus retroverted and both ovaries were concealed by adhesions. An infiltration was made in the mid-line above the pubis and another in the upper abdomen. The pelvic work was then carried out, the ovaries liberated, the uterus suspended and then, through a third incision the gall bladder was removed. The administration of the anesthesia in this case required seven minutes. The total time required for the operations in the three fields was one hour. While this case is somewhat unusual and open to criticism from the standpoint of preoperative diagnosis, it well illustrates the point that the above mentioned objection to the use of local anesthesia in abdominal work is more imaginary than real.

The objections to regional anesthesia and stereotyped methods as to incisions, etc., in this class of cases are obvious. To illustrate: Anesthesia is administered by the regional method for the removal of a diseased appendix. Upon opening the abdomen it is decided that an exploration of the gall bladder and stomach is advisable. By the use of the infiltration method the incision may be extended upward, or a second incision may be made after a delay of less than five minutes and without disturbing the patient and without rearranging the drapes, while the establishment of regional anesthesia, combined with splanchnic anesthesia by the posterior route, entails a complete change of drapes, a change in the position of the patient, and numerous needle pricks in the sensitive skin which will be tolerated by only a small percentage of patients. In other words, the exploration of the upper abdomen under regional methods indicates at once the advisability of employing general anesthesia, in preference to carrying out these details.

In conclusion, let me repeat that the modern methods of producing general anesthesia place upon local anesthesia a handicap which can only be met by the establishment of a technic for the use of the latter which is simple in its application, easy to acquire and efficient to such a degree that the average surgeon may be able to adapt it to his use with facility and satisfaction.

ANÆSTHESIA: ITS PLACE IN THE PRACTICE OF MEDICINE.*

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AS president of the New York Society of Anæsthetists, it gives me great pleasure to express the thanks and appreciation of the society to the chairman of the Surgical Section for his courtesy in granting the privilege to the members of the New York Society of Anæsthetists of presenting papers on the subject of Anæsthesia. As matters stand at present, the members of the Anæsthetic Society who are members of the various county societies in the state, are *ipso facto* members of the New York State Medical Association. As anæsthetists, however, they are unrecognized and without affiliation. It has always been most perplexing to the writer, why the anæsthetist has had no recognition as such in the State Society. Some medical men have looked upon anæsthesia as of little account, have ridiculed the idea of it as a specialty. Yet if they will take the time to peruse the literature, they will be amazed at the activities of the anæsthetists throughout this country. Several new societies of anæsthesia have been founded, some in cities, some in various sections, being somewhat on a par with the district societies of the State Medical Society. Considerable research work has also been done by anæsthetists, pharmacologists, physiologists and chemists.

This year, in Boston, where the American Anæsthetic Association meets with the American Medical Association, the anæsthetists are honored by being granted a section under "Miscellaneous Topics." There will also be a symposium on Anæsthesia in the section on "Obstetrics and Gynecology" at Boston.

The American Journal of Surgery, which contains a quarterly supplement on anæsthesia, is the official Journal of the anæsthetists. A Year Book of Analgesia and Anæsthesia is soon to appear, being the second number of a work devoted to the review of analgesia and anæsthesia of the past few years. The National Anaesthetic Research Society has been formed to keep up a healthy interest in the subject and to stimulate and encourage research work in anæsthesia. These activities should surely be sufficient evidence that anæsthesia has not been overcome by its own vapors. Neither can it be said that the anæsthetists are suffering from a stage of excitement. It is real proof of the fact that anæsthesia is a live topic and should be accorded the place in medicine it deserves. We cannot say that anæsthesia is in its infancy, for Dr. Seymour

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of Los Angeles, California, in a paper before the Medical Society of the State of California, says: "The administration of anæsthetics is an art, ancient and honorable, signalized, as are few procedures, by both divine sanction and usage, for in the second chapter of Genesis, it is recorded that 'The Lord caused a deep sleep to fall upon Adam and he slept and He took one of his ribs and closed up the flesh thereof.' It is cause for regret that there is no detailed account of this first anæsthetic as regards induction and maintenance, but it is evident that the administration was considered of such importance as not to be entrusted even to the Angel Gabriel—much less an angelic nurse—and of Adam's safe and satisfactory recovery there is abundant record." From this narrative you can readily see that surgery is not as old as anæsthesia, for the anæsthetic must needs be administered before the operation could be performed. As further cause for glory, this year affords the opportunity for anæsthesia to celebrate its diamond jubilee of the first successful administration of ether, in Boston, by Dr. W. T. G. Morton, October 16, 1846. Dr. Morton was recently elected to a position in the Hall of Fame. Truly, it seems that anæsthesia is at last coming into its own.

Several colleges are now recognizing anæsthesia as a major rather than a minor subject and are creating professorships in charge of a department of anæsthesia. While it may seem ludicrous, it is nevertheless an undeniable fact that we so often see physicians, surgeons and operators who try to convince some of their patients that "really, anyone can give the anæsthetic," but when they, or any of their family need anæsthetizing, they are most particular as to who gives that anæsthetic.

It has been said by a surgeon, that he could spoil the best anæsthetic by his rough manipulations. Has this surgeon given thought to the fact that the most skillful surgical operation could be made practically *nil* by the anæsthetist? In a recent article by Dr. James B. Herrick, in the *Journal of A. M. A.*, on "Relation between Specialist and Practitioner," he says, "I wish, at the outset, to advance the proposition that in any discussion of the relation between specialist and general practitioner, there is a third party to consider, namely, the patient." This relationship should also exist between the surgeon and the anæsthetist.

The great fault appears to be at the outset in the interpretation of the word "anæsthetist." The saying, "To give an anæsthetic is one thing, to practice the art of anaesthesia is another," is very true. Many people owe their lives to-day, to the care and skill of the anæsthetist, rather than to the skill of the surgeon. One of the ar-

ticles in a recent resolution sent to the various county societies of the State, by the New York Society of Anæsthetists, reads as follows: "Anæsthesia is concerned in the vast majority of cases far more intimately with the issue of life and death than is the scalpel in the hands of the surgeon. The researches of physicians interested in anæsthesia have revolutionized both the science and art in the last decade by the production of apparatus for and methods of administering anæsthetic agents that have made possible great advances in surgery. And much remains to be done."

It is with great pride that we can point to the fact that in several surgical teams throughout the country, the anæsthetist has been added as consultant to prepare the patient properly and to tell the surgeon when he may operate and to choose the anæsthetic agent best suited for that particular case.

Has the surgeon ever considered when he is censuring the anæsthetist for a light anæsthetic, that the anæsthetist is only considering the welfare of the patient and is very willing to accept that censure to save the patient? No doubt, the anæsthetist is often at fault and should be censured; on the other hand, he is often censured when the blame is not his. I trust I will not leave the impression that the anæsthetist is faultless and the surgeon is always to blame. Success can only be obtained by a real co-operation of all concerned.

Inasmuch as anæsthesia is a distinct branch of medicine, it should be practiced by physicians, and these physicians should have special instruction and training therein. It is quite unexplainable why prominent and otherwise perfectly ethical surgeons will employ non-medical anæsthetists. There is absolutely no excuse for this. It has been said that there is a dearth of medical anæsthetists. (Since this paper was started, the writer has been reliably informed that there is a dearth of medical interns in some sections and that in consequence non-medical anæsthetists have been used.) This may be true to some extent, but would not be true if due and merited consideration were given the specialty so that anæsthetists, whose position certainly is a most important one, received due recognition and compensation for their work. Only too often does the surgeon and the hospital commercialize the position by employing non-medical anæsthetists. I can only, in this connection, reiterate what was said earlier in the paper, viz., that the patient should receive due consideration, and that to administer an anæsthetic is one thing, to practice the art of anæsthesia is another. In spite of these handicaps, the specialty has a most promising future. Keith Thomas, in his book,

"Personal Power," says, "If we want money, we can get it, if we want power, we can get it, the only condition being that we should want it badly enough." The anesthetists will apply this rule and obtain recognition, because they certainly want it and will work hard to get it.

All that the anesthetist asks is a real co-operation on the part of the surgeon, who, in the main, profits from the results of a properly administered anæsthetic by the smooth, speedy and happy convalescence of his patient.

Years	Cases
1	9
2	9
3	9
4	10
5	8
6	8
7	13
8	7
9	8
10	8
11	13
12	3

A ROENTGENOGRAPHIC STUDY OF THE SELLA TURCICA IN NORMAL CHILDREN.*

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ENDOCRINE literature contains numerous references as to the size, shape and general appearance of the sella turcica, including the size, shape and position of the clinoid processes, classifying some sellas as normal and others as abnormal. Since investigators have based their opinions as to the involvement of the pituitary body and subsequent clinical symptomatology upon the changes found in the sella turcica, it is very important to have a more or less definite idea of the normal size and appearance of the sella before a conception of any abnormal condition can be appreciated.

In undertaking a roentgenographic study of the sella turcica in children of abnormal mentality such as found in cretinism, mongolian idiocy, etc., we soon discovered that while a general description of the sella was easily enough obtained by means of the X-ray, we were, however, unable to state whether or not this appearance was normal or abnormal for any particular child. The literature contains several references to roentgenographic study along these lines in adults, especially the investigations of Schuller and more recently that of Jewett. Schuller mentions the sella in children by presentation of four drawings of the sella in children of 2, 5, 9 and 12 years respectively. Timme describes changes in children in abnormal conditions.

This lack of literature in normal children prompted us to conduct this investigation, with a view to determine, if possible, the normal size and appearance of the sella for each age in children from 1 to 12. In all 104 normal cases were examined of the following ages:

In addition, head measurements were made on 50 of these cases to determine the existence of any possible relationship between the size or shape of the head and the size and shape of the sella.

Before entering upon a discussion of the findings in this series of roentgenograms, perhaps a brief outline of the anatomy would not be amiss. The sella turcica may be described as a depression in the superior surface of the body of the sphenoid, limited anteriorly by the middle processes and posteriorly by the dorsum sellæ, which carries the posterior clinoid processes on either side of its tip. The anterior clinoid processes are formed by the mesial end of the posterior border of the lesser wing of the sphenoid, projecting into the middle fossa. They do not enter into the actual formation of the sella, but are generally described with it because they project out over the anterior portion of the sella and sometimes even appear to bridge it. The posterior clinoid processes and the middle clinoid processes serve as an attachment for the tentorium cerebelli; stretching across the sella turcica itself from these processes is the diaphragma sellæ which is an extension of the tentorium cerebelli. In the center of the diaphragm sellæ is a circular orifice through which the infundibulum runs. Since it is naturally the case that the sella turcica itself and its content, the pituitary body, are located below the diaphragm sellæ, then the anterior clinoid processes which must be above and lateral to the diaphragm are necessarily extra sellar. The anterior clinoid processes therefore are deserving of mention in a description of the sella only to arrive at their ordinarily normal appearance so that in case of a laterally and upward growing pituitary tumor, any absorption of these processes from pressure might be recognized.

From a roentgenographic viewpoint, then, the changes in different sellas are those of general shape, changes in the development and shape of the posterior clinoid processes and dorsum sellæ and changes in the development and shape of the anterior clinoid processes. The middle clinoids are nearly constant.

The technic used in a study of this kind is important, not so much the exact technic used

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but the constancy with which it is followed. In adults, teleoroentgenography (films taken with the tube at six to eight feet distance so as to get nearly parallel rays), is of course the most exact method. In children, however, the long exposures necessary in this technic are not practical. We have therefore selected a tube film distance of 26 inches and have, by using a high penetration and milliamperage, been able to obtain good films with $\frac{1}{8}$ -second exposure. The tube carrier is so adjusted that the central ray passes along a line tangent to the cornea of both eyes and is then moved backward until the central ray passes through the head at a point about $\frac{1}{3}$ of the distance from the external auditory meatus to the glabella. In most instances this technic gives a good projection of the sella. One can readily imagine that in some rather badly trained infants the following of any technic would be difficult even where only an $\frac{1}{8}$ of a second immobility is required. Duplitzed films and screens were used.

It was obvious even from a cursory examination of the films that there was no set normal for the general shape of the sella or for the appearance of the posterior clinoid processes and the dorsum sellæ. For purposes of description many different classifications and groupings were tried, some based on the posterior clinoid changes, some on the anterior clinoid changes and some on general shape. A classification following Jewett's nine groups in adults was also attempted. None of these groupings and classifications was found feasible because only about 50 to 60 per cent of the sellas could be definitely grouped, the rest being border line cases with some characteristics of one group and some of another. In other words, there were many sellas which could not be definitely grouped, and would then have been placed in a miscellaneous group, which would contain from 30 to 40 per cent of the cases, according to the strictness with which the groups were selected and would be therefore of no descriptive value.

Accordingly, we have decided to classify our cases in three very general groups, depending upon the general shape of the sella. In group A are placed those cases having a generally circularly shaped sella, in group B, those which are ovally shaped and in group C, those which are flattened or saucer shaped. Even with this very broad classification, it was not easy to place some of the cases between A and B groups. The rule was followed, however, of placing in B all of those which were not definitely circular in shape.

In group A the sella has a definitely circular shape, showing always a well developed curved or straight dorsum sellæ and posterior clinoids. The anterior clinoids may or may not be developed, but usually are. The dorsum sellæ varies markedly in weight and height and also in its

shape. It may be very heavy and moderately short or very thin and high or may present a general conical appearance heavier at its base than its tip. It may be of approximately the same weight at its base and tip, or it may show a bulbous tip which is heavier than the base. The anterior clinoid processes also show rather marked variations. In some cases they are short, heavy and rounded, in others short, heavy and pointed, in still others lighter in weight and longer. Occasionally one sees very heavy anterior clinoids which are also very long. In some instances the anterior clinoids are raised above the level of the middle clinoids and are very long. In these latter cases a slit is seen running anteriorly from above the middle clinoid processes under the anterior clinoids. This slit is in no way a part of the sella. In the cases in which the anterior clinoid processes are rather prominent, the posterior clinoids may curve forward so as to give the appearance of bridging. This apparent bridging or close approximation of the clinoid processes occurs in about equal proportions in groups A and B. The floor of the sella in group A is necessarily circular in shape.



FIG. 1. Group A Sella, with well developed anterior clinoids and straight dorsum sellæ. The lines along which the measurements were taken are shown.

Acp.—Ant. clinoid process.
Mcp.—Middle clinoid process.
Pcp.—Posterior clinoid process.
Dc.—Dorsum sellæ.

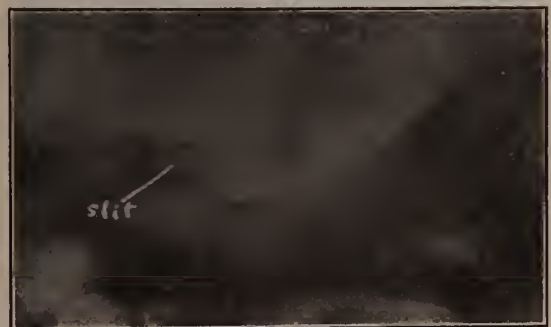


FIG. 2. Group A Sella, showing a curved dorsum sellæ. The anterior clinoid processes are raised so as to show a slit beneath them. This slit is extra sella.



FIG. 3. Group B Sella, showing poorly developed anterior clinoid processes and straight bulbous dorsum sellæ.

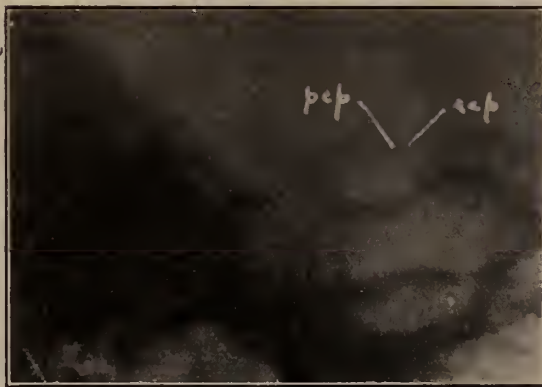


FIG. 4. Group B Sella, showing well developed anterior and posterior clinoid processes and near-bridging.

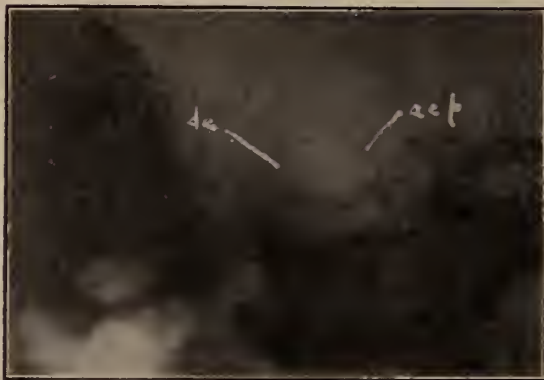


FIG. 5. Group B Sella, showing well developed anterior clinoid processes and very poorly developed dorsum sellæ.

In group B the floor of the sella is of oval shape. The posterior clinoid processes and dorsum sellæ are always well developed and always curved. The anterior clinoids are almost always well developed and the middle clinoids usually definite. Both the anterior and posterior processes and the dorsum sellæ are subject to the same variation as in group A except that the dorsum sellæ is never straight.

In group C are placed the cases showing very shallow sellas, those which are very long in relation to their height. In this group also the dorsum sellæ is poorly developed or absent and the posterior clinoids seem to be a part of the superior surface of the body of the sphenoid. The anterior processes may be well developed, but usually are not.

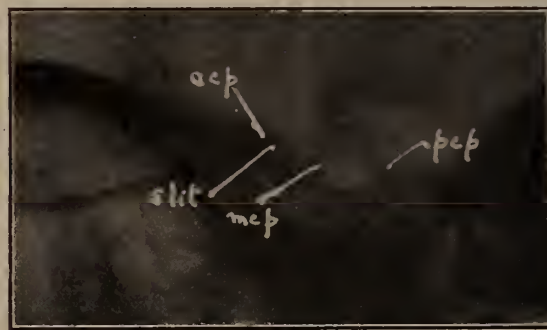


FIG. 6. Group C Sella, showing very poorly developed anterior and posterior clinoid processes and dorsum sellæ. The slit beneath the anterior clinoid processes and between them and the middle clinical processes is definitely shown as extra sella.

The measurements of the sella were obtained as follows: the length, from the middle clinoid process to the furthest part of the sella posterior; the height, on a line joining the tips of the anterior and posterior clinoid processes, a perpendicular was drawn to the deepest portion of the sella.

An analysis of the cases reveals in the following table the measurements (in mm.), of all of the sellas arranged according to age. The group in which each case is placed is also shown:

A study of the measurement in Table 1 shows a marked variation in the sella of each age. In the first year, varying from 6 by 5 to 9 by 7. Another instance of variation is seen in the two larger measurements, 10 by 8, which occur in sellas of 4 and 5 years. The smallest sella measured was in a child of 9 years.

A consideration of the average measurements for each age, presents the following Table 2:

TABLE 1—SHOWS THE INFLUENCE OF AGE OF THE CHILD UPON THE LENGTH, HEIGHT AND APPEARANCE OF THE SELLA.

1 Year			2 Years			3 Years			4 Years			5 Years			6 Years		
Length	Height	Group	Length	Height	Group	Length	Height	Group	Length	Height	Group	Length	Height	Group	Length	Height	Group
7	6	A	7	6	A	8	7	A	6	5	A	7	6	A	8	6	A
8	5	C	6.5	5.5	A	7	6	A	10	8	B	9	6	C	8	7.5	A
6	5	B	9	7	B	7	6	A	7	6	A	7	5	A	8	7	A
7	7	A	8	5	C	8	7	B	8	8	A	8	7	A	7	5	B
6.5	5.5	A	9.5	7.5	C	6	6	A	10	7	B	7	7	B	6.5	7	A
9	7	A	7.5	5	A	8	6	B	7.5	7	A	8.5	7	A	7	6	B
6.5	5.5	C	10	5	C	7	5	C	9	8	A	8	8	A	8	7	A
9	5	C	9	7	A	7	5	C	11	8	B	11	8	B	9	7.5	A
8	6	A	6	5	A	7	6	A	8	7	A						
									7	6.5	B						

7 Years			8 Years			9 Years			10 Years			11 Years			12 Years		
Length	Height	Group	Length	Height	Group	Length	Height	Group	Length	Height	Group	Length	Height	Group	Length	Height	Group
7	5	B	9	7	B	9	8	B	9	7	B	10.5	9	A	7	6	B
9	8	A	7	6	A	9	8	A	9	8	A	10	9	A	8	6	B
10	8	A	8	5.5	A	7	6	A	9	8	A	9	6	C	10	8	B
8	8	A	8	7.5	A	9	6	A	8	8	A	10	7	B			
9.5	8	A	8.5	7	A	10	9	A	8	8	B	11	7	B			
9	9	A	8	8	A	6	6	A	8	7	A	9	8	A			
9	7.5	A	10	9	A	9	9	A	8	6	A	8	6.5	A			
7	6	A				9	8	A	10	8	B	9	9	A			
10	8	B										10	7.5	B			
7	6	A										9	8	A			
7	7	A										8	7	A			
8	8	A										8	6	A			
7	7	A										9	5	B			

TABLE 2—AVERAGE HEIGHT AND LENGTH OF SELLA TURCICA AT EACH AGE AND NUMBER OF CASES OF EACH GROUP AT THE DIFFERENT AGES.

Age	1	2	3	4	5	6	7	8	9	10	11	12	
Average Length	7.5	8	7.2	8.3	8.2	7.7	8.2	8.3	8.5	8.6	9.2	8.3	
Average Height	5.8	5.8	6	7.5	6.9	6.6	7.3	7.1	7.5	7.5	7.1	6.6	
Groups	A	5	5	5	6	5	6	11	6	8	5	8	0
	B	1	1	2	4	2	2	2	1	0	3	4	3
	C	3	3	2	0	1	0	0	0	0	0	1	0

The measurements of the sella practically always show a greater length than height. The average measurements run from 7 mm. in length and 5.7 mm. in height at one year to 9.2 mm. by 7.1 mm, at 11 years. We were surprised to find that the average length and average height were greater in the sella turcica of girls than in those of boys, as shown in Table 3. We do not know if this is of any clinical significance.

There seems to be a rather rapid increase in size for the first two years and then a gradual increase up to 12 years with, however, much irregularity. The 3-year-old and 6-year-old are exceptions in that they do not show increase in size over the previous years. The 4 year column is an exception in that no age after that shows larger sellas until we reach the ninth year. It will be seen that the height measurements in average followed very closely the length measurements in average, except that they are proportionally smaller. There was only one case in which the height was greater than the width. The relation of the height and length averages

in the accompanying graph (Table 4), which shows a general tendency to enlargement, more rapid in the first two years as well as the tendency of the average height to follow the average length.

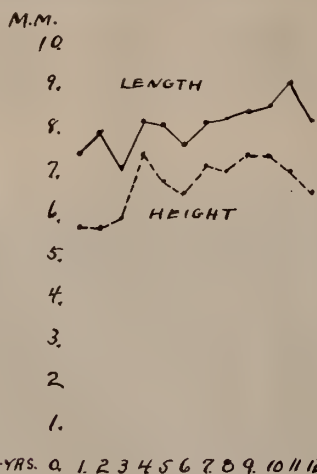
An analysis of the groups A, B and C by age by means of Tables 1 and 2, shows that all but two of the group C cases fall in the first three years. This seems undoubtedly to be due to the fact that in some instances the dorsum sellæ does not ossify early and as it is not a bony structure at that time appears not to be present. Regarding the incidence of groups A and B there seems to be no definite rule followed except that group A predominates at all ages except 12 and here only three cases were examined.

An analysis of the three groups in relation to sex shows no influence of sex on the formation or appearance of the sella, for of group A there were 35 among males, 34 among females; of group B there were 11 among males and 13 among females; of group C there were 6 among males and 4 among females.

TABLE 3—AVERAGE LENGTH AND HEIGHT OF SELLA TURCICA IN EACH SEX AT DIFFERENT AGES.

Age	Sex	Average Length	Average Height
1 Yr.	M	7	5
	F	8.4	6
2 Yrs.	M	8.1	5.8
	F	7.8	6
3 Yrs.	M	7	6.2
	F	7.4	5.8
4 Yrs.	M	7.6	6.7
	F	9.5	7.5
5 Yrs.	M	8.3	6.8
	F	7.7	7
6 Yrs.	M	7.1	6.7
	F	8	6.6
7 Yrs.	M	7.7	7
	F	8.9	7.7
8 Yrs.	M	8.1	7
	F	9.3	7.3
9 Yrs.	M	8.6	7.8
	F	8.5	7.2
10 Yrs.	M	8.6	7.6
	F	9	7.4
11 Yrs.	M	9.4	7.5
	F	7.5	6
12 Yrs.	M	10	8

TABLE 4—AVERAGE LENGTH AND HEIGHT OF SELLA AT DIFFERENT AGES.



A careful survey of the head measurements in the 50 cases and the corresponding sella measurements seems to show definitely that there is no relation between the size of the head and the size of the sella. The head measurements were des-

ignated and obtained as follows: Anterior-posterior, from the glabella to the external occipital protuberance; anterior-posterior maximum, over the greatest length of the head; lateral, the distance between the squamous portions of the temporal bone just above and in front of the pinna; lateral maximum, the greatest bi-parietal measurements. All measurements were made with calipers.

An analysis of the relationship between the size of the head and the sella from the viewpoint of group of A, B and C demonstrates that all of the group C's occur in small heads. But a small head does not necessarily contain a group C sella for group C sellas were found in only 50 per cent of the heads measuring less than 17 cm. in length and 14 cm. in width.

Conclusions.

1. Shape of sella turcica.

The sella turcica in children can be classified in a general way by means of roentgenogram into three groups according to shape—A, circular; B, oval and C, flat and saucer shape, with modifications as explained in the text. Group A and B were found in all ages while C was practically limited to the first three years.

2. Shape of the sella as to size of the head.

The shape of the sella has no significance except in the case of the flat group C type. This type is always found in small heads, but it does not necessarily follow that all small heads exhibit this type.

3. Size of sella in comparison with age of child.

There is a marked variation for each age, both as to height and length of the sella for that particular age. The average height and length of the sella shows a comparatively rapid increase in the first two years with a gradual yet irregular increase from then on up to the age of 12. There is a tendency for the average height increase to follow the average length increase.

4. Size of sella as to size of head.

There is apparently no relationship between the size of the head and the size of the sella based on head measurements.

5. Appearance and size of sella as to sex.

There is no difference in the occurrence of the three groups between the heads of boys and girls. There does not seem to be any influence of sex on either appearance or formation. The sellas of girls, however, were greater in both length and height on the average.

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PREVENTION AND TREATMENT OF UNDERNOURISHMENT IN CHILDHOOD.*

By WILLIAM HENRY DONNELLY, M.D.,
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THE treatment of undernourishment in childhood as that of any abnormal condition naturally divides itself into two main categories, namely, (1) the prophylactic or preventive and (2) the curative or active.

The preventive measures against malnutrition must, to be fully successful, begin in the antenatal period of the child's existence: in other words pre-natal care and advice for the expectant mother are of the utmost importance.

In order that an infant may be born with the best chance for his life struggle it is important that not only should the ordinary attention be given to the urine analysis, blood pressure, measurements, etc., of the mother, but that her diet be gone into with special reference to vitamins or essential food substances. McCollum has shown that the mother has very little capacity for manufacturing vitamins, and that her offspring will not receive from her an adequate supply of these essential substances, unless her diet contains them in sufficient abundance for both herself and her child. This applies equally to the period of gestation and to that of lactation. The common every day diet of the average household is only too often a "deficiency" one, consisting of decorticated and therefore devitaminized cereals, rooty vegetables, fleshy meats and broths made therefrom, white bread and cake made from white flour, tea or coffee and either no milk or a milk of low butter fat content and probably so aged as to have lost a great part of its vitamins.

Such a diet is not the proper diet for the pregnant or nursing mother, as it is very low in all the essential food substances and very liable to react unfavorably upon the child.

Insistence should be made in such cases upon the drinking of a generous amount of milk preferably raw, on the eating of cereals made from whole grains, whole wheat bread, eggs if they agree with the digestive apparatus, leafy vegetables and fresh fruits. In this way vitamins will be added and the diet made properly balanced.

During the first year of life the breast fed child will get sufficient vitamins from his mother's milk, and if bottle fed should be given fresh milk, again preferably raw, but in any case as fresh as possible to prevent the loss of vitamins, which according to Alfred H. Hess is in direct proportion to the length of time elapsed between milking and consumption.

When cereals are added to the diet they should, if possible, be those made from the whole grain, and even breast fed babies are helped if given one cereal feeding a day at the sixth month as is now the custom with the artificially fed.

Fruit juices should be given at least from the third month on, and we now know that tomato juice has an antiscorbutic value equal to that of orange juice. Green or leafy vegetables should not be left out until too late, but may be given in the form of puree quite early, and never later than the ninth month.

A very simple way of getting a satisfactory gain in weight in bottle fed infants who fail to gain when their caloric feeding has been pushed up to even eighty calories per pound has been the addition of coddled or soft boiled egg yolk to the formula. The gain in weight has been striking, out of all proportion to the food or caloric value of the small quantity used, in a number of cases at the New York Post-Graduate Hospital, and can be explained only by the specific action of the fat soluble vitamins contained in the egg yolk.

In private practice the child's diet should be watched at least until puberty, and should be made sufficient in bulk to avoid constipation, in calories to provide body weight and energy, and in vitamins to ensure proper growth and complete well-being. In institutions, whether orphan asylums, day nurseries, hospitals, fresh air camps or others the same attention should be paid to the above dietetic essentials.

Other important features in preventing subnutrition in older children are sufficient sleep with open windows, sufficient but not excessive exercise in the open air, avoidance of thin broths and too much liquid at meals, sufficient time at meals, avoidance of candy between meals and of tea and coffee at meals.

The actual or curative treatment of undernourishment may be undertaken by the private physician or by a public institution. In the latter case the class method is by far the most satisfactory as it arouses the childlike love of competition, and enables instruction to be given to large groups of children and mothers at one time.

Even in private practice Emerson of Boston has shown it is possible to successfully utilize the class method.

Inasmuch as the successful treatment of any diseased or abnormal condition depends on a knowledge of its causes and on their removal when possible, it might not be amiss here to take up the actual causes of malnutrition in children from the runabout age up to puberty.

The causes to be sought for and removed may be organic diseases or faulty habits of living and eating.

Of the actual diseased conditions diseased ton-

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sils easily take first place in point of frequency if not also of seriousness.

It is a comparatively few years since the vital importance of diseased tonsils as the portal of entry for all sorts of systemic infections began to be realized.

Carious teeth are a very common factor, and, while of great importance, do not compare with the tonsils in the production of disease in the child, nor are they so likely to produce chronic focal infection as in the adult owing to the fact that in childhood most of the caries is found in the resorbing deciduous teeth whose roots have partially or wholly disappeared. Hence apical abscesses are uncommon and the resultant focal infection likewise.

Special attention should be directed to dental mal-occlusion with concomitant faulty development of the facial, neck and scapular muscles, as has been so aptly and forcibly brought out by Dr. Alfred P. Rogers of Boston in his work at the Forsyth Dental Infirmary.

In the prevention and treatment of undernourishment there has not been enough attention paid to posture and weight bearing line in the lower extremity.

Small children should be examined for the line of weight bearing and if it is not in the normal direction, through the lower leg down to the base of the second toe, measures must be taken to correct it. This should be decided before the child begins to walk, and his very first shoes should be designed accordingly. Faulty leg and foot mechanics will produce fatigue directly and also indirectly by disturbing the muscle balance of the trunk, chest and shoulders.

Emerson in his recent health survey in Walpole, Mass., found that of the usual one-third of the child community proven to be undernourished, 80% had nasal obstruction, and 79% or practically the same number had "fatigue posture."

Prevention and correction of postural defects then are an indispensable part of the handling of the malnutrition.

Tuberculosis in infancy and childhood is usually glandular in its origin and when the glands involved are in external parts of the body they rarely escape detection.

However, the groups in the thoracic and abdominal cavities, especially the tracheo-bronchial group often escape even examination. Here D'Espine's sign of whispering bronchophony below the seventh cervical vertebra, verified if need be by radiography, will settle the question.

The von Pirquet test in children over a year or two of age is of slight value except when persistently negative, and even then the potency of the tuberculin, the dosage and general technic must be assiduously checked up.

When tuberculosis, actual or potential, is found every effort should be made to send the

child to the country, rest should be insisted upon and cod liver oil, with or without malt, will be found of service.

Congenital lues, may be suspected and treated, if not actually proven, even in the absence of a positive Wassermann test, by certain signs especially in the teeth. Not only the somewhat rare Huthinson tooth but also the separated upper central permanent incisors of Roberts, and the accessory cusped or "humpy" molars of Sabouraud. Most of these low grade infections with lues in the school child will yield to the old fashioned mixed treatment of mercury and potassium iodide.

Organic heart disease and rheumatism in the child is simply a question of diet, rest and nutrition, once the tonsils have been removed.

Intestinal parasites, while common in the South, are rather rare in this region, and they can be diagnosed only by the finding of the parasites or their ova in the stools. The so-called symptoms of worms, such as picking the nose, grinding the teeth, screaming during sleep, bad breath, etc., have been shown by many observers, especially recently by DeBuys and Dwyer, to be more frequently present in children who have no intestinal parasites. When parasites are found, of course, anthelmintic measures must be instituted and persisted in until successful.

Organic heart disease, old poliomyelitis, chronic nasal sinus infection, chronic appendicitis, defects of vision and other organic defects must be looked for and treated when found. When organic causes have been investigated and treated, there will remain a great number of factors to be corrected such as rapid eating, too much fluid at meals, drinking of thin soups, a true deficiency diet, late hours, overcrowding, poor ventilation, improper exercise, a diet insufficient in bulk, calories, or vitamins, or all three.

The treatment then in the private home of the average intelligent family consists in the removal of removable organic defects, correction of errors of hygiene and diet; insistence on proper rest especially during the active part of the day. The average case, after treatment of organic causes, will readily yield to the drinking of a quart of raw milk daily, one glass at each meal and one after school, rest in bed from seven p. m. to seven a. m., a rest period of one hour after school in the afternoon or a half hour morning and afternoon.

The importance of raw milk in the prevention and treatment of malnutrition has been conclusively proven by all who have attempted to deal with this problem on a large scale. Recently McCollum has announced a clinical verification of his classical animal feeding experiments. He took two groups of undernourished children, forty-two in each group, in an institution and placed one group on one quart of raw milk for

each child per day while the other group was left on the usual institutional diet of cereal, white bread, soup, fleshy meats and potatoes. Inside of a few months some of the group getting the raw milk had gained as high as eighty per cent in weight and their physical condition improved correspondingly. The other group continued along at about their usual rate for some months and then as soon as they in turn were given the raw milk, they proceeded to do just as the first group had done.

The rare necessity and comparative unimportance of drugs in the treatment of undernourishment has been shown many times and in the writer's own nutrition clinic at Brooklyn Hospital, a large class of children were made to gain at almost one and a half the normal rate for their age without the administration of any medicines whatever.

If these measures be followed religiously and if the diet be satisfactory in all of the three essentials mentioned above, it is astonishing what results can be obtained without the use of drugs and medicines.

Even cod liver oil, invaluable as it is in malnutrition in childhood, is surprisingly seldom necessary if the above regimen be observed.

A serious factor in the causation of undernourishment in the school child as well as a handicap and hindrance in its correction is the present irregular arrangement of school hours for the young child. In this city many children must get to school at 8:15 a. m., with the result they have no time to eat a proper breakfast, they have no time for a bowel movement after the morning meal which is the physiological time for it, but they also have to hurry or run all the way to school to avoid being late.

Their lunch hour is so short and so early in the day that they do not get a sufficient noon meal, and then they get hungry long before the evening repast. It is not so bad if they will take a glass of milk and a slice of bread after school, but there is a great temptation and tendency to eat candy at this time and to spoil the appetite for supper. This may be overcome by special arrangements in school for undernourished children, or part time—if necessary keep them out of school.

Undernourishment is so widespread, and systematized efforts to combat it are so recent that the full effects of these efforts will not be evident until the present generation of children who are getting the benefit of the newer knowledge of nutrition grow up.

Preventive medicine is the watch word of the day, and it is the divine privilege as well as the duty of the physician, especially the pediatrician, to guide every child, where it is humanly possible, to the full attainment of his heritage of health and happiness. To be successful this guidance must begin even before the child is

born and must continue until the individual has attained an age when he can understand and solve his own problems.

SUMMARY

1. Malnutrition is rampant in the childhood of this country. Most of it is unrecognized or at least untreated; of 300,000 undernourished school children of New York City alone, only 3,500 were shown by a Red Cross survey in 1920 to be under systematic observation and treatment.

2. Prevention of undernourishment in children should begin with ante-natal care and instruction of the mother, not only as to organic disease, but also as to the inclusion in her diet of the vitamins necessary to the welfare of her unborn child.

3. During the first year of life malnutrition may be prevented, or, if present, treated, in the breast fed infant by the careful supervision of the nursing mother's diet with special reference to vitamins. If necessary supplemental or complementary feedings may be resorted to which must likewise be sufficient in vitamins as well as in calories. Breast fed babies are benefited by the administration of cereal feedings at the sixth month, and of vegetables at the eighth month or before.

4. The bottle fed infant in like manner must be given a diet sufficient in bulk, calories, and vitamins; cereals and green vegetables should be added early as above; egg yolk may often turn the tide in obstinate cases.

5. In older children, undernourishment is due to organic disease or to errors of diet and hygiene; the latter are more numerous and just as important as the former, and both require careful and persistent treatment.

6. In these older children, after removal of diseased tonsils, the treatment of organic disease when present, the correction of dental and postural defects, and the institution of a diet sufficient in bulk, calories, and vitamins, it is gratifying to note the successful results of a few simple measures.

7. These measures are:

- (a) Rest in bed with the windows open from seven p.m. to seven a.m.
- (b) Sufficient time at meals, with washing of the hands before and cleaning of the teeth after eating.
- (c) Avoidance of too much fluid at meals, especially thin soups, tea and coffee.
- (d) Avoidance of candy and cake between meals.
- (e) Drinking one quart of good milk (preferably raw) each day; one glass at each meal and one at a light lunch after school.
- (f) A rest period of one hour in the afternoon or of one-half hour both morning and afternoon.

Discussion.

DR. HENRY D. CHAPIN, New York City: Malnutrition is a most important theme for the pediatricians. I would also emphasize the importance of rest. In an experiment at Public School No. 40 a certain number of children only gained after resting after dinner. The school day is badly arranged for the nutrition of the child. A hot, well balanced dinner should be given at midday. Many cardiac cases show malnutrition as the principal symptom.

DR. LOUIS M. RUDERMAN, Brooklyn: In order to treat malnutrition successfully, drills and exercises in the caloric values of food and the caloric requirements of the child should be instituted in our elementary schools. Beginning in the lowest grades, a short daily period should be devoted to this subject. At first it may be presented in simple entertaining fashion, without sacrificing any of the facts, however. Later the subject may be made somewhat more technical. It is far more important for the child to know about food and calories than to know about Captain John Smith and Pocahontas. It is only by instilling this knowledge during the earliest intellectual formation of the child, and by allowing the nutrition idea to grow with the child, that we can hope to eliminate malnutrition among the children of our larger cities.

DR. GEORGE M. RETAN, Syracuse: The treatment of malnutrition is fundamentally educational. In order to make any progress in the solution of this problem I believe we will need to educate all children in the schools regarding the general principles of right living. The type of work which Doctor Donnelly describes is necessary, but unless we work with the normal child we will find that many well nourished children to-day will become malnourished children to-morrow. The supply of malnourished children will be furnished us faster than we can correct them.

DR. MURRAY B. GORDON, Brooklyn: Another factor of etiological significance in the production of malnutrition in children is the occurrence of contagious diseases in early life. In a study of 900 children at the Seaside Hospital in Coney Island made in 1918 by Dr. Bartley and myself, we found that in the cases where we were able to obtain a past history of contagious diseases, the occurrence of measles and whooping cough exceeded that of diphtheria and scarlet fever, especially in those children who were undernourished. This would seem to indicate that the occurrence of measles and whooping cough had probably a more deleterious and deteriorating effect upon the future welfare of the child than any other contagious disease. It is significant that the most critical period in a child's life was found by us to be between the

ages of two and six years, as demonstrated by the weight and general appearance and to some extent the height. In this period there is the greatest incidence of contagious diseases. In this series we also found that the weight to height basis was the most reliable standard of judging nutrition, the next in value being the weight to age and then that of general appearance. Conditions present at the time of examination which can be considered as causes of malnutrition were adenoids and hypertrophied tonsils, defective teeth, gastro enteritis and heart diseases in the order named.

THE OFFICIAL RELATION OF THE
STATE MEDICAL SOCIETY TO
CHILD WELFARE ACTIVITIES.*

By LOUIS CURTIS AGER, M.D.,
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THE opinions expressed in this paper would apply with more or less force to all phases of public health work, but I am confining my remarks to child welfare for two reasons: first, because this section is dedicated to pediatrics; second, because society for the past year or two seems to have been somewhat carried off its feet by the "save the baby" slogan. This is particularly unfortunate as the individual most concerned has no way of being heard in his own behalf.

That the present situation is unsatisfactory to all concerned hardly need be argued. A generation ago the number of charitable organizations of all kinds was a mere fraction of those existing to-day, and yet the situation had become so unsatisfactory that the "Charity Organization Society" idea was adopted in one form or another in all large communities, as a wonderful solution of the intolerable confusion that had arisen as the result of the overlapping of similar activities. The Babies Welfare Association of New York City has just issued its directory of agencies available in its work. I have not taken time to tabulate the contents, but the book contains 194 pages of text and 30 pages of index. To practically all these organizations physicians are giving more or less time. Probably there is not a physician present who is not asked from time to time to undertake work that he is well aware is useless or worse, either because of reduplication or because it would unwarrantably interfere with private practice.

At the present time most of the well established social service organizations are theoretically safeguarding the rights of the private practitioner. Unfortunately they do not find it

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possible to secure from family physicians the figures that will enable them to prepare the imposing array of statistics so necessary to the modern annual report. There is ever before them the temptation to herd all their "cases" into some clinic where the desired tabulations can be secured without trouble.

On the other hand it is equally true that in most rural sections there is a lack of needed facilities for child-welfare work, but the plans of organization must necessarily be very different from those employed in large cities. Who will initiate and carry out this work? Can there be any doubt that the local physicians of a given community ought to assume the responsibility for both selfish and civic reasons? Has it not been a very short-sighted policy to allow matters to drift until outside agencies have felt called upon to step in and take charge?

That responsibility for present conditions rests squarely upon the shoulders of the medical profession can, I think, be proved by reference to past developments, although it must be admitted in all fairness that previous generations of medical men can not be blamed for not foreseeing the developments of recent years.

The original charter of the State Medical Society conferred upon that body certain civic duties which it performed satisfactorily for a number of years. With its later charter it voluntarily relinquished the privilege of licensing physicians, and became a purely scientific society. If it had been more aggressive and had taken the ground that the combined wisdom of the medical profession of the state was better fitted to determine the public health needs of the state than a body of politicians, it might at least have secured the position of official consultant in such matters. Unfortunately the members of the medical profession have been content to be jollied along by after dinner laudations of their unselfish devotion to mankind, while their gratuitous services have in many instances, been prostituted to the political or social aspirations of others. In an analogous manner the machinery of public health administration has been allowed to pass entirely out of the hands of the local medical profession of a community.

However, the weight of responsibility does not stop here. State and County Societies have always maintained public health committees, whose members are supposed to keep in touch with legislative activities and to oppose undesirable laws. Their complete failure in this purely negative duty has been proven by the hearty support given to the "Professional Guilds." Surely these committees on public health were eminently fitted to carry out the constructive work in their respective communities,—at least to the extent of formulating plans. In a few in-

stances they have attempted to fulfil this duty, but they have never, so far as I know, received any support from the profession at large.

A remarkable example of how history repeats itself is to be found in the present situation in the State of Alabama. At the close of the Civil War that very remarkable man, Jerome Cochran, organized the Alabama State Medical Society, and secured a charter placing all public health activities in the hands of that body. The State Society is the State Department of Health, and the County Societies are the County Boards of Health. All health officers are appointed by the censors of the medical societies and are responsible to them.

Surely a medical Utopia,—a state in which the medical profession can educate the people in matters of public health, and establish all those reforms that, in other states, are held up by ignorant or shortsighted politicians,—if we are to believe the statements made at medical meetings. What is the actual situation. Allow me to quote the reply of a prominent Alabama physician in answer to the question:

"Have you any definite suggestions for improving the present medical law?"

"Yes. To follow the plain road of experience. Make the Health Department an integral part of the government. . . . Our people take small interest in public health. When a real question arises our health officers are up against the fact that they are not amenable to the people or the state government. They are only responsible to boards over which the people have no control."

Could you imagine a more startling arraignment of the medical profession? If this statement is justified by the facts, we see a large group of physicians absolutely blind to the greatest conceivable opportunity to establish a model public health unit, and to demonstrate to the rest of the country the practical value of all those theories that are presented year after year at the meetings of medical societies.

In all probability this brief paper will be as barren of results as are most of the public health suggestions made at medical meetings, but I will at least put my ideas in the form of a concrete proposal. There are two definite and distinct needs—in the larger cities a careful co-ordination of present child welfare activities and a curbing of unnecessary efforts; in rural communities the establishment of child welfare organizations in such a form as will best meet the requirements of the different counties of the state.

I would suggest that these two sections formally request the State Society to take cognizance of present conditions by appointing a special committee to formulate plans, and to urge

upon the county societies, the appointment of similar committees.

There is not a county society in the state that does not contain members entirely competent to determine the amount and nature of child welfare work needed in its own section, and to decide the form of organization that will best meet those needs.

These suggestions are in no way a criticism of the activities of the State Board of Health. It is the duty of that body to supply to every part of the state such supervision and assistance as is not supplied locally, but is it not the part of wisdom for the local members of the profession to render such outside activity unnecessary?

Discussion.

WILLIAM H. ALLEN, Director, Institute for Public Service, New York City.

It has been my privilege recently to survey the programs and organization of three state health departments. Experience shows that one most important question is whether the state health officers are keeping open the channels of co-operation between the health department and the state and county medical societies. If there is not active co-operation, fifty other questions are answered at once about health work which is not being done. If the channels of communication and co-operation are open, hundreds of questions are answered as to health efforts and health accomplishments.

Medical men are in a receptive mood toward their medical societies. They know the officers; they give them credit for protecting the profession. Thus the central offices serve as a telephone switchboard to make one communication do the work of several thousand. It is impossible for either the physician or the health officer to do his best for his community unless both work together.

Before the medical men in New York State are three immediate problems that call for active co-operation such as Dr. Ager has suggested between the medical societies and the system working for a hundred per cent of the people, the only agency that acts one hundred per cent of the time—namely, the health department.

There is the need for recruiting physicians and nurses. Unless steps are taken which heretofore have not been taken, in a generation there will be no large state convention possible. Only by team work in telling one hundred per cent of the opportunity of the physician, and in proving the social-mindedness which expresses itself through co-operation will the recruited physicians and nurses be anywhere near the number necessary to do society's work.

Secondly; New York State has started on a new method of making its state budget. There is heard from private business sources a demand for budgets based upon "visible revenues." This is the last slogan for medical associations, which should demand budget making on the basis of "visible needs." To show one hundred per cent of visible needs calls for such team work as is impossible unless the medical society and the health department work together.

Finally, a municipal election is confronting New York City and several other cities this year. Unless facts about health needs are given to the public before election, those health needs will be neglected, misrepresented, and made the football of politics. The only slogan for a medical society is "No matter who's elected." The only way to protect health needs is to make sure that there is in the air a body of impersonal, specific information with regard to work already being done and with regard to work needed, so that the public can not be swamped by political claims at election time. It is impossible to get impartial, fairly complete information about health services and health needs not yet met without co-operation of the medical profession, and it is not reasonable to expect a city-wide co-operation of the profession except through the medical society's channels for information and co-operation between the department and the individual physician, which must be kept open.

The most stimulating public session of our Board of Estimate and Apportionment that I ever attended was one to consider the tentative provision for a bureau of industrial hygiene. There were present a dozen leaders of great labor organizations. While Dr. Harris, chief of the bureau, made a statement which was effective, and social workers spoke convincingly, the irresistible appeals were made by heads of labor organizations, speaking for tens of thousands. In securing a study of this problem and an advocacy of industrial hygiene work by labor unions, Dr. Harris tremendously strengthened the ability of the health department to serve the public, and, incidentally, its ability to get funds.

Similar co-operation through the medical societies will get basic information into the air, will make the individual physician a generating center for interest, enthusiasm and compliance with health laws by laymen, will make it possible for health departments to do vastly better work, and, incidentally, will increase the public's demand for a higher grade of service by the practitioner.

A CASE OF PERIODIC FAMILY PARALYSIS.*

By M. NEUSTAEDTER, M.D., Ph.D.,
NEW YORK CITY.

THERE are, comparatively speaking, few cases reported in literature and the etiology of the disease is still obscure. Since I have some new data to add to the etiology, I feel justified to make this report.

I shall proceed with the report of the case and discuss the various phases of this entity as recorded in literature later.

J. M., male; age 18½ years; dental student; born in United States.

Family History.—A paternal cousin died of cancer at 30, maternal grandmother died of diabetes, two maternal cousins are insane, three maternal uncles had periodic family paralysis, of whom one died in an attack at the age of 35, another died of pneumonia at 27, the third is living. He is 29 and did not have an attack in three years. The three uncles were not married. In two the attacks began at the age of 16 and in the third at 15. The one who died of pneumonia had the last attack about six months before his death. Otherwise there is nothing to be elicited in the family history of importance. The parents could not tell whether other cases appeared in remote generations.

Patient's Personal History.—He is one of five children. The four are in perfect health. He had appendicitis and recovered without an operation. Since early childhood he stammers slightly. Otherwise there is nothing in the history that would have any bearing on his present condition. He has never suffered from constipation.

His first attack came on at the age of 14 years, during the evening, characterized by marked weakness in all extremities, lasting a half an hour. He does not remember any exciting cause for it. The second seizure at 15, at night, completely paralyzed in all extremities; the third 8 months later, became paralyzed in the evening and fully recovered in the morning; in the fourth attack 8 months later he arose in the morning paralyzed and did not recover until noontime. In the following 1½ years he had five more attacks at intervals of three to six months. The last two at intervals of three weeks. All these attacks came on over night and lasted till the afternoon. The paralysis was complete involving all extremities, the muscles of the trunk and neck. They would

be ushered in by a feeling of fatigue and numb ache in the muscles of the extremities and palpitation of the heart, lasting at times a whole day. These were his signs, as he says, that meant an attack was impending. He would go to bed dizzy, sleep profoundly and rise in the morning completely or partially paralyzed in upper or lower extremities. The paralysis would grow progressively worse until all the musculature above mentioned would become involved. In some of the attacks he had difficulty in deglutition. In recovering, the muscles that became affected last would improve first, the distal ends of the extremities first then the proximal parts. He invariably remains generally weak for 24 hours after a seizure. He vomited in all attacks, excepting in the last two, a number of times. Headache is always present and perspiration is a constant accompaniment. It cannot be elicited whether the temperature was elevated during the attacks.

Present Seizure.—On February 1, 1921, I was called in by Dr. Glikman to see the patient, who gave the following history of the onset:

The day before he was called upon during the quiz hour for the first time in college—the subject was anatomy. He became very much disturbed and hardly was able to collect himself to walk to the rostrum. He managed, however, to reach his destination and answered the questions correctly. On returning to his seat he felt the peculiar numb ache coming on in the muscles of the arms, palpitation and at once “knew” that an attack was impending. This condition continued throughout the day and evening. His appetite was poor. He did, however, his school work as usual and retired at the usual hour, 11 P. M. He slept soundly and awakened at 6 A. M. finding himself paralyzed in the lower extremities and musculature of the trunk, so that he was unable to arise. The muscles of the upper extremities soon became involved and then also the muscles of the neck. The facial groups were not affected and his speech and deglutition remained unimpaired. He was perspiring profusely.

I have reached the patient's bedside at 12 M. and found the following physical status: Patient well nourished, of a rather cheerful disposition. Temperature per os 100 deg, systolic blood pressure 80, diastolic 60, pulse full and regular 72—heart normal in contour and action, respiration 24 fairly deep, the entire body moist.

Reflexes.—Pupils dilated, regular in outline, equal in size, promptly respond to light, accommodation and in convergence. The scleral, jaw,

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pharyngeal, biceps, triceps, radial, abdominal, cremasteric, achilles and plantar reflexes were all absent. The patellars were present but weak.

There was no disturbance of sensation to touch, pain or temperature and no response to mechanical stimulation of the muscles, such as tapping with the hammer. Unfortunately a portable electrical apparatus could not be procured in time to test the electrical reactions, but his physician reports that on a previous occasion he tried the indirect current and no response was elicited.

Motor.—Head was freely movable in all directions and the muscles of the neck were fairly strong in resistance; the musculature of the eyes and face were intact; that of the shoulders were flaccid and paralyzed; he was able to flex the forearm, hands and fingers as well as extend them weakly, the pronation and supination was executed with some difficulty; respiration was normal, the intercostals and diaphragm were now fairly active; the abdominal muscles and those of the dorsum were paralyzed for he could neither sit up nor move his trunk in any direction; he could flex at times the right thigh upon the abdomen with great difficulty but not the left, there was marked foot drop on both sides, he could neither flex nor extend both feet, nor move the toes. There was a flaccid paralysis of the lower extremities. The volume and consistency of his musculature present no abnormalities.

The mucous membranes seemed normal in appearance and the abdominal and thoracic viscera were normal. Fundi oculi seemed normal.

His intellect and memory were intact. His appetite was poor that day and had to be coaxed to partake of fluid diet. He passed urine several times, there was no sphincter disturbance.

At 3 P. M. the same day I saw him again. The paralysis was now gone, he could rise without difficulty and move all extremities. His motor powers were fairly strong, but became weak after walking a distance of about 30 feet. The scleral, jaw, pharyngeal, biceps and radial reflexes were still absent, all others returned. He was still perspiring.

The chemical analysis of his blood, obtained at this time, is reported by Dr. William C. Thro, who kindly made all the chemical and cytological examinations, as follows: the blood sugar, 130 mg. per cent.; non-protein nitrogen, 58.8 mg. per cent. The calcium content could not be determined on account of the potass.

oxalate, which was added to the blood as an anticoagulant.

The report of the examination of the urine, 1,550 cc.; which were collected during 24 hours, is as follows: Appearance cloudy, yellow, acid reaction, specific gravity 1.025, indican normal, no albumin, no sugar, no casts, no cells, amorphous phosphates and magnesium phosphate crystals present.

Nitrogen Excretion.—Total nitrogen, 1.223%; 18.9 gms. in 24 hours. Urea nitrogen, 0.965% 79.0% of total nitrogen. Ammonia nitrogen, 0.04%; 3.2% of total nitrogen. Purin nitrogen, 0.027%; 2.2% of total nitrogen (+ uric acid). Kreatinin nitrogen, 0.024%, 1.9% of total nitrogen. Total kreatinin nitrogen, 0.372 gms. in 24 hours. Rest nitrogen, 0.167%; 13.6% of total nitrogen. Kreatinin, 1.03 gms. in 24 hours.

The patient was put upon a Schmidt diet for three days and the feces examined. The following is the report: Mucous and blood absent. Fermentation: gas + + +, reaction before neutral and after acid. Food residue: muscle fibers very few; small bits of com. tissue, no starch. Parasites none, ova none. Bacteria: many fine gram negative rods, very few bacilli aerog. Caps. Urobilin normal. The feces show a carbohydrate fermentation type.

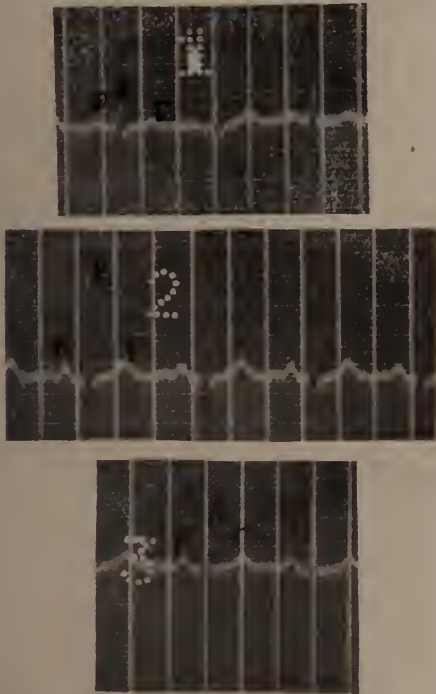
On February 12 his blood calcium content was 20 mg. in 100 cc., the highest calcium content ever reported. Oatmeal, milk, eggs and vegetables were cut out from his diet for a month and on March 12 his blood was again examined. This time the calcium content varied between 8.6 mg. and 9.0 mg. in 100 cc. on repeated examinations. His non-protein nitrogen now was only 39 mg. per cent., about 20 mg. less than on the day of the paralysis; blood sugar, 166 mg. per cent, 36 mg. per cent higher than before. Kreatinin, 1.2 mg. per cent.

In order to test the possibility of anaphylaxis he was vaccinated with 70 different proteins, consisting of food, epidermal and bacterial proteins, which the Arlington Chemical Company has kindly placed at my disposal. All vaccinations proved negative.

On March 12, when I had again examined him, he showed no physical abnormality whatever. There was, however, a marked quantitative reduction to electrical stimulation with both currents as compared with another individual of the same age. His systolic blood pressure was 90 and diastolic 60, pulse 78. There is a systolic murmur at the apex.

The differential blood count was as follows: Polymorphonuclears, 68%; transitionals, 10%; lymphocytes, 18%; large mononuclears, 1%; eosinophiles, 3%. No basophiles and no mast cells. Wassermann negative.

On April 23 Dr. Sclian Neuhoﬀ has kindly examined the patient's cardio-vascular system and reports as follows: "J. M. presents no evidence of cardio-vascular disease. The abnormal systolic thrill at the apex and the split sound over the mitral area are of functional origin and due to cardiac hyperacidity. These



P—Auricular Deflection; R.-T.—Usual Ventricular Deflections; 1, 2, 3 Refer to Different Leads; Vertical Lines Measure $\frac{1}{5}$ seconds.

abnormalities disappear almost entirely when the patient is lying down. The systolic blood pressure was at first 140; after a few minutes it fell to 118. This is evidence of heightened vaso-motor tone. The diastolic blood pressure was 60.

The orthodioscopic tracing shows a slender heart of graceful form resting slightly upon the diaphragm. This is assumed by some to fit in with the complex of vasomotor instability.

The electro-cardiogram shows normal rhythm. The deviations in the leads are normal in direction and size.

He has not had any attack till now and no medication was prescribed.

I shall now proceed to discuss the various theories of the genesis of this affection as outlined in the literature, comparing the results of

my meagre investigation. As soon as the patient can be induced to enter a hospital, I shall follow out more complete methods of investigation.

HISTORICAL.

I. *Symptomatology.*—In the main the symptoms agree with those of my case. The musculature of the extremities, trunk and neck are always involved. Interference with deglutition is reported by Hartwig, Couzot, Westphal, Goldflam, Taylor, Mitchell, Singer, Oddo, Audibert and in my case. Crafts and Taylor report difficulty in opening the mouth. Hartwig observed anisocoria and also myosis. In Singer's case a transient bilateral partial ocular ptosis and anisocoria were observed during an attack. Taylor reports a case in which consciousness was lost after taking some headache remedy. There was also respiratory difficulty and artificial respiration had to be resorted to. Goldflam reports that on one occasion asphyxia threatened the patient.

Nearly all observers report some changes in the heart's action, viz., acute dilatation, systolic murmurs, increased area of cardiac dullness, irregular pulse and a dirotic pulse without murmur was mentioned.

In the majority of the cases reported prodromata were absent, in some of them paresthesias in the extremities and muscle pain ushered in attack. In one of Goldflam's cases there was itching in the evening before the attack. Others mention a feeling of fatigue.

The differential blood count is not uniform in all cases. Goldflam observed constant changes during the attack, namely, a neutrophile leucocytosis with a diminution of the eosinophiles and in the intervals a lymphocytosis up to 40 per cent and eosinophiles above 5 per cent. Oddo and Audibert encountered in the interval up to 7 per cent eosinophiles. In Taylor's case the basophilic cells were prominent, 51-57 per cent of the white cells. And Dr. Hewes, who makes his examinations, concludes that the findings point to a leucopenia plus lymphocytosis. The majority of the other observers found nothing abnormal in the blood picture. The hemoglobin content is normal in all cases. The Wassermann reaction, whenever reported, was negative.

Flexner and others tested the toxicity of the blood serum by injecting it into animals, but found no specific toxicity other than the usual serotoxemia - hemorrhages, poluglobulia and leucocytosis.

Among the gastro-intestinal symptoms nausea and vomiting are reported, loss of appetite, coated tongue. Hypotonicity of the musculature

of the alimentary tract and lack of peristalsis are responsible for tympanitis and constipation. Crafts and Mitchell report specific substances in the feces obtained with Brieger's reagents. These findings are not conclusive.

In the urine Cramer was the only one to find a transient glycosuria during the attacks and Schlesinger found in some cases acetone. Some observers report an abnormal amount of indican. A high uric acid content was observed in the majority of the cases immediately after the seizure and also the products of low oxidation, the xantin bases, are augmented. Holzapple, Taylor, the author, and others report a diminished amount of urea. Mitchell and Flexner and the author found a diminished excretion of kreatinin.

II. *Etiology*.—In view of the fact that the disease is in most instances a familial affection and that in all cases a psychopathic or neuropathic constitution was demonstrated, it would seem plausible that there must be a special predisposition in the individuals for it. The degree of this predisposition varies, of course, in different individuals, so that there is a different age of incidence, irregular intervals and extent of involvement, the duration of the attacks and the points of minor resistance. As to sex, the males predominate (about 66 per cent. of males and 34 per cent. of females). The earliest age was 2 years. Buzzard's case, the latest age of incidence, was 60 years, Cramer's patient.

As possible exciting causes infectious diseases were incriminated. Physical over-exercion, indiscretions in diet and emotional stress are known to have ushered in an attack.

III. *Pathology*.—Hartwig, who reported a case as one of intermittent spinal paralysis, assumed a hyperemia and a transient exudate of the spinal cord to be the underlying basis of the syndrome. Samuelson laid stress upon the emotional factor and thought it was hysteria. Westphal was the first to suggest a toxic state and Goldflam suggested an autointoxication and placed the lesion in the muscle fibers and motor nerve endings. The flaccid paralysis, but not the type of electrical changes, would coincide with this theory, and the genesis remains unexplained. Couzot and later Putnam held that a specific toxin excites the inhibitory action of the cerebral and spinal centers. This theory can be dismissed, since it would not explain the loss of electrical and mechanical reactions. The anaphylactic reaction can also be dismissed as conclusively shown in my case.

The lesion must be sought in the muscle fiber itself. Westphal, Goldflam, Oppenheim, Singer and Crafts have examined muscles excised *in vivo* during an attack. They all found vacuolization and yet some do not agree that

it is of a pathological nature. Goldflam attaches a great deal of importance to these findings. Schmidt, who also excised muscles *in vivo* during an attack, found a hyperemia of the arterioles and capillaries in the interstitial spaces of the muscles. He also found small particles in the muscle fibers which would point to deposits of glycogen, since normal muscles treated in a similar manner as a control did not show such deposits. He contends that there is a transient arterial ischemia producing distinct muscular changes, which, he contends, are not artifacts. In such event a temporary lack of nutrition and a transient accumulation of toxic materials may partially explain the syndrome. He further contends that an abnormally large amount of adrenalin is secreted in these neurotic individuals and causes this vasoconstriction. Orzechowski has produced typical paralyzes in such individuals suffering from periodic attacks by injections of adrenalin. The reported glucosuria during attacks in some cases and hyperglycemia in my own case would point to a possible adrenal glycaemia.

If this theory is accepted, the specific toxin, autointoxication and emotional theories as a *terminus ad quecu* and not a *quo* would fit into the genesis of the whole picture, for all these factors would produce a sympatheticotonia. The appearance of this syndrome in varying intensity at various ages, especially during and immediately after puberty in most cases, the intermission during pregnancy may throw some light on this theory. The fact that disturbances of digestion begin and continue with the attack, characterized by nausea, vomiting, constipation, tenesmus, etc., excessive perspiration and also disturbances of the heart's action, would certainly uphold such theory.

IV. *Prognosis*.—The prognosis *quoad vitam* in uncomplicated cases is good. Deaths during attacks were reported by Schachnowitsch, Holtzapple, Schmidt, in the family of my case and others. The paralysis lasts from a few hours to several days and in one instance (Burr) has lasted seven days. When profuse perspiration and diuresis is present a recovery in a few hours is the rule. The duration of intervals and the complete seizure of attacks cannot be foretold and so far has not been modified by any treatment. Cardiac failure was reported in a few instances. The paralysis of the accessory muscles of respiration have in very few instances led to dyspnoea. Other complications may materially alter the prognosis.

V. *Treatment*.—Since we do not definitely know the *casus* and *locus nascendi* it would be idle speculation to speak of a prophylactic or

curative measure. Until something definite is known palliative measures in accordance with symptomatic indications may be resorted to.

CONCLUSIONS.

1. Cases have been reported by observers in this country and in Europe. The most classical reports are those of Westphal, Oppenheim, Goldflam and Schmidt in Germany, Oddo and Audibert in France and Taylor in this country.

2. The familiar character of the affection was demonstrated in the reports of Schachnowitsch, Cousot, Goldflam, Hirsch, Taylor, Buzzard, Oddo and Audibert, Lenoble, Holzapple, Rich, Mitchell, Schmidt and author's case. And—

3. The place of the lesion is indisputably in the muscles, but its character and *modus operandi* are still not demonstrated.

I desire to express my thanks to Drs. Thro and Neuhof for their very kind co-operation.

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MEDICO-INDUSTRIAL RELATIONS OF THE NEW YORK STATE WORKMEN'S COMPENSATION LAW.*

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The operation of the Workmen's Compensation Law involves five distinct groups of individuals: (1) Workmen, (2) Physicians, (3) Industrial Managers, (4) Indemnity Companies and (5) The Industrial Commissioner. The angle from which each of these groups views the aims and intent of the Act differs from that of any of the others. Their only common ground is or should be the prevention of sickness and accident inherent to industry and commerce, the early recovery of the sick or injured workman and his prompt return to daily toil, with efficiency restored to the highest possible level.

The physician comes in contact with all the groups except that of the workmen only through the medium of his charge for medical services rendered,—a contact strongly influenced by the radically different attitudes of the other groups so that contention and misunderstanding has arisen where harmony and co-operation only should exist.

* A brief submitted to the Committee on Medical Questions of the State Department of Labor at a meeting held in Buffalo, Wednesday, November 2nd, 1921.

THE WORKMEN.

The facts that in New York State so large a proportion of foreign born labor of all degrees of skill is employed in industry and business and that the workmen bring into this field of endeavor the class psychology and self-consciousness of continental Europe must be considered as greatly influencing their attitude and the morality of their conduct toward receiving aid as compensation under the Act.

The foreign born workman considers even the 66.2-3 per cent of his wage received as compensation as a princely income when compared to that he received while living in Europe. His hereditary training that the government is paternal and must and will take care of him and his family tends to make him endeavor by questionable ways to prolong the period of paid-idleness. It is stated by welfare workers that of the foreign born laborers, and even of many American born of foreign born parents, under their care at least 25 per cent deliberately court accident or illness or purposely prolong disability in order to secure a carefully protected idleness which pays more than enough to satisfy daily needs.

On the other hand, the hereditary training and the psychology of the native born American laborer make him scorn to take advantage of any such servile means to secure a competency with idleness; his economic ambition is not at all satisfied with mere existence,—he would be a leader and not simply one of a herd.

Trade unionism in its laudable effort to secure better labor conditions has inclined to a dead level of individual earning capacity dangerously similar to European class conditions, that will be, if it already has not been, a serious deterrent to American individualism. This feature of their well intentioned efforts certainly is not strictly American, for in the United States latent ability has been encouraged by opportunity so that individualism has reached a very high point of perfection; it is a great foundation stone in the structure of our country. If this surmise about the effect of trades union protection is true, it readily is understood that the liberal compensation granted the average laborer does not particularly promote a very high grade of moral attitude toward the just and equitable intents and purposes of the Act.

Industry, likewise, is responsible for this attitude of the workman because until recent years the average employer has contended that the physical welfare of his employees was none of his business. The present trend, however, seems to be away from this idea of lack of responsibility. Industry seems to have evolved an economic axiom that, "Industry is responsible for the human wastage due to accidents and sickness produced in the operation of the industry." In fact "No industry is profitable to the nation if it shortens the lives and stunts the bodies of its workmen."

There is no question about the great responsibility of the physician toward the sick and injured workman in compensation cases. On him next to the obligation of the "Safety First" principle rests the sole obligation for the proper and prompt recovery and return of the disabled workman. It is doubtful if he has combated the immorality of the workman to use deception for gain with sufficient vigor,—misunderstanding and sympathy overcoming judgment. Therefore, if possible, the physician should use greater skill and care in attendance on this kind of service than in strictly private practice because of the always dual responsibility—capital and labor—and often triple responsibility—capital, labor and liability carriers

THE PHYSICIANS

A little study easily will convince one that the practice of medicine is neither a business nor a science,

but that it is and ever will be an art,—it cannot be exact or definite. The motive actuating medicine is almost the opposite of that actuating industry—in the latter it is profits—in the former it is service. Working mainly for profits largely corrupts the morals of men, therefore practicing the art of medicine in the so-called commercial spirit would greatly tend to corrupt the physician,—the evils of the commercial spirit only can be escaped when the physician works from the spirit of service.

As quite all true physicians are guided in their professional relations by the altruism of service rather than by the commercial spirit of sale and barter, it is easily understood why there is constant conflict with industrial managers and liability carriers over the medical cost under the Compensation Law; the situation is bound to be acute—being one of economy versus idealism—until a better understanding of the aims and ideals of all the parties at interest is secured.

Another powerful factor directing the unhappy attitude of the physician toward the Compensation Act is based upon an inexcusable ignorance of the law and its aims, of the points of view of industry, of the liability companies and of the Industrial Commissioner. Such conferences as the present one frequently and persistently carried on are bound to correct this lamentable condition. The physician appreciates his priceless value, glimpses his responsibility, feels the superior economic power of the others at interest, and, resenting his own economic helplessness, takes it out in growling while giving his whole soul to his duty.

It is regrettable to state that so learned a social group as physicians should have by reason of their vocation a vision that is microscopic rather than telescopic,—it is one of the anomalies of civilization.

An additional factor influencing the reaction of the physician especially toward the question of fees is the fact that there is a woeful ignorance in regard to professional capitalization, to costs for doing professional business and about the proper allocation of medical income,—a situation which commerce appreciates but to detest. From computations made on 1914 values the legal right to practice medicine in the State of New York in 1921 reasonably can be capitalized at \$20,000.00; add for equipment not less than \$5,000.00; consider the annual fixed charges to aggregate not less than \$2,500.00, and the investment becomes \$25,000.00 with a 10 per cent annual carrying charge. An actuarial computation upon a business with such a capitalization, such an overhead expense and conducted by a managerial preparation requiring a minimum of seven years, would determine that the annual income therefrom modestly should be not less than \$7,500.00. No statistics of value or reliability in regard to medical incomes are either available or obtainable,—wild guesses and income tax figures indicate that the average annual medical income is in the neighborhood of \$4,000.00. If these statements are true it must be evident that the commercial spirit does not dominate the medical profession, that with idealism the motive and medicine an art the income must ever be below real and actual values.

The great and irritating hesitancy on the part of the profession of medicine to name definite sums for definite medical conditions and surgical procedures, among other things, is due to the same reasons which cause labor to prefer to deal with capital in organized groups rather than as individuals. Another reason is the credulousness of the individual physician—his narrow horizon;—aware of the uncertainty of service values but acutely aware of the certainty of little income he hesitates to establish basic costs for definite items for fear that improper advantage will be taken of his figures by interests governed exclusively by the commercial spirit.

INDUSTRIAL MANAGERS

No single group has greater responsibility than does industry. This is owing to several considerations, —(1) to the effect of that long evolutionary period in which industry considered that it was in no way morally responsible for disability originating in the industrial operations; this selfish if legally proper stand created bitterness, misunderstanding and hatred from the long-delayed legal procedures whereby industry generally wrought injustice to the workman and questionable justice for itself; (2) to the but recently awakened conscience of industry so that it is now endeavoring to protect the workman by intense "Safety First" propaganda from the ill effects of the hygiene and sanitation and risks inherent to commercial and industrial activities; and (3) to the use of the medical profession effectively to carry out the aims of an aroused class consciousness whose masterly vision recognizes its great responsibility in forwarding social justice and civic righteousness in this land of equal opportunity.

The sincerity of industry is shown by its prompt and free use of the services of a group whose motives are altruistic rather than commercial. However, industrial managers must recognize that it may engender unnecessary animosity and strife by thoughtlessness and carelessness toward the idealism of the older and more sensitive guild of medicine; that by forbearance and patience, sympathy and education it will secure an ally that will go a long way to bring about that cooperation between capital and labor so devoutly sought.

The claim of industry that it is paying the doctor's bills for the care of the disabled from industrial processes is only true on its face; in reality and as usual the public "pays the bill"—industry takes the credit. It would be very difficult to believe that industry did not add quickly the compensation expense to the cost of production and realize a profit thereon; by so allocating this expense industry in a democracy like the United States has committed no crime nor even an injustice, yet, in considering responsibility the actual truth should be taken into account. No one questions the fact that industry also owes a great responsibility to the investor, that the expense of doing business should be so carefully guarded as not to destroy the confidence in industrial managers in the minds of the small investor whose thrift makes possible the great industries and businesses which so largely contribute to make the United States the greatest country in the world. On the other hand the assumption by industry of an increasing responsibility concerning the hygiene and sanitation of the workman likewise must be protected. As this problem properly is assigned to medicine its idealism will make for the maintenance of the best individual health and the greatest unit efficiency; by fostering the spirit of service even if seemingly opposed to the spirit of commerce industrial managers will be practicing the best type of commercial economy.

Industrial managers should educate the physician as to the dual responsibility of industry—the workmen and the investors—and should point out to him that these dual and sometimes triple relations create conditions which under the compensation law must tincture medical idealism with a proper consideration for the economic responsibility of industry. The average physician rarely has had any commercial experience; he little understands the incentives governing the actions of industrial managers. Nevertheless, the astute industrial manager is attacking the problems of the physical welfare of the workman with his usual hard common sense and with the aid of the higher ideals of medicine so that human sympathy is showing through the former armor of indifference.

INSURANCE CARRIERS.

The compensation liability insurance carriers in the State of New York in their relations with the physician certainly heretofore have not occupied an enviable position. Life, health and accident insurance physical examinations until recently have been not only fairly remunerative but have demanded a high degree of medical ability; to the probity of the medical profession must be given great credit for the financial success of this class of the insurance business even if haughtily denied by both the mutual and the incorporated companies.

Just why the liability insurance carriers are considered hostile to the best interests both professional and financial of the physician is hard to determine. Surely the suspicious attitude of the carriers toward the integrity and honesty of both the workman and the medical attendant has fostered the idea that they are being exploited and unfairly treated, which may have led to an endeavor to secure by hook or by crook what in their minds was a proper remuneration.

Gossip has declared that the yearly income of the insurance carriers operating under the Workmen's Compensation Law has been running into fabulous figures, while in comparison the amount paid to the disabled workmen and to the attending physicians has been very meagre. Probably it can be said without fear of provable contradiction that great inequality of economic return has entered into the relations of these three groups.

To secure definite ideas regarding medical service costs for various medical and surgical conditions always has been uppermost in the minds of the carriers in their dealings with physicians. No doubt the wide differences in charge for apparently the same medico-surgical procedure has led the carriers to employ full-time salaried doctors and to endeavor to force the sick and injured workman, for whose medical bills they were responsible, to accept their services. This action, it is easy to see, is a direct blow at the clientele and income of the individual physician whose resentment, therefore, is justified and whose effort at reprisal is explained.

The general assumption by the carriers that the physician's charges are always maximum, coupled with the fact that the docile physician frequently accepts without protest or contest an unfavorable settlement at their hands no doubt has led to the practice of discounting the doctor's bills for service on compensation cases. This frequently has been done so cavalierly as to offend the doctor's dignity and to outrage his sense of justice; the carriers thus should expect the hostile attitude so generally assumed by the profession of medicine.

In 1914 at the time of the inauguration of the Workmen's Compensation Law in the State of New York the insurance carriers—the commission in charge of the State funds not participating—in consultation with some physicians and based on the Ohio "Fee-Bill"—constructed what has been called the "Workman's Compensation Medical Fee-Bill of the Medical Society of the State of New York." This schedule of charges for units of medical and surgical service under the provision of the act were offered as a minimum schedule, as a base from which to facilitate settlements. The Council of the Medical Society, representing a majority of physicians of New York, endorsed this schedule for the period of one year purely and only as an experiment to determine by trial the fairness of the schedule. Almost immediately the carriers who solicited this endorsement instituted the practice of using it as a maximum schedule in place of a minimum one. The one-year experiment although never adopted by the society was so claimed. It was used as a club to lower the regular bills of physicians throughout the state attending compensation cases. A feverish effort was made to bind physicians having such lines of practice to the terms of this schedule on threat of no more compensa-

tion cases, although the law gave free choice and stated that medical charges shall be determined by private charges for like service in the community in which the employee resides. The Medical Society repudiated this "Medical Fee-Bill" and publicly put itself on record as opposed to its terms. The insurance carriers still are using it as though endorsed by the Medical Society. Such unfair treatment will and does promote distrust, antagonism and revenge.

Each group approaches the subject of fees from diametrically opposite angles—the physicians from the standpoint of the artist, the carrier from one that is strictly commercial. The physician is annoyed because the carrier does not readily appreciate the reasons for the fluctuating values for the same medico-surgical procedure—the carrier, full of unjust suspicion, can not understand why the same procedure should not always carry the same value. Similar conflicts occur in settlements for medical services in other classes of insurance. The ordinary forms of all medical reports to insurance companies by their very minutiae reflect upon the honor, honesty and integrity of the physician in charge; in these particular characteristics he is the equal if not the superior of the individuals of any other vocation.

The general effect of these little and apparently unimportant things is resentment and indignation especially on the part of the physician group whose activities, as before stated, are altruistic rather than commercial. Conference, propaganda, and education are a sure means of changing fretting misunderstanding and antagonism into understanding and co-operation. Frankly there has been an extremely narrow interpretation of the aims and intents of the other groups on the part of the physicians, which along with the complexities of the problems that have to be solved in combination, has bred unjustifiable and unfair suspicion one of the other.

THE INDUSTRIAL COMMISSIONER

The recent change in the law whereby the former multiple commission has become one commissioner should exert a distinct benefit to all concerned. It is axiomatic that the responsibility of the Industrial Commissioner to the welfare of the workman is paramount—it goes without saying. If for no other reason, the Workmen's Compensation Law was created for the specific purpose of securing justice and right to the industrially disabled and of preventing aggressions of and unwarranted delays in settlement by industrial managers. On the other hand, being strictly neutral, the function of the Industrial Commissioner is judicial, to be exercised with the wisdom of a Solomon to see that as nearly as possible absolute justice and equity is meted out to all the parties involved.

Assuming that better health and better physical welfare for the citizen always will produce a better citizen industrially, socially and politically, and that the better the physical well-being of the individual citizen the better will be the state industrially, socially and politically, then the maintenance and improvement of the physical condition of the four million employees in the industries of the Empire State takes precedent over all other questions; to conserve this health no group of citizens has better preparation, greater influence nor greater responsibility than the legally qualified physician.

If these assumptions be true, the Industrial Commissioner of the State of New York has parallel importance not only from the standpoints of commerce and industry, but also from those of the laborer and the physician.

One of the opportunities of this great responsibility is to educate the people individually and collectively in regard to the high ideals of our Republic and its underlying economic individualism, to teach by his decisions that the sturdy independence and individual pride of our colonial forefathers and not the servile seeking of government maintenance is the true path to that social, commercial and economic state which all seek.

If the points of view of each of the five groups involved in the operations of the Workmen's Compensation Law are so different it certainly suggests that the Industrial Commissioner should study the aims of each group and the problems which such complex relations create. Frequent conferences such as that which the Industrial Commissioner has invoked through the activities of the Committee on the Medical Questions of the State Department of Labor are a certain and an American way of promoting that harmony and understanding which should make the provisions of the law operate smoothly, should determine its normal evolution and should bring about the successful accomplishment of its aims and ends.

Upon the Industrial Commissioner more heavily perhaps than upon any other of the groups develops the great responsibility of spreading knowledge of and inspiring confidence in the compensation law. Assuming that the Industrial Commissioner is interested in schemes that would promote prevention rather than cure the following outline is submitted in the belief that along its lines an evolution is now progressing toward State control of the agencies for the health-welfare of the people; that it will meet all the requirements of and objections to State compulsory health and accident insurance; that it retains all the good features of individualism; and that it prevents all the benumbing effects of State control.

1. Establish compulsory periodic physical examinations of
 - (a) Citizen.
 - (b) Industrial and commercial concern.
2. Establish an empirical health threshold for
 - (a) Individual citizen,
 - (b) Industrial and commercial concern.
3. Establish compulsory health-welfare attendance when a citizen is sick, injured or found below the established health threshold on examination by
 - (a) Enlisted health-welfare service,
 - (b) Private legal practitioners of medicine.
4. Establish compulsory health-welfare attendance when an industry is found below the health-threshold by
 - (a) State health-welfare service,
 - (b) Private service.
5. Establish limit of income below which enlisted health-welfare service is free to
 - (a) Individual,
 - (b) Industrial and commercial concern.
6. Establish fee standards to be paid to the State for the enlisted health-welfare service for
 - (a) Periodic examinations,
 - (b) Abnormal health attendance,
 - (c) Industrial and commercial attendance.
7. Establish a tax on every citizen or resident to meet overhead and deficit.
8. Establish entire and complete control of the education of the four professions of medicine, dentistry, nursing and pharmacy in
 - (a) Present institutions,
 - (b) Future institutions.
 - (c) Grading service,
 - (d) Registration,
 - (e) Pensioning.
9. Establish entire and complete control over the finances and property used in the interest of health-welfare maintenance with slight exceptions of
 - (a) Present institutions,
 - (b) Future institutions.
10. Establish a co-operative sickness and accident insurance scheme more evenly to distribute financial loss due to sickness and accident.

MEDICAL FEES

The great bone of contention between the physician and the other groups is the medical fee. As already

intimated commerce and industry demand that the medical fee shall be definite and constant, while the physician plainly states that the fee never can be anything else but a variant owing to the constantly differing, multiple and complex factors that enter into the conduct of each individual case.

In the commercial-industrial world the costs that enter into units of endeavor have been more or less exactly determined so that it relatively is easy to adjust an economic compensation. There are no statistics, investigations or studies of costs whereby the basic economic value of the professional service required for any medical or surgical procedure (care) can be calculated. A careful review of all of the factors entering into the determination of such medical service-value generally would show that the principles employed for the determination of basic costs in industry and commerce cannot be used to evaluate medical service.

However, as the State, more and more, is taking over responsibility for the health-welfare of the people, as well as deciding the personnel of the practice of medicine, the accumulation of quasi-public data on medical and surgical care—which it is presumed the Industrial Commissioner is securing—within a relatively short time will produce a mass of valuable statistics from which just and equitable basic costs for units of medical service may be determined. The individual physician must be trained to methods of detail and of record keeping in compensation cases at least as comparable to and as useful as those employed by the commercial efficiency expert.

It has been suggested that the Industrial Commissioner, the industrial managers, and the insurance carriers combine to employ physicians fond of statistical detail and properly equipped carefully to study the factors entering into the costs of medical service and from this pioneer investigation place tentative money-values thereon.

Also, it has been suggested that the Industrial Commissioner send a questionnaire on medical and surgical fees to at least several hundred individual physicians widely scattered throughout the State known to be handling compensation cases. At least one hundred and fifty questions should be asked. Both maximum and minimum charges and such other detail as might aid in the solution of the problem should be requested. Such a questionnaire for certain geographical areas was issued in 1920 by the United States Public Health Service. Upon receipt of the answers various tabulations should be arranged to cover single basic values for State-wide use, subsequently published and issued to the entire medical profession. From the entire number of maximum and minimum charges received for each procedure an average should be calculated but only if the number of replies from each section of the State properly represented the entire population involved in the provisions of the Act.

The adoption of any medical fee-bill, however innocent its preparation and fair its intent, and, until a basic service-value shall have been equitably determined, will cause conflict, discord and discontent. Knowing full well the importance of his relation to the physical welfare of the workman, and helpless because of ignorance of commercial methods the physician keenly feels the injustice of the disproportionate return from his highly skilled service when compared to the high wage of the workman and the huge profits accruing to industry, to business, and to the insurance carriers. Probably no more generous and charitable group of citizens exist than that which practices medicine. When the voluntary services so freely given to hospitals, dispensaries, and the so-called poor without remuneration of any kind are taken into consideration, it certainly is a social and economic injustice for the other groups with whom the profession of medicine is involved in the operations of the Workmen's Compensation Law to take advantage of the inherent weakness of the economic position of the all important medical advisor.

In Memoriam

WILLIAM CRAWFORD GALLAGHER, M.D.

On December 24, 1921, at a ripe old age there passed one of the good old-time physicians, Dr. William Crawford Gallagher. He was New York born of North Irish descent, and soon after graduation at the Geneva (N. Y.) Medical College, in 1863, he settled at Slaterville Springs, N. Y., and has practiced there ever since. In the good old days of that health resort he was resident physician of the Magnetic Springs hotel there. For years with saddle bags, later with a spanking team, he covered a country area of some ten miles square, medical, surgical and obstetrical; on call night and day. Children and grandchildren have known and blessed his services for well over fifty years. In town and county service, he filled many offices; in particular the board of supervisors, of which he was chairman year after year.

His son, the late Capt. Charles H. Gallagher, who died in service and is buried at Orleans, France, was a graduate of Syracuse, where there is now a grandson in attendance. (Geneva became Syracuse.)

The Tompkins County Medical Society make this minute of the great respect and loyal personal esteem that they cordially bear to the professional astuteness and memory of their oldest practitioner.

Deaths

BARNES, EDWIN RANDOLPH, Buffalo; Long Island College Hospital, 1865; Member State Society. Died January 11, 1922.

FLEMING, JAMES W., Brooklyn; Long Island College Hospital, 1880. Fellow American Medical Association; Member State Society; Brooklyn Pathological Society; Consulting Physician Long Island College and Baptist Home. Died February 7, 1922.

FORD, HARRY HALE, Elmira; Maine Medical School, 1884; Fellow American Medical Association; Member State Society; Elmira Academy of Medicine; Consulting Physician Arnot-Ogden Memorial Hospital. Died December 25, 1921.

GAMMONS, J. LOUIS, Yonkers; University of Vermont, 1904; Fellow American Medical Association; Member State Society; Academy of Medicine; Assistant Ophthalmologist and Otologist St. John's Riverside Hospital; Attending Laryngologist and Otologist Municipal Hospital. Died January 12, 1922.

KENNEDY, EDWARD V., Brooklyn; Long Island College Hospital, 1918; Member State Society; Assistant Visiting Surgeon St. Catherine's Hospital. Died January 10, 1922.

LEVITT, MARCUS J., Brooklyn; University of Baltimore, 1900; Fellow American Medical Association; Member State Society; Ophthalmologist Jewish Hospital and Hebrew Orphan Asylum; Chief Ophthalmological and Aural Surgeon East New York Dispensary. Died January 25, 1922.

McCUTCHEON, GUY L., Buffalo; Buffalo Medical College, 1896; Member State Society; Buffalo Academy of Medicine. Died February 2, 1922.

MESICK, NELSON H., Glenco Mills; Albany Medical College, 1868; Member State Society. Died December 14, 1921.

MILLER, JOSEPH B., Alexander; Buffalo Medical College, 1866; Fellow American Medical Association; Member State Society. Died January 10, 1922.

VOLKENBERG, ALBERT, New York City; New York University, 1883; Fellow American Medical Association; Member State Society. Died January 31, 1922.

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HOUSE OF DELEGATES.

WHILE the Annual Meeting of the Medical Society of the State of New York will begin on Tuesday, April 18, in Albany, the House of Delegates will hold its first session on the previous day, Monday, April 17. Notice of the time and place of the meeting will be sent to the delegates, as usual, in ample time before that date.

REVISION OF CONSTITUTION AND BY-LAWS.

BY direction of the Council, the proposed revision of the Constitution and By-Laws was printed in the January issue of the JOURNAL.

The members of the Society were urgently requested to consider the proposed new draft and to communicate objections or additions to the Executive Committee of the Council in order that the matter may be presented clearly and expeditiously to the House of Delegates.

No communications have been received as yet. The proposed new draft appears again in this issue and the former urgent request for objections and corrections is repeated.

LEGISLATIVE BUREAU.

THE members of the Committee on Legislation now have the Legislative Bureau of the Society in working order, and they deserve commendation for the prompt and complete manner in which they make known to the County Society and others interested in public health and the maintenance of professional standards, the proposed measures in support of or inimical to these. Bulletins are issued as frequently as necessary, enumerating the legislative bills in question with a brief digest and the opinion of the Committee concerning the proposed measure.

While such action is the first real step made by this Society in the right direction, and marks a true stride forward in the interest of all that the medical profession stands for, it is by no means sufficient either to frame constructive legislation or to prevent the enactment of laws contrary to the best interests of public health. The Committee on Legislation has created the system by which every member of the Society can be informed promptly of what the lawmakers intend, and it rests with every member of the Society individually how telling the support of the Committee will be on legislation, or how convincing the Committee's objections will appeal to the legislators. If the members of the Society believe that the mere establishment of the Bureau is sufficient to cause the enactment of proposed good laws and the defeat of proposed bad laws they are in serious error. Legislation concerning the physician is the concern of the physician indi-

vidually. The Legislative Committee always does what it can in the best interest of the people of the State, but it remains your duty individually, as it is my duty as an individual, to do what I can to convince my lawmakers as to what is good and what is bad. The Legislative Committee is now at last making this easier for you and me, and because it is now easier you and I now have less excuse for the neglect of our duty to the people of the State and to one another.

The idea that the activities of the medical profession in matters of legislation are limited to destructive criticism has again been voiced recently by one of our most prominent State senators with the prediction that unless the physicians of the Empire State aid promptly in the introduction of constructive legislation to meet the demands of the public in medical and public health questions of the day, the legislature may be forced to enact proposed laws contrary to the best interests of public health and the medical profession, despite even a combined objection of the physicians of the State.

GROUP LIABILITY INSURANCE

At the last meeting of the Executive Committee of the Council, the legal counsel of the Society presented evidence that misunderstanding exists concerning the difference between the Group Liability Policy, issued by the Aetna Insurance Company for members of the Medical Society of the State of New York only, and the Physicians and Surgeons Liability Policy, issued by the same company.

In order to make the matter clear to the members of the Society, the following preamble and resolution were adopted and ordered printed in the JOURNAL:

"WHEREAS, it has come to the attention of Counsel of the State Society that in the Metropolitan District numerous insurance brokers have been representing to physicians that they can secure for them Physicians' and Surgeons' Liability Policies with the Aetna Life Insurance Company at the rate provided for in the arrangement between the Society and the Aetna Life Insurance Company and that these policies are the same as the Group Policy provided by the Society under arrangement with the Aetna Life Insurance Company; and

"WHEREAS, Counsel reports the following comparison of the two policies:

INDIVIDUAL POLICY	GROUP POLICY
1. Injuries must be bodily or death.	1. Injuries include bodily injuries or death or any other type of injury for which claim can be made.
2. The acts insured against are those committed "by the assured personally in the practice of his profession or by any practising physician, surgeon, dentist or registered	2. The acts insured against are those committed "by the assured personally in the practice of his profession or by any assistant while acting under the assured's instruc-

nurse while acting as an assistant under the assured's professional instructions."

3. This does not cover an unlicensed assistant, such as X-ray or galvanic current technician, practical nurse, etc.

4. Notice required under policy: Policy requires notice to be given when assured becomes aware of any malpractice error or mistake or any allegation of the same.

5. This provision leaves open to claim by the insurance company that the assured did not give notice of the claim against him when he first became aware of the mistake or alleged malpractice and is somewhat indefinite.

6. Aetna Life Insurance Co. may select any counsel it pleases to defend a case arising under this policy.

7. This policy has no connection with the State Society's Indemnity Plan.

8. This policy will be furnished by any broker.

tions in the care of a patient, personally attended by the assured, but not necessarily in the presence of the assured.

3. This does cover any unlicensed assistant, such as X-ray or galvanic current technician, practical nurse, etc.

4. Notice required under policy: Policy requires that assured give notice upon receiving notice of malpractice error or mistake.

5. Notice required under this policy is definite and certain and should be given when the assured receives notice of the alleged malpractice.

6. Aetna Life Insurance Co. has agreed with the Medical Society of the State of New York to place the defense of the claim in the hands of Society's counsel.

7. This is the only official indemnity plan provided by the State Society.

8. This policy is furnished only by the officially designated representatives of the Society in the Metropolitan District who have provided proper machinery in their office for prompt co-operation with the officers of the Society in the furtherance of the Group Plan as a whole. These representatives save the Society the expense of conducting the business part of the Group Insurance Plan, so that the Society does not expend any moneys for postage, solicitors or other expenses incident to the matter and no officer or employee of the State Society has any financial interest whatsoever in the premiums paid.

and

"WHEREAS, it appears to the best interests of the physicians of the State, members of this Society, that the Group Insurance Plan should be supported in all cases where physicians and surgeons liability indemnity is desired by the members;

"RESOLVED, that the attention of the members be directed to the above premises, in order that they may not be misled and may obtain the full benefits of the Group Insurance Plan provided by this Society."

PENDING LEGISLATION AT ALBANY

JAMES N. VANDER VEER

Legislative measures have begun to shape themselves at Albany and the Committee on Legislation has its bureau in full swing.

The majority of the chairmen of the County Legislative Committees are loyally bending their efforts toward shaping the sentiments of their legislators against the ill-advised measures which have again made their appearance.

Each chairman of a County Legislative Committee and others who are interested are advised weekly by means of a bulletin sent from the Legislative Bureau of the State Society at Albany, but with the changes in personnel of the county committees, some of the information thus sent may have occasionally gone astray.

The bureau is located at Pine and Chapels streets, and is prepared to furnish information to anyone wishing to know the status of any bill pertaining to medical interests, and requests that any valuable information obtained by any member of the society be immediately transmitted to the bureau.

Of the bills so far introduced, those of importance to date of going to press are:

1. Assembly Bill, Introductory No. 64; concurrent Senate Bill Int. No. 177, makes *mandatory* the presence of a female nurse or female attendant whenever a male physician examines a female patient in his office. This has been referred to the Public Health Committee in the Assembly, and to the similar committee in the Senate.

While the bill contains a "waiver clause," which would allow such examination to be made without the presence of a female nurse or attendant, this would mean the drawing up in writing of such a waiver and signing it in the presence of disinterested witnesses; to say nothing of the fact of transgressing professional and privileged communications; and the inconvenience to be experienced by the 15,000 and more physicians of our State.

2. Assembly Bill, Introductory No. 177, amending sections 570, 571 of the Education Law, is a bad bill. It is again an attempt at State medical practice. It not only makes *mandatory* the providing of physicians, dentists and nurses for services in the public schools of the State, but in addition, in Section 570, calls for the providing of treatment for the pupils. The amended section as introduced is to read "Medical services shall include the services of physicians, surgeons and dentists for the purpose of ascertaining the existence of disease or physical defects, of advising, directing and providing for the correction and prevention of such disease or defects and of providing treatment for the same. The services of trained registered nurses shall be rendered in aid of such services."

Medical men throughout the State should voice their written and spoken objections to this bill to their legislators—and to this committee.

As a form of State medical practice this bill would place the diagnosing and treating of diseases of school children under politics by legislating such work through the school boards, etc., into the medical hands of the appointees of such boards. If carried to the legal extreme, the school board could compel a family to have the school physician attend the child irrespective of the family's choice.

The bill not only concerns the medical profession, because it places the families of a community at the mercy and dictation of a lay board, where in many instances no doctor is on such a board, but takes away by legislation the right of choice of a physician by a family to attend its children.

In instances of legislation such as this, a chairman of a County Legislative Committee of our Medical Society can be of the utmost service to the residents of

his county by arousing sentiment among the laity as well as among the sound thinking physicians of his county against such a move for State medicine. Legislators desire to follow the wishes of their constituents, but if silence is maintained by medical men and laity combined, then those who shout the loudest, no matter what the issue, are the ones to gain the legislator's ear.

3. Assembly Bill, Introductory No. 353, is again our anti-vivisection measure which crops up each year. *It must be fought again as of yore.* It would amend Section 185 of the Penal Law, by prohibiting scientific experiments or investigations upon a living dog, and has been referred to the Codes Committee of the Assembly, of which Mr. William Duke is the chairman.

The amendment is of but one line, "*but such experiment or investigations shall not be made upon a living dog.*"

Readers of the JOURNAL are referred to an article by Ernest Harold Baynes in the *Woman's Home Companion* for July, 1921, wherein is set forth clearly and distinctly in simple language how careful and painstaking laboratory work through the use of animals has resulted in the increase of scientific knowledge, medical and otherwise, which has given our present prolongation of life's span and the alleviation or cure of many painful diseases.

Letters of protest not only from all physicians, but from the sound thinking men and women of every community in this State should be forwarded to the chairman and members of the Assembly Codes Committee in protest against such a bill.

Let the presidents and legislative chairmen of our county societies now exhibit their interest in the protection of their home communities by organizing such an effort. All the interests which introduce legislative matters inimical to the real health of the State at large come to the legislature each year, well organized for their propaganda. It is for the medical profession to do the same—back in the county committees—and for each physician under the guidance of his county president and county chairman on legislation to take up the burden in his community.

The day of the one-man committee for safeguarding the real interests of the physician and the community in the out-of-the-way portions of the State against ill-advised and ill-timed legislation is past! Our life is now too complex, and the burden must be shouldered and divided among those who have been elected or appointed to do certain work in the various subdivisions of our organization. If they do not shoulder the burdens, then the fault is not with the mere handful who try to do their work, but receive no help from those whose interests are most vitally at stake!

4. Assembly Bill, Introductory No. 401, introduced by Mr. Donohue of New York County, again brings up the question of prescribing and distributing narcotics and similar drugs. It would amend Chapter 49 of the Laws of 1909, entitled "An Act in Relation to the Public Health, Constituting Chapter 45 of the Consolidated laws" by inserting a new article therein, to be known as Article 22.

This Act is similar in many respects to those which have been introduced before save that relative to physicians. It compels the physician to obtain order blanks for the purchase of such drugs as enumerated from the State Department of Health. These order blanks must be made out in triplicate when a purchase is made. One copy is sent to the apothecary, the second to the local health officer or to the Department of Health in cities of the first class; and elsewhere in the State the second copy is sent direct to the State Department of Health. The third copy must be retained on file by the physician for two years. If a physician buys narcotic drugs, using his federal blanks, as obligated under the Harrison Law, he is compelled to make a "true and correct copy of the order" and file this extra copy above!

Sub-section 5, dealing with physicians, allows a physician to prescribe certain small amounts of the drugs mentioned in the act, without further hindrance. He may issue a prescription in excess of the above amounts "as may reasonably be required in the treatment of a surgical case or a disease other than drug addiction, provided such fact be stated upon the prescription." (Attention is called to the Harrison Act.)

Each other prescription which he writes is hedged about with duplicate prescription blanks, Federal registry number, the other provisions of the Harrison Act—and further a statement as given by the patient of when and by whom he was last treated and the name and amount of the drug prescribed or dispensed.

The physician may administer or dispense directly to a patient small amounts of certain drugs. Larger amounts of these drugs must be recorded in duplicate upon a "blank" with certain requirements as to federal number, date, etc. The original is kept for two years, the duplicate forwarded as above. No provision is made as to type or size of such blank, nor by whom furnished. He may also prescribe for drug addicts subject to above safeguards, after a personally conducted physical examination. Such drugs may be prescribed but in "good faith"—and the latter is defined early in the bill.

Indian hemp, or any of its habit forming derivatives, needs a special permit for its possession, issued by the officials as above.

Hypodermic syringes or hypo needles may only be possessed by certain persons unless authorized by the certificate of a physician issued within the period of one year, prior thereto.

Section 434, Sub-section 4, makes it mandatory for a physician to keep a record of all such drugs as enumerated, when purchased or received, separately as to date of each drug and its purchase or receipt, name and address from whom received, etc. It also requires that he keep a record of the gross amount of each such drug administered to patients; dispensed by him while absent from office in personal attendance; and dispensed by him to patients in quantity not exceeding lawful quantity; also a record of each of such drugs otherwise dispensed by him with certain addenda for recognition.

Section 441 gives the power of revocation of license of physicians, dentists, etc., to the several grantors of such licenses if the holder is proven to be a drug addict, with power later of reinstatement.

And whenever any physician, dentist, etc., shall have been convicted of a violation of any of the provisions of this bill his license may be suspended or revoked after reasonable notice and opportunity to be heard.

The burden of proof has been shifted, however, from plaintiff to you, the defendant, after complaint, information, or indictment has been laid.

This is contrary to our laws, by assuming that a man is guilty before legally proving him so. The bill contains all of the bad features of previous bills.

Why should *all of the physicians* of this State be put to such great inconvenience in bookkeeping of narcotic drugs when the present Federal Act is all sufficient, *and needs but its enforcement*, to trap the doctors who are guilty of peddling? A new law will not prevent drugs from being smuggled into the State. The doctors are not the smugglers in even a small per cent of cases. The doctors are not the peddlers, save in an occasional instance, and such physicians are known to the police of every community. Enforce the present law; the records of sales are on file in the drug stores, wholesale and retail. Let the honest physician go unharassed, for in the loss of time by him in bookkeeping his honest patients must make up his expense so incurred.

Fight such a bill as it has been fought before, and make the police powers do their duty in prosecuting the known guilty ones and in using the evidence already in hand for discovering those with fresh guilt.

The guilds of the State will fight such a bill, for in its enactment all of their professional adherents are deeply concerned.

Senate bills so far introduced which deeply concern us are:

1. Senate Bill Int. No. 177, which is the same as Assembly Int. No. 64.

2. Senate Bill Int. No. 185, amending Sections 300, 303, 303a, 307 of the Public Health Law, and is one raising the educational features in the practice of optometry; while defining its practice anew. It is more of an educational bill and is approved as at present by the State Education Department.

The other Assembly bills have not shown themselves in the Senate at the time of this article.

Special attention is called to the two bills introduced on Monday evening, January 30th, for which hearty support is urged from the county societies *en masse*, and through the various individual members writing to their legislators.

1. Bill No. 1 makes changes in the type of examinations, by allowing for practical examinations in addition to the written ones. It also makes certain other changes in the Medical Practice Act concerning administration and licensure.

2. Bill No. 2 is an amendment to the Public Health Law in relation to the practice of medicine, taking the prosecution of such offenders from the hands of the local District Attorney and placing it in the hands of the State Attorney General.

Both of these bills strengthen the medical profession against the inroads of the cultists and fanatics and have the unanimous endorsement and backing of the Medical Society of the State, the Medical Council, which is composed of the State Board of Medical Examiners and the Deans of the several medical schools of the State, and of the State Education Department.

If the individual members of the State Society will now exert their personal efforts and use their pens and ink the bills can be passed over the heads of those who would obstruct to lower our State standards.

THE ST. LOUIS MEETING OF THE AMERICAN MEDICAL ASSOCIATION

The May meeting of the American Medical Association at St. Louis promises well toward being the largest in attendance of any of the Association's sessions. Since the publication of the hotels in the Journal of the Association in December, inquiries and reservations are being made daily. The hotels and the Conventions Bureau are aiding the Committee in a most satisfactory and helpful way to see that fellows are comfortably housed and accommodated. The A. M. A. meetings tax all cities entertaining them to the limit of hotel capacity. Whenever possible a good Fellow should double up so that no one is left without comfortable lodging.

Reservations should be made by communicating direct with the hotels. If satisfactory arrangements cannot be made in this way, write to Dr. Louis H. Behrens, Chairman Committee on Hotels, 3525 Pine Street, St. Louis, Mo.

LIST OF ST. LOUIS HOTELS (ALL EUROPEAN PLAN)

American, 7th and Market Sts.; American Annex, 6th and Market Sts.; Beers, Grand and Olive Sts.; Brevort, 4th and Pine Sts.; Cabanne, 5545 Cabanne St.; Claridge, 18th and Locust Sts.; Hamilton, Hamilton and Maple Sts.; Jefferson, 12th and Locust Sts.; Laclede Hotel, 6th and Chestnut Sts.; Majestic, 11th and Pine Sts.; Marion Roe, Broadway and Pine Sts.; Marquette, 18th and Washington Sts.; Maryland, 9th and Pine Sts.; Planters, 4th and Pine Sts.; Plaza, 3300 Olive St.; Roselle, 4137 Lindell Blvd.; St. Francis, 6th and Chestnut Sts.; Statler, 9th and Washington Sts.; Stratford, 8th and Pine Sts.; Terminal, Union Station; Warwick, 15th and Locust Sts.; Westgate, Kingshighway and Delmar Sts.

STATE DEPARTMENT OF HEALTH.

AFTER-CARE OF POLIOMYELITIS.

It will be recalled that after the epidemic of poliomyelitis in 1916 appropriations were made by the legislature to enable the State Department of Health to supervise the after-care of patients, always with the consent and at the request of the family physician. This is done under the direction of an orthopedic surgeon on the staff of the department who holds special clinics with the aid of staff nurses and of the local physicians and nurses.

At the beginning of 1921 the total number of cases under observation was 1,306, of which 487 were old cases having the onset previous to 1916. It had been expected that the total would be materially reduced by recoveries and discharges during 1921 but the state-wide outbreak of poliomyelitis beginning in July, 1921, completely changed the outlook so that the volume of the work increased rather than diminished during the year. Out of 467 new cases reported during 1921, 452 have been investigated, with the result of finding that 93 had recovered, 78 had died, 21 had moved out of the jurisdiction of the Department, 40 were under treatment by private physicians, and 12 had refused treatment or were being treated by osteopaths, chiropractors or other irregular practitioners. This leaves 208 of the 1921 cases which are now being supervised by the State Department of Health and brings the total of cases now under observation up to 1,498, of which 537 are classed as old cases with the onset previous to 1916.

The fact that 208 patients out of the 260 available cases last year have come under state care may be considered evidence of the interest which the physicians have taken and of their appreciation of the work which has been done by the State Department in the after-care of poliomyelitis during the past five years.

MATERNAL AND INFANT MORTALITY

In view of the present interest in the proposals for Federal subsidies to the states for the reduction of preventable mortality among mothers and children at the time of birth, the Division of Vital Statistics has compiled new data covering New York State outside of New York City. It appears that the average annual number of deaths under 15 years of age is now 14,956; under 5 years of age it is 12,848; under 1 year of age it is 9,421; and under one month of age over 4,000 infants die annually.

Of the children who die under 15 years of age, over one-quarter succumb to congenital debility, malformations, etc.; about 17 per cent to gastro-intestinal diseases; over 14 per cent to respiratory diseases, especially pneumonia; over 5 per cent to accidents and over 8 per cent to communicable diseases. Annually 4,000 babies are born dead every year in New York State, exclusive of New York City. The majority of these stillbirths are held to be preventable if the mothers could receive adequate, scientific care before and during childbirth.

Over 700 women die annually from diseases and other conditions which occur before or during the birth of their children. Over one-half of these mothers die from such causes as septic infection and convulsions.

In sum, the net annual loss to the state exclusive of New York City is almost 20,000 lives of children under 15 years of age and of mothers who died from causes related to the maternal condition.

POST-GRADUATE COURSE.

The fourth annual post-graduate course in Infectious Diseases and Public Health given through the co-operation of the Albany Medical College and the State Department of Health will begin March 2, 1922, under the direction of Charles C. Duryee, M.D. Registration is limited to graduates in medicine and as far as practical the course will consist of informal conferences, practical demonstrations and clinics.

REVISED CONSTITUTION AND BY-LAWS
OF THE MEDICAL SOCIETY OF THE
STATE OF NEW YORK

CONSTITUTION

ARTICLE I.

PURPOSE OF THE SOCIETY.

The purposes of the Society shall be to federate and bring into one compact organization the medical profession of the State of New York; to extend medical knowledge and advance medical science; to elevate the standard of medical education and to secure the enactment and enforcement of just medical laws; to promote friendly intercourse among physicians; to guard and foster the material interests of its members, and to protect them against imposition; and to enlighten and direct public opinion in regard to the great problems of State medicine. (Same as old Constitution.)

ARTICLE II.

COMPONENT COUNTY MEDICAL SOCIETIES.

SEC. 1. The terms county medical society and component county medical society shall be deemed to include all county medical societies now in affiliation with this Society or which may hereafter be organized and chartered by the House of Delegates. (Source Const., Art. II, Sec. 1.)

SEC. 2. There shall be but one county medical society in each county affiliated with this Society. (Source By-laws, Chap. X, Sec. 1.)

SEC. 3. If there should be an insufficient number of physicians and surgeons in any of the counties of this State to form themselves into a medical society agreeably to law, such physicians may become members of the component county medical society of an adjoining county when eligible by the Constitution and By-laws of such society of such adjoining county. (Source, original charter, Sec. 24.)

ARTICLE III.

DISTRICT BRANCHES.

SEC. 1. The membership of the Society shall be divided into eight district branches, as follows:

The First District Branch shall comprise the members of the Medical societies of the Counties of Bronx, New York, Westchester, Rockland, Putnam, Orange, Dutchess and Richmond.

The Second District Branch shall comprise the members of the medical societies of the Counties of Kings, Queens, Nassau and Suffolk.

The Third District Branch shall comprise the members of the medical societies of the Counties of Albany, Rensselaer, Schoharie, Green, Columbia, Ulster and Sullivan.

The Fourth District Branch shall comprise the members of the medical societies of the Counties of St. Lawrence, Franklin, Clinton, Essex, Hamilton, Fulton, Montgomery, Schenectady, Saratoga, Warren and Washington.

The Fifth District Branch shall comprise the members of the medical societies of the Counties of Onondaga, Oneida, Herkimer, Oswego, Lewis, Madison and Jefferson.

The Sixth District Branch shall comprise the members of the medical societies of the Counties of Otsego, Delaware, Chenango, Cortland, Tompkins, Schuyler, Chemung, Tioga, Broome and Steuben.

The Seventh District Branch shall comprise the members of the medical societies of the Counties of Monroe, Wayne, Cayuga, Seneca, Yates, Ontario and Livingston.

The Eighth District Branch shall comprise the members of the medical societies of the Counties of Erie, Niagara, Orleans, Genesee, Wyoming, Allegany, Cattaraugus and Chautauqua. (Source Const., Art. II, Sec. 3; By-laws, Chap. VIII.)

SEC. 2. Each District Branch may adopt a constitution and by-laws for its government, subject to the same being duly approved as provided by the Constitution and By-laws of this Society. (Source By-Laws, Chap. VIII, Sec. 4.)

ARTICLE IV.
MEMBERSHIP.

SEC. 1. The membership of this Society shall be divided into three classes: (1) active; (2) retired and (3) honorary. (Source Const., Art. II, Sec. 1. By-laws, Chap. I, Secs. 2-3.)

SEC. 2. The active members shall be all members in good standing of the component county medical societies. (Source Const., Art. II, Sec. 1.)

SEC. 3. The retired members of this Society shall be those now on the roster of the Society as such and in addition such members of component county medical societies who are seventy years of age or over and who by a majority vote of the House of Delegates present and voting at any annual meeting shall be elected to such membership. (Source By-laws, Chap. I, Sec. 2.)

SEC. 4. The honorary members of the Society shall be all persons now on the roster as such and in addition such distinguished physicians residing outside of the State of New York who shall be elected to honorary membership at any annual meeting of the House of Delegates by a two-thirds vote of the delegates present and voting, provided the nomination shall have been made at a previous annual meeting. (Source By-laws, Chap. I, Sec. 3.)

SEC. 5. Honorary and retired members shall be entitled to the privilege of attending and addressing the meetings of the Society, but shall not be accorded the other rights and privileges of membership or be subject to assessments. (Source By-laws, Chap. I, Sec. 3.)

ARTICLE V.
OFFICERS.

SEC. 1. The officers of the Society shall be a President, a Vice-President, a Speaker and a Vice-Speaker of the House of Delegates, a Secretary, an Assistant Secretary, a Treasurer, an Assistant Treasurer and one Councilor from each District Branch. Each of said officers, with the exception of the councilors shall be elected by the House of Delegates and his term of office shall begin at the termination of the annual meeting of the House of Delegates and shall be for one year or until his successor or successors shall have been duly chosen. The term of office for the Councilor from each of the district branches shall be for the term of two years and such Councilor shall be elected by the District Branch in which he may reside and shall be the President thereof. (Source Const., Art. III, Secs. 1 and 2.)

ARTICLE VI.
HOUSE OF DELEGATES.

SEC. 1. The House of Delegates shall be composed of (1) Delegates elected by the component county medical societies; (2) Officers of the Society; (3) Chairman of standing committees who shall be ex-officio members thereof. Each said component county medical society shall be entitled to elect as many delegates as there shall be State Assembly Districts in such county at the time of the election, and each such component county medical society shall be entitled to elect at least one delegate, and if at the time of such election membership of the component county medical society shall include members from an adjoining county, in which there is no county medical society, such component county medical society shall be entitled to elect from any such members as many additional delegates as there are Assembly Districts in the county or

counties so represented in its membership. (Source Const., Art. IV.)

SEC. 2. The House of Delegates shall be the legislative body of the Society; shall be charged with the general management, superintendence and control of the Society and its affairs and shall have such general powers as may be necessarily incident thereto and shall have power to suspend or otherwise discipline component county medical societies; to provide for a division of the scientific work of the Society into appropriate sections, to provide for the organization of the District Branches, to adopt rules and regulations for its own government and for the administration of the affairs of the Society and to delegate to the Council such power and authority as may be necessary to the efficient administration of the affairs of the Society while the House of Delegates shall not be in session. (Source Const., Art. IV.)

ARTICLE VII.
COUNCIL.

SEC. 1. The Council shall be composed of (1) officers of the Society, except the assistant secretary and assistant treasurer; (2) chairmen of the standing committees; (3) the retiring President for a term of one year after his term of office expires. (Source Const., Art. V.)

SEC. 2. The Council shall be the executive body of the Society and shall have charge of all properties and the financial affairs of the Society; shall elect an *Executive Committee of the Council to carry on during the interim between the regular meetings of the Council the affairs and the business of the Society in accordance with the By-laws*; shall adopt rules and regulations for its own government and for the administration of the affairs of the Society within its control, not repugnant to the Constitution and By-laws of the Society or to the rules and regulation which may be adopted by the House of Delegates and shall have such additional powers and duties as the By-laws may prescribe. (Source Const., Art V. Also new matter indicated.)

ARTICLE VIII.
CENSORS.

SEC. 1. The Society shall elect annually not more than twelve nor less than six Censors. (Source Laws of 1818, Chap. 206.) At least eight of said number shall consist of the President or the Vice-President when necessary, Secretary, and District Councilors and they shall be known as the Board of Censors of the Society. The Board of Censors shall have jurisdiction to hear and determine all appeals from the decision of component county medical societies which may involve the rights and standing of members whether in relation to one another or to county medical societies or to this Society. (Source By-laws, Chap. V, Sec. 1.) Five Censors shall constitute a quorum. Any member of any component county medical society, feeling aggrieved at the action of such Society may within six months after such action shall have been taken, appeal to the Board of Censors of this Society from the decision of such component county medical society, and any applicant for membership in such component county medical society who may have been excluded from membership in such Society, may likewise appeal from the action of said Society excluding him. (Source new Membership Corporation Law, Sec. 214.) (New, except as indicated.)

ARTICLE IX.
MEETINGS.

SEC. 1. "The Medical Society of the State of New York may, from time to time, change the place and day of holding its annual meeting to such other place and day in the year as may be more convenient, by a two-thirds vote of all the members of the House of

Delegates of said Society present at any anniversary or annual meeting of said Society, provided, that no such change shall be made unless notice of the intention to change the time and place of such annual meeting shall have been first given at a previous regular annual meeting. An entry in the minutes of said Society of notice of such intention to change the time and place of the annual meeting, and an entry in such minutes of the vote taken upon any motion made pursuant to any such notice shall be prima facie evidence of such notice, motion, and the vote had thereon respectively." (Laws of 1909, Chap. 213, Const., Art. VI, Sec. 1.)

SEC. 2. Intermediate stated meetings may be held at such time and place as the House of Delegates may appoint. (Source Const., Art. VI, Sec. 2.)

ARTICLE X.

FUNDS.

SEC. 1. Funds shall be raised by an annual per capita assessment on each component county society at a uniform per capita rate throughout the State, and the aggregate of such assessments for any member in any one year shall not exceed five dollars. (Source Const., Art. VII, Sec. 1.) (Membership Corporation Law, Sec. 215.) *Funds may also be raised in any other manner approved by the House of Delegates or by the Council when the said House of Delegates shall not be in session* and no funds of the Society shall be appropriated for any purpose, except by the authority of a resolution of the Council, nor shall any indebtedness be incurred by any officer, by members of Committees or members of the Society as a charge against the Society until the same shall have been approved by the Council. (Source Const., Art. VII, new matter indicated.)

ARTICLE XI.

REFERENDUM.

SEC. 1. At any annual or stated meeting of the Society or of the House of Delegates a majority of the members present may order a general referendum on any question in accordance with such general regulations respecting the manner of submission as the House of Delegates may prescribe. Members of the Society may vote thereon by mail or by roll call in open meeting. The poll on the question shall be closed at the expiration of ten days after the general submission; and if the members voting shall comprise a majority of all the members of the Society, a majority of such vote shall determine the question and be binding on the Society and the House of Delegates. (Source Const., Art. VIII, Secs. 1-2.)

ARTICLE XII.

AMENDMENTS.

SEC. 1. Amendments to this Constitution except such as are obligatory by law, can be made only at an annual meeting of the House of Delegates.

SEC. 2. Notice of the proposed amendment shall be given at a previous annual meeting of the House of Delegates, and before the same can be acted upon, it shall be published twice before the annual meeting in the official bulletin or journal of the Society or sent, when so ordered by the House of Delegates to each component county medical society at least two months before the meeting, at which time final action shall be taken thereon.

SEC. 3. The affirmative vote of two-thirds of the delegates present and voting shall be necessary for adoption.

SEC. 4. Amendments made necessary by law shall be made either by the Council or House of Delegates whenever such necessity exists.

SEC. 5. This Constitution shall take effect immediately, except that the term of office of any councilor now in office whose term of office shall not have expired, shall continue for the term for which he was duly elected.

BY-LAWS.

CHAPTER I.

MEMBERSHIP.

SEC. 1. A copy of the roster of members in good standing of component county medical societies certified by the Secretary of such society to be correct shall be *prima facie* evidence of the right of the members whose names appear therein to membership in this Society. (Source By-laws, Chap. I, Sec. 1.)

SEC. 2. Active members who are eligible for retired membership in this Society may apply therefor, and such applications must be approved and endorsed by the President and Secretary of the component county medical society to which such applicant belongs and thereupon sent to the Secretary of this Society in time for presentation at the first meeting of the annual session of that year of the House of Delegates. (Source By-laws, Chap. I, Sec. 3.)

SEC. 3. All nominations for honorary membership must be endorsed by three members of the Society and forwarded to the Secretary in time for presentation at the first session of the annual meeting of that year of the House of Delegates. (Source By-laws, Chap. I, Sec. 3.)

SEC. 4. Any member ceasing to be a member of a component county medical society shall cease to be a member of this Society. (Source Const., Art. II, Sec. 1.)

CHAPTER II.

MEETINGS.

SEC. 1. The notices of the annual, regular and special meetings of the Medical Society of the State of New York, its House of Delegates, Council and Censors shall state the date, place and hour and shall be mailed in securely postpaid wrapper to each member of the body holding such meeting at least ten days before said meeting. The affidavit of mailing by the Secretary of the Society to the last recorded address of the member shall be deemed sufficient proof of the service upon each and every member for any and all purposes. (Source Const., Art. II, Sec. 3.)

SEC. 2. Each member in attendance at the annual meeting, special or intermediate stated meetings of the Society shall enter his name and the name of the component county medical society to which he belongs in a register to be kept by the Secretary of the Society for that purpose. No member shall take part in any of the proceedings of such a meeting until he shall have complied herewith. (Source By-laws, Chap. II, Sec. 1.)

SEC. 3. All members in good standing so registered may attend and participate in the proceedings and discussions of the general meetings of the Society and of the sections. (Source By-laws, Chap. II, Sec. 2.)

SEC. 4. It shall be the duty of the Secretary of the Society to present annually to the House of Delegates, a resolution providing for the date and place of holding the next annual meeting and according to the provisions of law, a two-thirds vote of the House of Delegates is necessary to pass the resolution. Should such resolution be not introduced, the House of Delegates hereby delegate authority to the Council to fix the time and place of such meeting. (New.)

SEC. 5. The following shall be the order of business at all general meetings of the Society:

1. Calling the Society to order.
2. Address of welcome by the Chairman of the Committee on Arrangements.
3. Reading the minutes of the last meeting.
4. Reports of special committees.
5. Special addresses.
6. President's address.
7. Reading and discussion of papers.
8. Miscellaneous business.

(Source By-laws, Chap. II, Sec. 3.)

SEC. 6. Special meetings of the Society shall be

called by the President upon the request of one hundred members; and in case of the failure, inability or refusal of the President to act, such meeting may be called by a notice thereof subscribed by one hundred members. (Source By-laws, Chap. II, Sec. 4.)

SEC. 7. Special meetings of the House of Delegates shall be called by the Speaker upon the request of fifty delegates; and in case of the failure, inability or refusal of the President to act, such meetings may be called by a notice thereof subscribed by fifty delegates. (Source By-laws, Chap. II, Sec. 5.)

CHAPTER III.

HOUSE OF DELEGATES.

SEC. 1. The House of Delegates shall meet annually on the day before the annual meeting of the Society. The meeting may be adjourned from time to time as may be necessary to complete business, providing that the sessions shall conflict as little as possible with the annual meeting of the Society. (Source By-laws, Chap. III, Sec. 1.)

SEC. 2. Thirty delegates shall constitute a quorum. (Same as old By-laws.)

SEC. 3. The House of Delegates shall make careful inquiry into the condition of the profession in each county of the State, and shall have authority to adopt such methods and measures not in conflict with the Constitution and By-laws of the Society as it may deem most efficient for building up and increasing the interest in such county societies as already exist; for organizing the profession in counties where societies do not exist and for organizing district branches. (Source By-laws, Chap. III, Sec. 3.)

SEC. 4. It shall elect delegates to the House of Delegates of the American Medical Association in accordance with the Constitution and By-laws of that body, and it may elect or appoint such other delegates as in its judgment, the interests of the Society may require, and it shall provide for the issue of credentials to all delegates. (Same as old By-laws.)

SEC. 5. It shall upon application provide for the issue of charters to county societies in affiliation with the Society, and it shall hear and finally determine all appeals taken from decisions of the Board of Censors. (Same as old By-laws.)

SEC. 6. It shall have authority to appoint committees for special purpose from among members of the Society. Each committee shall report to the House of Delegates and to the Council when it so desires and also when requested by it when the House of Delegates shall not be in session. (Source By-laws, Chap. III, Sec. 6. New portion indicated.)

SEC. 7. It shall have authority to organize the physicians of two or more sparsely settled and adjoining counties into societies to be suitably designated so as to distinguish them from district branches; and the societies so organized shall be entitled to all rights and privileges of county societies and the members thereof to the rights and privileges of members of county societies. (Same as old By-laws.)

SEC. 8. The following shall be the order of business at the sessions of the House of Delegates:

1. Calling the meeting to order.
2. Roll call by the Secretary.
3. Reading of the minutes of the previous meeting.
4. Address of the President.
5. Address of the Speaker.
6. Report of the Council.
7. Report of the Secretary.
8. Report of the Treasurer.
9. Reports of standing committees.
10. Reports of special committees.
11. Unfinished business.
12. New business.

(Same as old By-laws.)

SEC. 9. The officers and committees of the Society to be elected by the House of Delegates shall be elected at an adjourned session of the annual meeting of the House of Delegates, which adjourned session shall be held at a convenient hour on the first day of the annual meeting of the Society. No members shall be eligible for any office, or entitled to vote for any officer or delegates who is in arrears for county dues and State Society per-capita assessment. (Source By-laws, Chap. III, Sec. 9.)

SEC. 10. Method of Holding Elections.—All elections shall be by ballot, each delegate depositing his ballot upon call of the roll, and a majority of the votes cast shall be necessary to elect. In the event of a single nominee only for any office, a majority vote without ballot shall elect. In case no nominee receives a majority of the votes on the first ballot, the balloting shall continue until one of the nominees receives a majority of all the votes cast, when he shall be declared elected, but in case no delegate or alternate for the American Medical Association receives on the first ballot a majority of the votes, the nominees shall be declared elected in the order of the highest number of votes received, until the allotted number shall have been chosen. In case of a tie vote for delegate or alternate a new ballot shall be taken. No ballot for any office shall be taken while a ballot for another office is being taken. (Chiefly new matter.)

SEC. 11. A delegate shall not be considered in good standing or entitled to vote in the House of Delegates if the component county medical society by which he was chosen is in default in the payment of any dues or assessments imposed by the House of Delegates or if such component county medical society shall at the time be under sentence of suspension imposed by the House of Delegates or if such delegate is not in good standing in this Society or in the component county medical society to which he belongs. (Source By-laws, Chap. I, Sec. 1.)

CHAPTER IV.

COUNCIL.

SEC. 1. The Council shall meet at the close of the annual meeting of the Society, to organize for the ensuing year.

It shall meet once during the months of May and December of each year, the time and place to be selected by the President, and it shall meet at other times upon the request in writing of five members of the Council, or upon the call of the President.

SEC. 2. Seven members shall constitute a quorum. (By-laws, Chap. IV, Sec. 1 and 2.)

SEC. 3. The Council shall elect by majority vote an Executive Committee consisting of seven members of the Council, one of whom shall be the President, one the Secretary and five other members of the Council, at the regular meeting of the Council held at the close of the annual session of the Society. The President shall nominate the candidates for election to the Executive Committee, and other candidates may be nominated by any member of the Council. The Executive Committee shall hold office until the following annual meeting of the Council or until their successors shall be duly chosen. The Executive Committee shall upon election, organize immediately for business, elect a Chairman, a Vice-Chairman and a Secretary. The Executive Committee shall hold regular meetings at times and places that shall be fixed by the Chairman and any two members of the Executive Committee may require the Chairman thereof to call a meeting for such time and place as shall be designated by them, in writing, of which the members shall have at least two days' notice. Four members shall constitute a quorum. (Source—Present rules of Council.)

SEC. 4. The following shall be the order of business at meetings of the Executive Committee:

1. Calling the meeting to order.
2. Roll call.
3. Reading of minutes.
4. Reports and communications.
5. Unfinished business.
6. New business. (Source—same.)

SEC. 5. The Executive Committee shall superintend all publications of the Society and their distribution and shall have authority to appoint an editor and such assistants as it may deem necessary. The Executive Committee shall have such other powers and duties as may be delegated to it from time to time by the Council. It shall act as advisor to the legal counsel of the Society in suits brought against members of the Society for alleged malpractice. (Source—same.)

It shall examine the Constitution and By-laws and all amendments, additions or alterations thereto which may be submitted to the Council for approval and shall report to the Council its approval or disapproval thereof. The Chairman of the Executive Committee may, or any two members of the Committee may require the Chairman to order a referendum vote by the members of the Council on any question that may come before the Executive Committee and members of the Council may vote thereon by mail or telegram. The poll on the question so submitted shall be closed at the expiration of five days after such submission, and if the members of the Council voting shall comprise a majority of all the members of the Council, a majority of such vote shall determine the question and be binding upon the Council and the Executive Committee.

In case of any vacancy in the Executive Committee through death, resignation, disqualification or other cause, the President shall appoint a successor to fill such vacancy until the next meeting of the Council.

The Executive Committee may adopt rules and regulations for its own government and for the administration of the affairs of the Society not repugnant to the Constitution and By-laws of the Society or to the rules and regulations which may be adopted by the House of Delegates or the orders of the Council.

SEC. 6. All moneys of the Society received by the Council shall be paid to the Treasurer of the Society. The Council shall audit the annual accounts of the Treasurer and Secretary and other agents of the Society and present a statement of the same in its annual report to the House of Delegates. The Council shall likewise make a report to the House of Delegates of its transactions for the year and of the amount of money belonging to the Society under its control.

The Council shall have power to fill any vacancies which may occur in any elective or appointive office not otherwise provided for. (Source By-laws, Chap. IV, Sec. 3.)

SEC. 7. The Council between meetings of the House of Delegates may legislate as a House of Delegates upon any matter over which the House of Delegates would have jurisdiction if in session, but such legislation shall be consistent with any action taken by the House of Delegates during said year on said matter and it shall have power to take all action necessary to give full effect to any action taken during said year by the House of Delegates for the purpose of promoting the best interests of the Society. When occasion arises for the Council to exercise its power as a House of Delegates when the House of Delegates is not in session such legislative action of the Council shall not become effective unless submitted to a referendum of the House of Delegates and approved by a majority thereof. Ten days shall be allowed between the submission of such referendum and the closing of the vote.

SEC. 8. The Council also shall have general supervision of all arrangements for the annual meeting. (Same as old By-laws.)

SEC. 9. The standing or special committees of the Society, whether appointed under the By-laws or special action of the House of Delegates or of the Council, shall when ordered by the House of Delegates or requested by the Council, report to the Council and shall be subject to the jurisdiction of the Council at all times when the House of Delegates shall not be in session. (Part new.)

SEC. 10. The following shall be the order of business at meetings of the Council:

1. Calling the meeting to order.
2. Roll call by the Secretary.
3. Reading of minutes and communications from the Secretary.
4. Communications from the Treasurer.
5. Communications from the chairmen of standing committees.
6. Unfinished business.
7. New business. (Same as old By-laws.)

CHAPTER V.

CENSORS.

SEC. 1. All appeals to the Board of Censors of this Society shall be made in writing and shall contain a digest of the testimony of witnesses heard and evidence received in the proceeding before such component county medical society and a copy of the decision of such society and a specification of the appellant's exceptions to the decision appealed from. The Board of Censors shall decide the matter on said papers, unless in their opinion, the taking of further evidence is deemed advisable, in which event the said Board may proceed to take such evidence and upon the whole case make a final disposition of the matter. (New.)

CHAPTER VI.

DUTIES OF OFFICERS.

SEC. 1. The President or the Vice-President when necessary shall preside at all meetings of the Society, the Council and the Censors. The President shall appoint all committees not otherwise provided for. He shall deliver an address at the annual meeting of the Society, and he shall perform such other duties as custom and parliamentary usage may require. He shall be *ex officio* a member of all standing committees. (Source By-laws, Chap. VI, Sec. 1.)

SEC. 2. The Vice-President shall assist the President in the discharge of his duties, and in his absence the next ranking officer shall perform such duties. In the event of the President's death, resignation, removal, incapacity or refusal to act, the Vice-President shall succeed him. (Source By-laws, Chap. VI, Sec. 2.)

SEC. 3. The Speaker shall preside at all meetings of the House of Delegates. He shall deliver an address at the annual meeting and shall perform such other duties as custom and parliamentary usage may require. He shall appoint all special committees *during the meeting* of the House of Delegates. (Source By-laws, Chap. VI, Sec. 3. New part indicated.)

SEC. 4. The Vice-Speaker shall perform the duties of the Speaker when requested by the Speaker to do so, or in case of the death, resignation or refusal of the Speaker to act in that capacity from any cause. (Same as old By-laws.)

SEC. 5. The Secretary shall attend all meetings of the Society, the House of Delegates, the Council and the Censors, and shall keep minutes of their respective proceedings in separate records. He shall be the custodian of the seal of the Society, and of all books of records and papers belonging to the Society, except such as properly belong to the Treasurer, and shall keep an account of and promptly turn over to the Treasurer all funds of the Society which come into his hands. He

shall provide for the registration of the members at all sessions of the Society. With the aid and co-operation of the secretaries of the county societies, he shall keep a proper register of all the registered physicians of the State by counties. He shall aid the Councilors in the organization and improvement of the county societies and the extension of the power and influence of the Society. He shall conduct the official correspondence notifying members of meetings, officers of their election and committees of their appointment and duties. He shall affix the seal of the Society to all credentials issued to members of the Society elected or appointed by the House of Delegates and to such other papers and documents as may require the same. He shall make an annual report to the House of Delegates. He shall supply each county society with the necessary blanks for making their annual reports to this Society. Acting under the direction of the Committee on Scientific Work he shall prepare and issue all programs. The amount of his salary shall be fixed by the Council. He shall be *ex officio* a member of all standing committees. He shall make entry of the name of each and every member of the Society and the time of his admission and shall include in his minutes an annual report of the state of the treasury. (Source By-laws, Chap. VI, Sec. 5. Last part new.)

SEC. 5a. The Assistant Secretary shall aid the Secretary in the work of his office and in his absence or inability to act, perform the duties of the latter until he shall resume his duties, or in case of a vacancy until a successor shall be appointed. When acting as Secretary he shall have all the rights and privileges of that office, not otherwise. (Same as old By-laws.)

SEC. 6. The Treasurer shall keep accurate books of accounts of all moneys of the Society which he may receive, and shall disburse the same when duly authorized by the Council; but all checks drawn by the Treasurer upon the funds of the Society shall be countersigned by the President or by the Secretary of the Society. He shall give security for the faithful performance of his duties, which shall be approved and placed in the custody of the President. He shall make an annual report to the House of Delegates. The Treasurer shall be a trustee of the Merritt H. Cash Fund, and Lucien Howe Fund, and such other special funds as may be established. His salary shall be fixed by the Council. The report of the Treasurer to the House of Delegates and the acceptance of the same by the House of Delegates shall constitute an approval by the Society of the actions of the Treasurer in accordance with law. (Same as old By-laws, except last part new.)

SEC. 7. The Assistant Treasurer shall aid the Treasurer in the work of his office, and in his absence or inability to act, perform the duties of the latter until he shall resume his duties, or in case of a vacancy until a successor shall be appointed. When acting as Treasurer he shall have all the rights and privileges of that office, not otherwise. (Same as old By-laws.)

SEC. 8. Each District Councilor shall visit the counties of his district at least once a year. He shall make an annual report of his work and of the condition of the profession in each county in his district at the annual session of the House of Delegates. (Same as old By-laws.)

SEC. 9. The expenses actually incurred in the performance of the official duties of delegates of the Society to the meetings of the House of Delegates of the American Medical Association, of officers, members of the Council and Executive Committee thereof, presidents of the District Branches, shall be paid by the Society upon submission in conformity with the following conditions: the Delegates of the House of Delegates of the American Medical Association shall be reimbursed or allowed the actual cost of railroad transportation from the place of their residence to the

place where such meeting is held and return, including the cost of Pullman accommodation and such allowance shall be made to such delegates provided such delegates shall have attended each session of the meeting of the said House of Delegates to which he was elected and he shall have presented to the Secretary of this Society, evidence of such attendance and the incurrence of such expenses. The President and the Secretary of the Society shall be reimbursed or allowed for traveling within the State, that is necessary for the performance of their duties as such officers and which is actually done in the performance of such official acts as such officers, the actual cost of railroad transportation or its equivalent, from the place where such officer resides to his destination, including the cost of Pullman accommodation and return and a further allowance, where the same is actually incurred and necessary during the time actually occupied in such official activities, of a sum for maintenance not to exceed ten dollars per diem and such officers shall present to and file with the Secretary, a proper voucher therefor. The members of the Council and the Executive Committee thereof, shall be reimbursed or allowed for expenses incurred in the attendance upon meetings of said Council or Executive Committee, the actual cost of railroad transportation or its equivalent, including Pullman accommodation, from the place of their residence to the place where such meeting or meetings shall be held and return, and such member of said Council or Committee shall present to and file with the Secretary, a voucher therefor. The officers of the District Branches of the Society shall be reimbursed or allowed for expenses incurred in the attendance upon meetings attended by them in the performance of their official duties, the actual cost of railroad transportation or the equivalent thereof, including Pullman accommodation, from the place of their residence to the place where such meeting or meetings shall be held and return, and such officer shall present to and file with the Secretary, a voucher therefor. Each District Branch shall be entitled to receive a sum not to exceed one hundred dollars per annum to defray the expenses of holding the annual meeting of such District Branch, and shall present to and file with the Secretary a voucher therefor if such funds are desired by such District Branch. All bills or claims or vouchers hereinabove provided for, shall be filed within thirty days after the date of the incurring of such expenses unless further time, not to exceed ninety days in any given case for good cause shown, shall be allowed by the said Council or its Executive Committee. (New—Present rules of Council.)

CHAPTER VII.

COMMITTEES.

SEC. 1. Classification of Committees.—Committees shall be classified as (a) Standing Committees; (b) Reference Committees; (c) Special Committees.

SEC. 2. The following shall be the Standing Committees of the Society:

- A Committee on Scientific Work.
- A Committee on Legislation.
- A Committee on Public Health and Medical Education.
- A Committee on Arrangements.
- A Committee on Medical Research.
- A Committee on Medical Economics.

SEC. 3. The Committee on Scientific Work shall consist of the Chairman, a member to be appointed by the President of the Society and approved by the Council, and the Chairman of the different sections. It shall hold meetings and prepare the necessary programs for the annual meeting of the Society and for

such other special meetings as may be designated by the House of Delegates. It shall forward programs in ample time for publication, and not later than thirty days before the annual session shall send a completed program to the Secretary for the printing of the final program.

SEC. 4. The Committee on Legislation shall consist of three members including the Chairman. It shall keep in touch with professional and public opinion. Under the direction of the House of Delegates it shall represent the Society in procuring the enforcement of the medical laws of the State, in the interest of public health and of scientific medicine, and in procuring the enactment of such medical laws as will best secure and promote the welfare of the whole people.

SEC. 5. The Committee on Public Health and Medical Education shall consist of nine members, including the Chairman. It shall investigate, report upon and present to the Society such subjects as may seem to the Committee to be of special importance in their relation to the public health.

SEC. 6. The Committee on Arrangements shall consist of eight members, including the Chairman. It shall provide suitable accommodations for the meeting places of the Society, and of the House of Delegates, Council and Censors, and shall make all arrangements for these meetings. The Chairman of the Committee shall report an outline of the arrangements to the Secretary for publication in the program, and shall make such additional announcements during the session as occasion may require.

SEC. 7. The Committee on Medical Research shall consist of the Chairman and one member for each 200 or fraction thereof, of the membership of the eight District Branches of the Medical Society of the State of New York. It shall adopt such measures as may be necessary, to instruct the public and the profession in the desirability of animal experimentation and shall use all honorable means to oppose such bills as may be presented to the Legislature with the view of limiting or restricting scientific progress. In legislative work it shall act in co-operation with the Committee on Legislation.

SEC. 8. The Committee on Medical Economics shall consist of five members, including the Chairman. It shall investigate all matters affecting the economic status of physicians and shall report annually to the House of Delegates such recommendations as may, in its judgment, seem proper.

SEC. 9. The Chairman of all standing committees shall be elected by the House of Delegates, unless otherwise provided for in the By-laws. The remaining members may be elected by the Council.

REFERENCE COMMITTEES.

SEC. 9a. (a) Immediately after the organization of the House of Delegates at each annual meeting the Speaker shall appoint from among the members present such committees as may be deemed expedient by the Speaker. Each committee shall consist of five members, unless otherwise provided. These committees shall serve during the meeting at which they are appointed.

(b) To the appropriate committee shall be referred resolutions, measures and propositions presented to the House of Delegates before final action shall be taken, unless otherwise ordered by the House of Delegates.

(c) Each Reference Committee shall, as soon as possible after the adjournment of each session, or during the session if necessary, take up and consider such business as may have been referred to it, and shall report on the same at the next session, or when called on to do so. Three members shall constitute a quorum.

SPECIAL COMMITTEES.

SEC. 10a. Special Committees may be created by the House of Delegates to perform the special functions for which they are created. They shall be appointed by the officer presiding over the meeting at which the committee is authorized, if such committee is to conclude its work during said meeting of the House of Delegates, otherwise by the President, unless otherwise ordered by the House of Delegates. (Part new.)

(b) The Committee on Prize Essays shall consist of three members including the Chairman. Its duty shall be to receive all essays offered in competition for prizes which may be offered by this Society. (Same as old By-laws.)

The Committee shall make all necessary rules and regulations for the award of prizes subject to the terms of the deeds of gift, and shall report the result at the next annual meeting of the House of Delegates. They shall give notice through the Society's publications or by other methods within thirty days after their appointment, of the amount of the prize essays and when the essays shall be submitted to the Committee.

Members of the Committee on Prize Essays shall be elected by the House of Delegates for the term of two years. (Same as old By-laws.)

MEMBERSHIP OF COMMITTEES.

SEC. 11. Any member of the Society shall be eligible to serve on Standing or Special Committees. All members of committees who are not members of the House of Delegates shall have the right to present their reports in person to the House of Delegates and to participate in the debate thereon, but shall not have the right to vote. (Same as old By-laws.)

CHAPTER VIII.

DISTRICT BRANCHES.

SEC. 1. Each District Branch shall elect a President, as directed in this Constitution and By-laws, who shall be the Councilor for that Branch. (Chap. VIII, Sec. 2, same as old By-laws.)

SEC. 2. Each District Branch shall elect such officers as are provided for in its By-laws, who shall attend the business meetings. (Chap. VIII, Sec. 3, same as old By-laws.)

CHAPTER IX.

SECTIONS.

SEC. 1. The Sections designated by the House of Delegates shall each annually elect a Chairman and Secretary provided that each Section may elect its Secretary to serve a longer time at its discretion.

SEC. 2. The Chairman of the various Sections shall be members of the Committee on Scientific Work.

SEC. 3. The election of officers of Sections shall be the first order of business of the afternoon session of the second day of each annual meeting. To participate in the election of any Section a member must be registered with such Section and must have recorded his name and address in the Section registry.

SEC. 4. Each Section shall hold its meetings at such times as designated by the Committee on Scientific Work. (Chap. IX, same as old By-laws.)

CHAPTER X.

COMPONENT COUNTY SOCIETIES.

SEC. 1. Whenever a member in good standing in any component county medical society removes to another county in this State, his name, upon his request, shall be transferred to the roster of the component county medical society of the county to which he removes, without cost to him. (Re-enact Chap. X, Sec. 4.)

SEC. 2. At its annual meeting each component county medical society shall elect a delegate or delegates to represent it in the House of Delegates of this Society,

in accordance with the Constitution and By-Laws of this Society. (Re-enact Chap. X, Sec. 5.)

SEC. 3. The Secretary of each component county medical society shall keep a roster of its members and of all other registered physicians of such county in which shall appear the full name of each of said physicians, the date of his admission to such society, his residence and the date when his license to practice medicine in this State was granted. *He shall note any changes in said roster by reason of removal, death, revocation of license or other disqualification.* (Source Chap. X, Sec. 6—part new.)

SEC. 4. He shall forward said roster and information, together with the names and places of residence of each of the officers of said society, the names and residences of each delegate of the House of Delegates of said society to the Secretary of this Society thirty days before the date of its annual meeting. (Source Chap. X, Sec. 7.)

SEC. 5. The Treasurer of each component county medical society shall forward to the Treasurer of this Society, the amount of the State per capita assessment on or before the first day of June of each year. (Source Const. Art. VII, Sec. 2.)

SEC. 6. Each component county medical society may adopt a Constitution and By-laws for the regulation of its affairs provided the same shall be first approved by the Council of this Society. (Chap. X, Sec. 9.)

CHAPTER XI.

MISCELLANEOUS.

SEC. 1. No address or paper before the Society, except those of the President and orators, shall occupy more than twenty minutes in its delivery, and no member shall speak upon any question before the House for longer than five minutes nor more than once on any subject, except by the consent of a majority vote. (Same as old By-laws.)

SEC. 2. All papers read before the Society by its members shall become the property of the Society. Permission may be given, however, by the Council, House of Delegates or the Executive Committee to publish such paper in advance of its appearance in the NEW YORK STATE JOURNAL OF MEDICINE. (Source Chap. XI, Sec. 2, slight change.)

SEC. 3. Any distinguished physician of a foreign country or a physician not a resident of this State, who is a member of his own State Association, may become a guest during any annual session upon the invitation of the President or officers of the Society, and may be accorded the privilege of participating in all the scientific work of the session. (Same as old By-laws.)

SEC. 4. The deliberations of the Society shall be governed by parliamentary usage, as contained in Roberts' Rules of Order, when not in conflict with the Constitution and By-laws of the Society. (Same as old By-laws.)

SEC. 5. Officers, members of Standing and Special Committees of the Society, may be removed from office or otherwise disciplined for malfeasance or non-feasance in office, upon written charges made by any member and transmitted to the President. The President may, in his discretion, order a trial upon said charges by the Council or a Committee thereof and in the event of such trial, the accused shall be given at least ten days' notice of such charges and have full opportunity to defend the same, but no such officer or member of the committee shall be removed or otherwise disciplined except by a two-thirds vote of the Council. In case any such officer or member of the committee shall be removed, he may appeal from the decision of the said Council to the House of Delegates, but pending the determination of such appeal, he shall not exercise the functions of his office. (New.)

CHAPTER XII.

SEC. 1. The seal of the Society shall be as follows:



CHAPTER XIII.

AMENDMENTS.

SEC. 1. Amendments to these By-laws, except such as are obligatory by law, can be made only at an annual meeting of the House of Delegates.

SEC. 2. Notice of the proposed amendment shall be given at a previous annual meeting of the House of Delegates, or to the Council and before the same can be acted upon, it shall be published once before the annual meeting in the official bulletin or journal of the Society or sent, when so ordered by the House of Delegates to each component county medical society at least two months before the meeting, at which time final action shall be taken thereon.

SEC. 3. The affirmative vote of two-thirds of the delegates present and voting shall be necessary for adoption.

SEC. 4. Amendments made necessary by law shall be made either by the Council or House of Delegates whenever such necessity exists.

COMMITTEE ON PRIZE ESSAYS

The Committee on Prize Essays takes pleasure in once more drawing the attention of the members of the Medical Society of the State of New York to the Merritt H. Cash Prize and the Lucien Howe Prize, \$100 each, which will be open for competition at the next annual meeting of the State Society, which will be held in Albany on April 17, 1922.

The Lucien Howe Prize will be awarded for the best original contribution to the knowledge of surgery, preferably ophthalmology, and is not limited to the members of the State Society, any physician being at liberty to compete for it.

The Merritt H. Cash Prize will be awarded for the best original essay on medical or surgical subjects and is only open to members of the Medical Society of the State of New York.

The essay shall be typewritten or printed, and the only means of identification of the author shall be a motto or other device. It shall be accompanied by a sealed envelope, having on the outside the same motto or device, and containing the name and address of the writer. Essays must be sent to the chairman of the Committee, Dr. Albert Vander Veer, 28 Eagle Street, Albany, N. Y., not later than the 1st of April, 1922.

A. VANDER VEER, M.D., Albany.

EDWARD D. FISHER, M.D., New York.

CHARLES G. STOCKTON, M.D., Buffalo.

MEETING OF THE COUNCIL.

A meeting of the Council of the Medical Society of the State of New York was held at the State Society rooms, 17 West 43rd Street, on Saturday afternoon, December 10th, 1921. Dr. James F. Rooney, President, Dr. Edward Livingston Hunt, Secretary.

The meeting was called to order at 2 p. m. and on roll call the following answered to their names: Drs. James F. Rooney, J. Richard Kevin, E. Eliot Harris, W. Meddaugh Dunning, William H. Purdy, William D. Johnson, Edward Livingston Hunt, George A. Leitner, Arthur D. Jaques, Arthur J. Bedell, William D. Alsever, Leon M. Kysor, Owen E. Jones, Harry R. Trick, Samuel Lloyd, James N. Vander Veer, Henry Lyle Winter, Joshua M. Van Cott, Frederic E. Sondern, Frederic C. Conway.

A communication was read from Dr. Seth M. Milliken, regretting his inability to be present owing to illness.

Moved and seconded that Dr. Milliken be excused. Carried.

A quorum being present Dr. Rooney announced the meeting open for business.

The Secretary read the minutes of the last meeting.

Moved and seconded that they be approved as read. Carried.

Dr. Sondern, Chairman of the Committee on Medical Research presented the names of the following as members of his committee, for approval by the Council: Drs. Samuel A. Brown, Charles L. Dana, W. Gilman Thompson, Oliver S. Hillman, George A. Leitner, James Eving, Simon Flexner, Karl M. Vogel, Joseph Byrne, Alfred F. Hess, George B. Wallace, William H. Park, James E. Sadlier, H. Ernest Schmid, J. Bentley Squier, John S. Thatcher, S. W. S. Toms, Henry Lyle Winter, Francis Carter Wood, Elias H. Bartley, Archibald Murray, John O. Polak, James S. Waterman, Frank Overton, Joshua M. Van Cott, Augustus B. Wadsworth, Albert Vander Veer, Sherwood V. Whitbeck, George F. Comstock, Grant C. Madill, Charles Stover, T. Wood Clarke, Charles B. Forsyth, Hersey G. Locke, A. Walter Suiter, Arthur W. Booth, Luzerne Coville, R. Paul Higgins, Robert M. Elliott, Henry T. Williams, Ethan A. Nevin, G. Kirby Collier, Harvey R. Gaylord, Albert T. Lytle, Charles G. Stockton, Nelson G. Richmond, Bernard F. Schreiner, Herbert U. Williams.

Moved and seconded that they be approved. Carried.

Dr. Vander Veer, Chairman of the Committee on Legislation, presented the name of Dr. Erastus Corning, as the third member of his committee, for approval by the Council.

Moved and seconded that Dr. Corning be approved. Carried.

Dr. Vander Veer, Chairman of the Committee on Legislation, gave a verbal report which included a resume of certain bills affecting the medical profession, which would probably be introduced at an early date in the Legislature.

Moved and seconded that the Council approve the bill as outlined by the Chairman of the Committee on Legislation, in regard to amending the education features of the Medical Practice Act: the establishment of a uniform method of admitting to practice physicians admitted to practice in other states; giving responsibility to the Attorney General of the State of enforcing the Medical Practice Act: and repealing Chapter 357 of the Laws of 1917. Carried.

Dr. Lloyd, Chairman of the Committee on Scientific Work, presented a resume of the work of his committee.

Moved and seconded that it be accepted. Carried.

Dr. Rooney presented the name of Dr. James E. Sadlier as a member of the Committee on Scientific Work.

Moved and seconded that Dr. Sadlier's appointment be approved. Carried.

Moved and seconded that the Chairman of the Committee on Scientific Work be authorized to extend invitations to physicians residing outside of the State to take part in the scientific sessions at the annual meeting, provided they meet the qualifications required by the By-Laws. Carried.

Dr. Van Cott, Chairman of the Committee on Public Health and Medical Education, presented the names of the following as members of his committee, for approval by the Council: Drs. Allen A. Jones, Charles Stover, William P. Pool, John M. Swan, Luzerne Coville, Henry E. Clarke, Halbert S. Steensland, and Frank Overton. Moved and seconded that they be approved. Carried.

Dr. Conway, Chairman of the Committee on Arrangements, presented the following as members of his committee, for approval by the Council: Drs. Arthur J. Bedell, Nelson K. Fromm, Andrew MacFarlane, Howard E. Lomax, Thomas W. Jenkins, James N. Vander Veer, and Louis B. Mount.

Moved and seconded that they be approved. Carried.

Dr. Winter, Chairman of the Committee on Medical Economics, gave an outline of the work which had been done by his committee in regard to the nursing situation, and made suggestions in regard to its betterment.

Moved and seconded that the question be referred back to the Committee on Medical Economics for further study and report. Carried.

Dr. Sondern, Chairman of the Special Committee on Revision of Constitution and By-Laws, presented a tentative draft of the Constitution and By-Laws, which had been prepared by his committee, with the assistance of the Counsel of the Society.

Dr. Winter presented the following amendment:

To Amend the By-Laws, Chapter I, by adding section 4, as follows:

JUNIOR MEMBERSHIPS

Section 4: A Junior Membership is hereby created to which every medical student, regularly entered in an accepted medical college, is eligible.

Any such student who shall apply for admission to membership shall present his credentials showing him to be regularly entered in a medical college and upon this presentation may be elected to junior membership in the County Society to which he applies.

Such membership in the County Society shall make him a Junior member of the State Society.

Each Junior member shall be entitled to receive the Journal of the State Society and to attend and participate in all scientific meetings of the County Society, District Branches and the State Society.

The annual dues of the Junior members shall be \$3.00. \$2.00 of this shall be paid into the treasury of the State Society, and \$1.00 retained by the County Society in which the membership is held.

No Junior member shall be entitled to vote on any subject.

When a Junior member shall have received his degree of Doctor of Medicine, he shall automatically become a full member, and upon payment of the regular membership dues, shall enjoy all the privileges of a member in good standing.

A Junior membership for Internes with a small fee only.

Mr. Whiteside, Counsel of the Society, stated that as the membership of the State Society was made up of the membership of the County Societies, that this would have to be acted upon by the County Societies before it could be considered by the State Society.

Dr. Winter withdrew his Amendment.

Dr. Sondern presented the following resolution passed by the Executive Committee: "That each District Branch Chairman be granted an appropriation not to

exceed \$100. per annum, to defray the expenses of holding the annual meeting of said District Branch, and that the same be incorporated in the By-Laws."

Moved and seconded that it be approved. Carried.

Dr. Harris presented the following amendments to the By-Laws: Chapter II, Section 7, by changing the word "President" to "Speaker."

Moved and seconded that it be approved. Carried.

Chapter III, Section 10, by adding "In the event of a single nominee only for any office, a majority vote without ballot shall elect."

Moved and seconded that it be approved. Carried.

Moved and seconded that the resolution passed by the House of Delegates last spring that "No member shall speak in a discussion upon any question before the House of Delegates for longer than five minutes, except by consent of the House of Delegates" be incorporated in the By-Laws. Carried.

Moved and seconded that the By-Laws as amended be approved, printed twice in the New York State Journal of Medicine, and presented for action to the House of Delegates at the next annual meeting of the Society. Carried.

The amendment to the By-Laws introduced by Dr. Winter earlier in the meeting, in regard to Junior membership, was reconsidered and it was moved and seconded that it be referred to the Executive Committee, with power to present to the House of Delegates at the next annual meeting, if it is deemed advisable. Carried.

Moved and seconded that the Chair appoint a Committee to draw up appropriate resolutions on the death of Dr. Dwight H. Murray, Vice Speaker of the House of Delegates. Carried.

The Chair appointed Drs. E. Eliot Harris, Chairman, William D. Alsever, Harry R. Trick, J. Richard Kevin, Owen E. Jones, and Edward Livingston Hunt.

Dr. Jaques presented the following resolution in regard to the Dispensary Law:

Resolved, That the President of the Second District Branch shall present at the next meeting of the Council of the Medical Society of the State of New York, a resolution asking the Council to oppose any changes in the Dispensary Law or any changes in the Rules and Regulations of the State Board of Charities which would favor pay clinics. Therefore be it

Resolved, That the Council of the Medical Society of the State of New York do place itself on record as opposing any legislation to make changes in the present Dispensary Law or any changes in the Rules and Regulations of the State Board of Charities which would favor pay clinics.

Moved and seconded that the resolution be adopted. Carried.

Moved and seconded that a copy of the resolution be sent, under the seal of the Society, to the State Board of Charities, the Speaker of the Assembly, the President of the Senate, and the Governor of the State of New York. Carried.

Moved and seconded that Dr. William F. Campbell, ex-Chairman of the Committee on Arrangements, and Dr. Frank D. Jennings, ex-Chairman of the Committee on Scientific Work, be exonerated from all blame in regard to the use of the State Society letterhead and seal and the sending out of the letter by the Kimball Electric Company exploiting their washing machine. Carried.

Moved and seconded that it is the sense of the Council that the addition of the ex-Presidents to the House of Delegates, as members without vote, would be advantageous. Carried.

There being no further business, the meeting adjourned at 4:45 p. m.

EDWARD LIVINGSTON HUNT, M.D.
Secretary.

Medical Society of the State of New York

17 West 43rd Street, New York.

February 15, 1922.

The regular annual meeting of the Medical Society of the State of New York will be held on Tuesday, April 18, 1922, at 12 M., in Chancellor's Hall, Education Building.

JAMES F. ROONEY, M.D., *President.*
EDWARD LIVINGSTON HUNT, M.D., *Secretary.*

17 West 43rd Street, New York.

February 15, 1922.

The regular annual meeting of the House of Delegates of the Medical Society of the State of New York will be held on Monday, April 17, 1922, at 3 P. M., in Chancellor's Hall, Education Building.

JAMES F. ROONEY, M.D., *President.*
EDWARD LIVINGSTON HUNT, M.D., *Secretary.*

116th ANNUAL MEETING.

Tuesday, April 18th, 12 M.

Calling the Society to order by the President.
Address of Welcome by the Chairman of the Committee on Arrangements, Frederic C. Conway, M.D.
Reading of the minutes of the 115th Annual Meeting by the Secretary, Edward Livingston Hunt, M.D.
President's Address, James F. Rooney, M.D.
Annual Oration, John B. Deaver, M.D., F.A.C.S., Philadelphia, Pa.

SCIENTIFIC PROGRAM.

ARRANGED BY THE COMMITTEE ON SCIENTIFIC WORK.
Samuel Lloyd, M.D., Chairman, New York City.
Paul B. Brooks, M.D., Albany.
George W. Cottis, M.D., Jamestown.
Francis C. Goldsborough, M.D., Buffalo.
Linnaeus E. La Fetra, M.D., New York City.
Henry L. Lynah, M.D., New York City.
Herman O. Mosenthal, M.D., New York City.
Michael Osnato, M.D., New York City.
James E. Sadlier, M.D., Poughkeepsie.

SECTION ON MEDICINE.

Chairman, Herman O. Mosenthal, M.D., New York.
Secretary, William D. Alsever, M.D., Syracuse.

Place of Meeting, Court House, Albany.

Tuesday, April 18th, 2:30 P. M.

Joint Session with Section on Public Health.

"The Treatment of Anthrax by the Local and General Administration of Anti-Anthrax Serum," Joseph C. Reegan, M.D., New York City (by invitation).

"Sequelae of Encephalitis Lethargica and Their Treatment," Lewellys F. Barker, M.D., Baltimore, Md. (by invitation).

"Serum Treatment of Epidemic Poliomyelitis," a—Communicability; b—Serum Treatment, Harold L. Amoss, M.D., Baltimore, Md. (by invitation).

Discussion to be opened by George Draper, M.D., New York City.

"The Use of the Schick Test and Diphtheria Toxin-Antitoxin Mixture in New York City Schools," William H. Park, M.D., New York City.

Wednesday, April 19, 9:30 A. M.

Symposium on Functional Tests and Their Significance

"Circulatory," William W. Herrick, M.D., New York City.

Discussion to be opened by T. Stuart Hart, M.D., New York City.

"Renal," John R. Williams, M.D., Rochester.
 "Gastro-Intestinal," Abraham H. Aaron, M.D., Buffalo.

Wednesday, April 19, 2:30 P. M.

Joint Meeting with Section on Surgery.
 Symposium on X-Ray Work.

"Mixed Tumors of the Parotid and Their Treatment by Radium," Fred MacN. Johnson, M.D., New York City.

"The Value of X-Ray in the Diagnosis of Diseases of the Gall-Bladder," Russell D. Carman, M.D., Rochester, Minn. (by invitation).

"Diagnosis of Bone and Joint Lesions by the X-Ray," Frederick H. Baetjer, M.D., Baltimore, Md. (by invitation).

"Roentgenotherapy in Malignant Disorders" (with lantern demonstration), George E. Pfahler, M.D., Philadelphia, Pa. (by invitation).

Thursday, April 20th, 9:30 A. M.

"The Treatment of Auricular Fibrillation (perpetually irregular pulse) by Quinidine Sulphate," (lantern slides) Robert Levy, M.D., New York City (by invitation).

Discussion to be opened by Harold E. B. Pardee, M.D., New York City.

"Transfusions of Blood of Immunized Donors in Bacteraemia" (with motion picture illustration) Lester J. Unger, M.D., New York City.

"Treatment of Hypothyroidism," John A. P. Millet, M.D., Buffalo.

Discussion to be opened by Nelson G. Russell, M.D., Buffalo.

"Possible Clinical Significance of the Thyroid-Suprarenal Cortex Inter-relationship," David Marine, M.D., New York City (by invitation), and Emil J. Baumann, M.D., New York City (by invitation).

"Acute Anaphylactic Reactions Following the Intravenous Injection of Arspenamin," Burton P. Thorn, M.D., New York City (by invitation).

SECTION ON SURGERY.

Chairman, George W. Cottis, M.D., Jamestown.
 Secretary, Horace H. Le Seur, M.D., Batavia.

Place of Meeting, Court House, Albany.

Tuesday, April 18th, 2:30 P. M.

"Some Phases of the Surgery of the Spleen," Royale H. Fowler, M.D., Brooklyn.

Discussion by James M. Hitzrot, M.D., New York City.

"Cholecystitis; Its Relation to Infections of the Liver and Pancreas," W. Howard Barber, M.D., New York City.

"Some Phases of Gall-Bladder Surgery," William D. Johnson, M.D., Batavia.

"Pancreatitis," Harry R. Trick, M.D., Buffalo.

Discussion on papers by Drs. Barber, Johnson and Trick opened by Marshall Clinton, M.D., Buffalo.

Wednesday, April 19th, 9:30 A. M.

"Intestinal Obstruction Following Unrecognized Cases of Appendicitis," Arthur M. Dickinson, M. D., Albany.

Discussion opened by Edgar A. Vander Veer, M.D., Albany.

"The Causation of Symptoms in Cases Simulating Appendicitis," Howard L. Prince, M.D., Rochester.

Discussion opened by Arthur W. Booth, M.D., Elmira.

"Should Gastro-enterostomy be Performed in Presence of Ruptured Duodenal or Gastric Ulcer?" Donald Guthrie, M.D., Sayre, Pa. (by invitation).

Discussion to be opened by William A. Downes, M.D., New York City.

Wednesday, April 19th, 2:30 P. M.

Joint Meeting with Section on Medicine
 Symposium on X-Ray Work.

"Mixed Tumors of the Parotid and Their Treatment by Radium," Fred MacN. Johnson, M.D., New York City.

"The Value of X-Ray in the Diagnosis of Disease of the Gall-Bladder," Russell D. Carman, M.D., Rochester, Minn. (by invitation).

"Diagnosis of Bone and Joint Lesions by the X-Ray," Frederick H. Baetjer, M.D., Baltimore, Md. (by invitation).

"Roentgenotherapy in Malignant Disorders," George E. Pfahler, M.D., Philadelphia, Pa. (by invitation).

Thursday, April 20th, 9:30 A. M.

Orthopedics.

"Operative Treatment of Idiopathic Scoliosis," Armitage Whitman, M.D., New York City.

"Traumatic Backs and Their Treatment," James W. Sever, M.D., Boston, Mass. (by invitation).

Discussion on papers by Dr. Whitman and Dr. Sever opened by Lieut. Col. Mackenzie Forbes, M.D., Montreal (by invitation) and Russell A. Hibbs, M.D., New York City.

"Mobilization of Stiff Knees," Ralph R. Fitch, M. D., Rochester.

Discussion by Herbert A. Durham, M.D., New York City.

Thursday, April 20th, 2:30 P. M.

Title to be announced later.

Thomas F. Laurie, M.D., Syracuse.

"The Treatment of Bladder Tuberculosis," Edward L. Keyes, Jr., M.D., New York City.

Discussion opened by Edwin Beer, M.D., New York City.

"Prostatic Surgery," J. Bentley Squier, M.D., New York City.

"Nitrous Oxide Oxygen, Its Value as a General Anæsthetic in Genito-Urinary Surgery," John J. Buettner, M.D., Syracuse.

"Some Factors of Safety in the Pre- and Post-Operative Treatment of Goiter," Emil Goetsch, M.D., Brooklyn.

Discussion by Charles W. Webb, M.D., Clifton Springs, and Eugene Pool, M.D., New York City.

SECTION ON OBSTETRICS AND
 GYNECOLOGY.

Chairman, Francis C. Goldsborough, M.D., Buffalo.
 Secretary, Paul T. Harper, M.D., Albany.

Place of Meeting, Court House, Albany.

Tuesday, April 18th, 2:30 P. M.

"The Planning and Organization of a Small Maternity Hospital." Illustrated. Stuart B. Blakely, M.D., Binghamton.

"Life History of the Double Uterus," John O. Polak, M.D., Brooklyn.

"Puerperal Infection," William T. Getman, M.D., Buffalo.

"Diabetes Complicating Pregnancy." With illustrated case reports. George W. Kosmak, M.D., New York City.

Wednesday, April 19th, 9:30 A. M.

- "The Treatment of Certain Conditions of the Cervix-Uteri," Gordon Gibson, M.D., Brooklyn.
"Post Mortem Findings in the New Born." Illustrated. Hugh C. McDowell, M.D., Buffalo.
"The Value of the Complement Fixation Test in Gonorrhoea in Women," Emily D. Barringer, M.D., New York City.

Wednesday, April 19th, 2:30 P. M.

- "Bleeding and Coagulation Time in the First Week of Life," Harry R. Lohnes, M.D., Buffalo.
"Criticism of Certain Tendencies in American Obstetrics," J. Whitridge Williams, M.D., Baltimore, Md. (by invitation).
"Rectal Complications of Pregnancy and Puerperium," Descum C. McKenney, M.D., Buffalo.

Thursday, April 20th, 9:30 A. M.

- "Relation of Obstetrics to Future Generations," W. Mortimer Brown, M.D., Rochester.
"Incident of Miscarriage in Private Obstetrical Practice, with a Discussion of the Pathology," John L. Huntington, M.D., Boston, Mass. (by invitation).
"Subject to be Announced," James E. King, M.D., Buffalo.

Thursday, April 20th, 2:30 P. M.

- "Heart Disease and Pregnancy," Harold E. B. Pardee, M.D., New York City.
"The Abuse of Caesarean Section," Robert L. De Normandie, M.D., Boston, Mass. (by invitation).
Discussion opened by Ross McPherson, M.D., New York City.

SECTION ON EYE, EAR, NOSE AND THROAT.

Chairman, Henry L. Lynah, M.D., New York City.
Secretary, Edmond E. Blaauw, M.D., Buffalo.

Place of Meeting, Court House, Albany.

Tuesday, April 18th, 2:30 P. M.

Symposium on Cancer of the Larynx.

- "Cancer of the Larynx Treated by Thyrotomy (laryngo-fissure)," Chevalier Jackson, M.D., Philadelphia, Pa. (by invitation).
"Cancer of the Larynx Treated by Laryngectomy," John E. MacKenty, M.D., New York City.
"Cancer of the Larynx Treated by Radium," Douglas A. Quick, M.D., New York City.
Discussion by Cornelius G. Coakley, M.D., Hubert Arrowsmith, M.D., John D. Kernan, Jr., M.D., Sidney Yankauer, M.D., Thomas J. Harris, M.D., C. Everett Field, M.D., Charles J. Imperatori, M.D., and James G. Callison, M.D. (by invitation).

Wednesday, April 19th, 9:30 A. M.

Joint Meeting with Section on Neurology and Psychiatry.

Symposium on the Eye, Ear, Nose and Throat in Relation to Brain Surgery and Neurology.

- "The Value of Eye Observations in Fractures of the Skull and Severe Head Injuries," James A. Kearney, M.D., New York City.
"Value of Functional Ear Tests in Localization of Intracranial Lesions," Isidore Friesner, M.D., New York City.
"The Relation of Certain Ocular and Cerebral Conditions to Infections in the Nose and Throat," E. Ross Faulkner, M.D., New York City.
"Surgical Treatment of Brain Injuries," Joseph E. J. King, M.D., New York City.
"Neurological Localization," Israel Strauss, M.D., New York City.

- "The Significance of Papilloedema in Brain Tumors," Israel S. Wechsler, M.D., New York City.
Discussion by Thomas A. Northcott, M.D. (Eye), Charles E. Perkins, M.D. (Ear), Albert Sellennings, M.D., and John P. Grant, M.D. (Brain Surgery), Foster Kennedy, M.D., and LaSalle Archambault, M.D. (Neurology), and others.
"A Study of Paranoid Trends in Hysteria," Philip R. Lehrman, M.D., New York City.

Wednesday, April 19th, 2:30 P. M.

Devoted to Papers on the Eye.

- "Hereditary and Juvenile Glaucoma," Albert C. Snell, M.D., Rochester.
"Further Observations on Protein Injections in Intra-Ocular Infections," Ben Wit Key, M.D., New York City.
Discussion by Walter E. Lambert, M.D., Percy Fridenberg, M.D., Francis W. Shine, M.D., Shober Smith, M.D., New York City.
"The Fundus Oculi in the Toxemias of Pregnancy," Joseph L. Behan, M.D., Brooklyn.
"The Relation of Occipito-Frontalis to the Occipital Headaches of Eye Strain," Lucien Howe, M.D., and John E. Sutton, M.D., Buffalo.
Discussion, Manuel Uribe-Troncoso, M.D., New York City.
"Solid Edema of the Face and Eyelids," Walter B. Wedler, M.D., New York City.
Discussion by George C. Andrews, M.D., New York City.
"Slit Lamp and Gullstrand Ophthalmoscope Demonstrations," Arthur J. Bedell, M.D., Albany.

Thursday, April 20th, 9:30 A. M.

Symposium on Pulmonary Abscess.

- "Tonsillectomy (local versus general anesthesia) in Relation to Pulmonary Abscess," W. Lawrence Gatewood, M.D., New York City.
"The Avoidance of Pulmonary Abscess in General Anesthesia in Nose and Throat Surgery," James T. Gwathmey, M.D., New York City.
"The Physical Signs in Pulmonary Abscess," Otto M. Schwerdtfeger, M.D., New York City.
"Roentgenological Interpretations in Pulmonary Abscess," William H. Stewart, M.D., New York City.
"Bronchoscopic Studies in Pulmonary Abscess," Richard Jordan, M.D., New York City.
"The Surgical Treatment of Pulmonary Abscess," Willy Meyer, M.D., New York City.
Discussion: Tonsillectomy, Lee M. Hurd, M.D.; Anesthesia, Charles H. Sanford, M.D.; Internist, Morris Manges, M.D.; Roentgenology, Leon T. LeWald, M.D., and Charles Gottlieb, M.D.; Bronchoscopy, Sidney Yankauer, M.D.; Surgery, Howard Lilienthal, M.D.

SECTION ON PEDIATRICS.

Chairman, Linnaeus La Fetra, M.D., New York City.
Secretary, Arthur W. Benson, M.D., Troy.

Place of Meeting, Court House, Albany.

Tuesday, April 18th, 2:30 P. M.

- "General Management of Heart Conditions Among Children," Mansfield G. Levy, M.D., Buffalo.
"Bronchiectasis in Young Children," Martha Wollstein, M.D., New York City (by invitation).
"The Trend of Our Attitude Toward Heart Disease in Children," George R. Irving, M.D., New York City.
"The Use of Highly Acid Milk in Infant Feeding," Henry L. K. Shaw, M.D., Albany.
(Arrangements have been made by the Local Committee for members of the Section to have a dollar luncheon served at the University Club each day.)

Wednesday, April 19th, 9:30 A. M.

"Gonococccic Vulvo Vaginitis in Children as a Hospital Problem," Edward J. Wynkoop, M.D., Syracuse.
 "The Treatment of Focal Infection of the Throat of Children by X-Ray, as Compared with Surgical Removal of Tonsils and Adenoids." Lantern slides and moving pictures of the technique and actual photographs of the throat before and after treatment. William D. Witherbee, M.D., New York City.

"The Results of Active Immunization with Diphtheria Toxin-Antitoxin in Public Schools," Abraham Zingher, M.D., New York City.

Wednesday, April 19th

2 to 3 P. M.—Visit to State Laboratories, by invitation of Dr. Augustus Wadsworth.

3.30 to 5 P. M.—Pediatric Clinics at the Child's Hospital and St. Margaret's, by invitation of Dr. Henry L. K. Shaw and Committee.

Thursday, April 20th, 9:30 A. M.

"A Compensating Mechanism in Status Thymico Lymphaticus," Walter Timme, M.D., New York City.
 "Malnutrition in Children," Carl H. Laws, M.D., Brooklyn.

"Chronic Intestinal Indigestion in Children," F. Elmer Johnson, M.D., New York City.

"Heliotherapy in Tuberculosis." Illustrated with lantern slides. Horace Lo Grasso, M.D., Perrysburg.

Thursday, April 20th

2.30-3 P. M.—Pediatric Clinic at Day Home, Troy. Demonstration cases by Dr. P. L. Harvie, Dr. William T. Shields, and Dr. Warren St. John. Demonstration in corrective gymnastics by Miss Wilda Long.

4-5 P. M.—Dr. Joseph Palmer, of Syracuse (at Troy High School Auditorium), "Welfare Work Among School Children."

SECTION ON NEUROLOGY AND PSYCHIATRY

Chairman, Michael Osnato, M.D., New York City.
 Secretary, S. Philip Goodhart, M.D., New York City.

Place of Meeting, Court House, Albany.

Tuesday, April 18, 2:30 P. M.

"Some Clinical and Pathological Observations on Brain Tumors and Abscesses," Edward A. Sharp, M.D., Buffalo.

"Facial Palsy: Surgical Treatment," Alfred S. Taylor, M.D., New York City.

"The Neuropsychiatrist and the Diagnostic Study of a Person as a Whole," Lewellys F. Barker, M.D., Baltimore, Md. (by invitation).

"Orthopedic Surgery and the Neurologist," Leo Mayer, M.D., New York City.

"Pain in Spinal Cord Tumors, Its Character and Diagnostic Significance; Leading and Misleading to the Internist and General Surgeon," Byron Stookey, M.D., New York City.

Wednesday, April 19th, 9:30 A. M.

Joint Meeting with Section on Eye, Ear, Nose and Throat.

Symposium on the Eye, Ear, Nose and Throat in Relation to Brain Surgery and Neurology.

"The Value of Eye Observations in Fractures of the Skull and Severe Head Injuries," James A. Kearney, M.D., New York City.

"Value of Functional Ear Tests in Localization of Intracranial Lesions," Isidore Friesner, M.D., New York City.

"The Relation of Certain Ocular and Cerebral Conditions to Infections in the Nose and Throat," E. Ross Faulkner, M.D., New York City.

"Surgical Treatment of Brain Injuries," Joseph E. J. King, M.D., New York City.

"Neurological Localization," Israel Strauss, M.D., New York City.

"The Significance of Papilloedema in Brain Tumors," Israel S. Wechsler, M.D., New York City.

Discussion by Thomas A. Northcott, M.D. (Eye), Charles E. Perkins, M.D. (Ear), Albert Sellenings, M.D., and John P. Grant, M.D. (Brain Surgery), Foster Kennedy, M.D., and LaSalle Archambault, M.D. (Neurology) and others.

"A Study of Paranoid Trends in Hysteria," Philip R. Lehrman, M.D., New York City.

Wednesday, April 19th, 2:30 P. M.

"A Classification of Neurosyphilis Based Upon Neural Histogenesis; Remarks Upon Therapy," Leon H. Cornwall, M.D., New York City.

"Treatment and Prevention of Certain Mental Disorders," Henry A. Cotton, M.D., Trenton, N. J. (by invitation).

"The Psychopathic Personality," Bernard Glueck, M.D., New York City (by invitation).

"The Diagnostic Significance of Types of Reactions to Intelligence Tests," Stephen J. Jewett, M.D., and Phyllis Blanchard, Ph.D., New York City (by invitation).

"The Problem Child," Sylvester R. Leahy, M.D., Brooklyn.

Thursday, April 20th, 9:30 A. M.

"Personality Defects as Neuropsychiatric Problems," Irving J. Sands, M.D., Brooklyn (by invitation).

"The Variations in X-Ray Findings in the Normal Sella Turcica," Harry M. Imboden, M.D., New York City.

"An Interpretation of the Posture of Parkinsonian Syndromes in Terms of the Neuro-Muscular Mechanism; the Position of the Limbs and Torso as a Manifestation of a Single Reaction of the Nervous System," Walter M. Kraus, M.D., New York City.

"The Diagnosis of Spinal Cord Tumors," Isador Abrahamson, M.D., New York City.

Moving Pictures of Neurological Cases, Frederick Tilney, M.D., E. Livingston Hunt, M.D., and S. Philip Goodhart, M.D., New York City.

Thursday, April 20th, 2:30 P. M.

Clinics—By invitation of Dr. LaSalle Archambault, Albany.

SECTION ON PUBLIC HEALTH, HYGIENE AND SANITATION.

Chairman, Paul B. Brooks, M.D., Albany.

Secretary, Arthur D. Jacques, M.D., Lynbrook.

Place of Meeting, Court House, Albany.

Tuesday, April 18th, 2:30 P. M.

Joint Session with Section on Medicine.

"The Treatment of Anthrax by the Local and General Administration of Anti-Anthrax Serum," Joseph C. Reagan, M.D., New York City (by invitation).

"Sequelae of Encephalitis Lethargica and Their Treatment," Lewellys F. Barker, M.D., Baltimore, Md. (by invitation).

"Serum Treatment of Epidemic Poliomyelitis; a—Communicability; b—Serum Treatment," Harold L. Amoss, M.D., Baltimore, Md. (by invitation).

Discussion opened by George Draper, M.D., New York City.

"The Use of the Schick Test and Diphtheria Toxin-Antitoxin Mixture in New York City Schools," William H. Park, M.D., New York City.

Wednesday, April 19th, 9:30 A. M.

Session for Health Officers and School Medical Inspectors.

- "Mosquito and Malarial Control in Nassau County," Arthur D. Jaques, M.D., Lynbrook.
- "Open-Air Care of School Children," Clarence A. Greenleaf, M.D., Olean.
- "The Need of Better Co-operation Between the Laboratory and the Practicing Physician," Oliver W. H. Mitchell, M.D., Syracuse (by invitation).
- "Health Education Beginning with the Teacher," Caroline Croasdale, M.D., Albany (by invitation).
- "Rural Health Work from the Standpoint of a City Health Worker," H. A. Harris, M.D., New York City (by invitation).

Wednesday, April 19th, 2:30 P. M.

Session for Laboratory Workers.

- (Program arranged by the New York State Association of Public Health Laboratories.)
- "A Comparison of Room, Icebox and Ice Water Bath Temperatures for the Fixation of Complement Test," Hannah V. Langworthy and E. Jane Kerley, Albany (by invitation).
 - "Production of Antisheep Amboceptor in a Mule," Ruth Gilbert, Albany (by invitation).
 - "A Summary of the Results of Recent Investigations on Pertussis Vaccine Carried Out at the Bureau of Laboratories, Department of Health, New York City," Charles Krumwiede, M.D., New York City (by invitation).
 - "Leptospiras, Pathogenic and Nonpathogenic," Hideyo Noguchi, M.D., New York City (by invitation).
 - "Changes in Virulence of Tubercle Bacilli," Edward R. Baldwin, M.D., Saranac Lake.

Thursday, April 20th, 9:30 A. M.

Round Table Conference for Health Officers, with Discussions Limited to Five Minutes on the Following Subjects:

- Periods of isolation in common communicable diseases; are they reasonable? Melville D. Dickinson, M.D., Troy.
- Outbreaks of gastro-intestinal disorders; do we know what we should about them? Edward S. Godfrey, Jr., M.D., Albany (by invitation).
- Are the Schick test and the toxin-antitoxin immunization measures for general application? Robert Knight, M.D., Seneca Falls.
- Recent observations on the value of pertussis vaccine. Reader to be announced later.
- Limitations in the use of serum in pneumonia. Thomas Ordway, M.D., Albany (by invitation).
- Has the typhoid fever rate reached an irreducible minimum? Edward Clark, M.D., Buffalo.
- The persistent diphtheria carrier; what shall we do with him? Francis H. Miller, M.D., Cuba.
- Protecting a village water supply. Benjamin W. Stearns, M.D., Unadilla.
- The nuisance problem in rural communities. Frank L. Winsor, M.D., Laurens.
- Legal aspects of the work of the health officer. Charles C. Duryee, M.D., Schenectady.
- Does local public health educational work pay? William B. D. Van Auken, M.D., Watervliet.
- Prodromal stages of degenerative diseases of adult life. Thomas E. Bullard, M.D., Schuylerville.
- How can the program of this Section be improved? Paul von Zierolshofen, M.D., Croghan.

Hotels

The Ten Eyck, 87 State St., Albany.
William A. O'Neill, Chief Clerk.
Telephone: Main 2000.

Rates prevailing at the Ten Eyck during the Medical Society Meeting, April, 1922:

Rooms without bath	\$2.50	\$3.00		
Rooms with bath	\$4.00	\$4.50	\$5.00	
Rooms 2 persons without bath ..	\$4.00	\$4.50	\$5.00	
Rooms 2 persons with bath	\$6.00	\$7.00	\$8.00	

There are 75 rooms without bath and 325 rooms with baths.

The Hampton Hotel, 38 State St., Albany.
David Tepper, Manager.
Telephone: Main 2500.

200 rooms at	\$2.50	\$3.00	\$3.50	\$4.00
Double rooms	\$6.00	\$7.00	\$8.00	

Stanwix Hall, 487 Broadway, Albany.
E. L. Marion, Manager.
Telephone: Main 3644.

European Plan. Number of rooms not stated.
Rooms without bath
 \$2.00 per day. || Rooms with bath | \$3.00 per day. |

New Kenmore Hotel, 72 North Pearl St., Albany.
Robert P. Murphy, Manager.
Telephone: Main 4580.

Impossible to state how many rooms will be available April 17th to 20th, but can accommodate at least 150 persons.

Rooms, without bath, from \$2.00 up, single.
Rooms, with bath, \$3.00 up, single.
Double rooms, \$4.00 up, without bath, and \$6.00 up, with bath.

The Wellington, 136 State St., Albany.
J. D. Van Slyke, Manager
Telephone: Main 1660.

This hotel is erecting a large addition with approximately 100 rooms at the disposal of visiting doctors, 50 with and 50 without baths. There are 25 rooms on a floor and several floors can be reserved if the manager is notified in time.

One with bath	\$2.50			
One without bath	\$1.75			
Two with bath	\$4.00	\$5.00	\$6.00	
Two without bath	\$2.50	\$3.00	\$4.00	

H. E. LOMAX, M.D.
Chairman, Hotel Committee.

114 Jay Street, Albany.

District Branches.

EIGHTH DISTRICT BRANCH.
ANNUAL MEETING, BUFFALO, N. Y.
SEPTEMBER 8, 1921.

The meeting was called to order in Alumni Hall, University of Buffalo.

The following officers were elected for two years: President, Harry R. Trick, Buffalo; 1st Vice-President Edward Torrey, Olean; 2nd Vice-President, Howard A. Maynard, Medina; Secretary, William Warren Britt, Tonawanda; Treasurer, Fitch H. Van Orsdale, Belmont.

Dr. James F. Rooney, President, Medical Society of the State of New York, gave an address after which the meeting adjourned to the College Library for luncheon. The Medical Society of the County of Erie acted as host.

The afternoon session was opened by an address by Dr. Edward Livingston Hunt, Secretary, Medical Society of the State of New York.

Address by Mr. George W. Whiteside, Legal Counsel, Medical Society of the State of New York.

"Non-Tuberculosis Pulmonary Lesions," Robert C. Patterson, M.D., Saranac Lake.

"How are we to decide whether or not Gastric or Duodenal Ulcers are suitable for medical treatment?" Allen A. Jones, M.D., Buffalo.

"The Acute Abdomen," William D. Johnson, M.D., Batavia.

"A Demonstration of an advance in the Study of Hereditary Eye Disease," Lucien Howe, M.D., Buffalo.

"Recent Progress in the Treatment of Cancer," Harvey Gaylord, M.D., Buffalo.

FIFTH DISTRICT BRANCH.

ANNUAL MEETING, OCTOBER 5, 1921, AT WATERTOWN.

The meeting was called to order at 11 o'clock, in the Black River Valley Club, by the President, W. D. Alsever, with 120 members present.

The minutes of the last meeting were read and approved as read.

The following officers were elected for this year: President, W. H. Kidder, Oswego; 1st Vice-President, N. O. Brooks, Oneida; 2d Vice-President, C. D. Post, Syracuse; Secretary, C. B. Forsyth, Alexandria Bay; Treasurer, N. O. Brooks, Oneida.

Dr. Alsever took as the topic of his presidential address "The Nursing Problem" and covered the subject from many viewpoints.

Dr. Ford, of Utica, read a paper on "Nursing of the Sick." Both papers were freely discussed; among those speaking were Drs. Murray, Ganet, Kidder, Wallace, Deavor, Bernstein and Munroe.

Moved and seconded, that "A committee of three, of which the Vice-President was chairman, be appointed to consider the recommendations in the President's address and those in the paper of Dr. Ford, and report to the Society at the proper time." Carried.

Drs. Childs and Ayer, of Syracuse, gave very interesting talks on some phases of poliomyelitis. Dr. Burton J. Simpson, of Buffalo, read a paper on "Radium and Its Relation to Malignancy." The paper was much enjoyed by all and detailed the results obtained by the State Institute for the Study of Malignant Disease.

Dr. Farmer, of Syracuse, opened the discussion, followed by Dr. Childs and closed by Dr. Simpson.

The Medical Society of the County of Jefferson entertained at luncheon, after which the Society assembled for the afternoon session and the first paper was presented by Dr. Joseph H. Pratt, of Boston, "Vital Capacity Determination as an Aid in the Prognosis and

Treatment of Heart Disease." The apparatus was shown and the subject graphically illustrated. Discussed by Dr. F. B. Knowlton, of Syracuse.

Dr. W. B. Johnson, of Batavia, gave a talk on "The Physical Destiny of Man Viewed in the Light of His Origin." Dr. Herman O. Mosenthal, of New York, gave a very interesting paper entitled "Treatment of High Blood Pressure by Diet." Discussed by Drs. Evans, Murry and Bannan.

The last paper of the session was presented by Dr. Walter A. Calihan, of Rochester, "Some Observations on the Surgery of the Sigmoid," illustrated by lantern slides and discussed by Dr. Gregor, of Watertown.

A vote of thanks was given by the Society to those who had come from distant points and whose presence had contributed to making the meeting a success.

County Societies

MEDICAL SOCIETY OF THE COUNTY OF SENECA.

ANNUAL MEETING, WILLARD, OCTOBER 13, 1921.

The meeting was called to order in the State Hospital; the following officers were elected for 1922: President, Thomas J. Currie, Willard; Vice-President, John F. Crosby, Seneca Falls; Secretary-Treasurer, William Follette, Seneca Falls; Censors, Frederick W. Lester, Carroll B. Bacon, William H. Montgomery; Delegate to State Society, Robert M. Elliott; Alternate, Gordon Priestman; Chairman of Legislative Committee, Frederick W. Lester.

The minutes of the previous meeting were read and adopted as read.

Dr. F. W. Lester, Chairman of the Legislative Committee submitted his report which was accepted by the Society and the present committee continued.

Dr. Robert Knight was named Chairman of the Anti-Cancer Campaign in Seneca County, with the privilege of naming his associates on the committee.

"Physicians' Liability Insurance," Adolph Letellier, M.D., Seneca Falls.

Discussed by Drs. Brandt, Lester, Gordon, McWayne, Townsend, J. S. Kirkendall of Ithaca and A. G. Doust of Syracuse.

"Early Diagnosis of Tuberculosis," Alfred G. Doust, M.D., Syracuse.

Discussed by Drs. Frantz, Townsend and Montgomery.

Dr. Frantz moved a vote of thanks to Dr. Doust for his able and instructive paper. Seconded and carried.

"Cerebral Syphilis," William H. Montgomery, M.D., Willard.

Discussed by Drs. Lester, Townsend and Frantz.

Dr. Knight moved a vote of thanks to Dr. Montgomery for his valuable contribution to medical science. Seconded and carried.

A rising vote of thanks was given to Dr. Elliott and his staff for their hospitable entertainment of the County Society and their friends.

Dr. Knight moved that the next regular meeting be held at Seneca Falls, May, 1922. Seconded and carried.

SCHUYLER COUNTY MEDICAL SOCIETY.

REGULAR MEETING, WATKINS, OCTOBER 27, 1921.

The meeting was called to order at the Glen Springs, Dr. Albert Warren Ferris, President, in the chair.

Eleven members of the Tompkins County Society were guests of the society.

The minutes of the last meeting were read and approved as read. The resignation was accepted of Dr. John M. Quirk, as delegate to the State Medical Society, his resignation being due to his election as President of the Fifth District Branch Society. No election was held to fill the vacancy.

A scholarly and instructive address "On the Endocrines" was delivered by Dr. William Van Pelt Garretson, of New York.

At the close of the meeting a collation was served by the Glen Springs.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

HYGIENE OF WOMEN AND CHILDREN. By JANET E. LANE-CLAYTON, M.D., D.Sc. (Lond.), Dean and Lecturer on Hygiene, Household and Social Science Department, King's College for Women. London: Henry Frowde and Hodder & Stoughton. Price \$5.00.

MEDICAL ELECTRICITY FOR STUDENTS. By A. R. I. BROWNE, Teacher Medical Electricity, Western Infirmary, Glasgow. London: Henry Frowde and Hodder & Stoughton. 1921. Price \$4.25.

THE CLINICAL STUDY OF THE EARLY SYMPTOMS AND TREATMENT OF CIRCULATORY DISEASE IN GENERAL PRACTICE. By R. M. WILSON, M.B., Ch.B., late Assistant to Sir James Mackenzie under Medical Research Committee, late Cardiologist, War Office Trench Fever Committee. With a foreword by Sir James Mackenzie, M.D., F.R.S., F.R.C.P. London: Henry Frowde and Hodder & Stoughton. Price \$4.75.

ARTERIAL SCLEROSIS, CONSIDERATION OF THE PROLONGATION OF LIFE AND EFFICIENCY AFTER FORTY. By LOUIS FAUGERES BISHOP, M.A., M.D., Sc.D., F.A.C.P., Professor of the Heart and Circulatory Diseases, Fordham University, Physician Lincoln Hospital. London: Henry Frowde and Hodder & Stoughton. Price \$4.25.

BOWEL DISEASES IN THE TROPICS, CHOLERA, DYSENTERIES, LIVER ABSCESS AND SPRUE. By Sir LEONARD ROGERS, C.I.E., M.D., F.R.C.P., F.R.C.S., F.R.S., I.M.S. (Retired), Extra Physician Clinical Research and Lecturer Tropical Medicine, London School Tropical Medicine; Lecturer Tropical Medicine, London School of Medicine for Women. London: Henry Frowde and Hodder & Stoughton. Price \$9.00.

LESSONS ON TUBERCULOSIS AND CONSUMPTION. For the Household. Showing How to Prevent Tuberculosis, How to Recognize Its First Symptoms, How to Win Back Health. By CHARLES E. ATKINSON, M.D., recently Medical Director of the Seymour Sanatorium for Diseases of the Throat and Lungs, Banning, California; Attending Physician and Instructor Medical Clinic Graves Memorial Dispensary, Los Angeles. Illustrated. Funk & Wagnalls Company, New York and London. 1922. \$2.50 net.

A COMPEND ON BACTERIOLOGY, INCLUDING PATHOGENIC PROTOZOA. By ROBERT L. PITFIELD, M.D., Pathologist to the Germantown Hospital; late Demonstrator of Bacteriology at the Medico-Chirurgical College, Philadelphia; Visiting Physician to St. Timothy's Hospital and Chestnut Hill Hospital, Philadelphia. Fourth Edition, with 4 plates and 82 other illustrations. P. Blakiston's Son & Company, 1012 Walnut Street, Philadelphia, Pa. \$2.00 net.

Book Reviews

SURGICAL ANATOMY. By WILLIAM FRANCIS CAMPBELL, M.D., Surgeon-in-Chief Trinity Hospital, Brooklyn; Sometime Prof. Anatomy and Prof. Surgery Long Island College Hosp. Third Edition, revised. 681 pages, 325 original illustrations. Phila. and London. W. B. Saunders Co., 1921. Cloth, \$6.00 net.

The third edition of this work is a single volume of 681 pages with 325 illustrations. The typographical make up is excellent. The illustrations are admirable and supplement the text efficiently.

The purpose of the volume, as stated in the preface, is to present anatomic facts in terms of their clinical values. This purpose is carried out with great precision and welcome brevity, both of which qualities enhance the attractiveness of the work. Here are presented anatomic facts in relation to surgery, tersely, clearly, without "padding" and readily accessible to the practitioner who seeks to refresh his memory on a given point.

The arrangement is regional, beginning in each instance with the surface anatomy of the region to be taken up. Clinical comments and suggestions are interpolated freely throughout the text and the relation of anatomy to symptomatology emphasized in connection therewith.

The rapid development of the industrial field in surgery with the great stress now laid on functional restoration and vocational rehabilitation only indicates the greater necessity for a firm, anatomical foundation. This is especially true of wounds and infections of the hands. The anatomic landmarks in relation to pathological processes of the hands are clearly described by text and illustration. In fact, that part of the work devoted to the surgical anatomy of the hands is one of great value and diffusion of the facts, as set forth there, would mean fewer crippled hands.

As a whole, the work is thorough, complete and very "readable."

THE OXFORD MEDICINE, by Various Authors. Edited by HENRY A. CHRISTIAN, A.M., M.D., Hersey Professor Theory and Practice of Physic, Harvard University, Physician-in-Chief Peter Bent Brigham Hosp., and Sir JAMES MACKENZIE, M.D., F.R.C.P., LL.D., F.R.S.; Consulting Physician London Hosp. Vol. V. and VI. Oxford University Press, American Branch, New York. 1921.

Reviews of the early volumes of Oxford Medicine have already appeared in the *New York State Journal of Medicine*. Their tenor has been more than favorable and comment has been given to plan, form and subject matter already. Since the completion of the work, and the addition of another volume, made necessary by the increasing bulk of medical facts which has resulted from the long delay in publication, the original impression has been strengthened. The presentation of the individual articles throughout is fully up to the high standard set by the distinguished men who lead the editorial staff. Nothing more need be said as it is useless to point out individual excellencies in a work where the general tone is so high. It remains to be seen with this as with other systems of medicine whether the plan to keep it abreast of the march of medical science is fulfilled. There is no doubt that the loose leaf idea is excellent, but it is by no means easy to keep all parts of the work abreast of the times. For one thing men do not live forever, and their personality often counts for as much as the actual substance of what they write. However, it is present accomplishment and not future possibilities that we have now to deal with, and the present accomplishment is like good wine that needs no bush.

HENRY G. WEBSTER.

THE SPLEEN AND SOME OF ITS DISEASES. By Sir BERKELEY MOYNIHAN, England. 129 pages, 13 page diagrams. Phila. and London. W. B. Saunders Co., 1921. Cloth, \$5.00 net.

There are at least three notable works which have been written concerning this organ. The first was contributed by that master-anatomist, Henry Gray, whose "Structure and Use of the Spleen," published in 1854, won for its author the Ashley Cooper prize. It marks the progress of our knowledge of the spleen up to the middle of the nineteenth century. This was presented from mainly the anatomists' angle. In 1918, Pearce and his collaborators, working in the Department of Experimental Medicine at the University of Pennsylvania published a volume "The Spleen and Anemia" for the most part from the experimental side which contains a wealth of information and stands as a monument to a great work. In December, 1920, Sir Berkeley Moynihan, of Leeds, England, delivered the Bradshaw Lectures before the Royal College of Surgeons upon "The Spleen and Some of Its Diseases." These lectures have appeared in serial in a British medical journal and now appear in book form as a very welcome and authoritative addition to our knowledge of this organ.

An enormous literature now exists pertaining to the spleen and much courage is necessary to attempt to collect it, to classify what we know and to separate what we do not know and to so sift it that it may be properly digested and assimilated. Moynihan has not attempted a work covering the entire field of Splenology but has selected certain aspects which are admirably presented and we are indebted to him for his splendid efforts to add to our sum total of knowledge.

In Moynihan's book are to be found considerations of anatomy, physiology, pathology and surgery. There are excellent sections devoted to the mode of origin of the splenomegalies associated with the anemias and on the relation of the spleen to some of the other abdominal organs, especially the liver, which is splendidly conceived. He takes up in detail the surgery of Pernicious Anemia, Leukemia, Splenic Anemia, Gaucher's Disease, Hodgkin's Disease (Pseudokemia) and Hemolytic Jaundice. There is much of historic interest in connection with each disease. The very important subject of nomenclature and nosology of splenic lesions is not intimately discussed. Other aspects of splenic disease omitted are pathology and surgery of injuries, cysts, new growths, abscesses, infarction, border-line non-conforming lesions and metabolic studies, both experimental and in the human before and after splenectomy, but to cover the whole subject of disease to which the spleen is heir would be a herculean task. Moynihan has done well indeed as far as he has gone.

The spleen as seen for an individual surgeon usually affords but scanty material by itself for a book. Hence while Moynihan's experience has been large in many fields, in his work on the spleen it is noted that the work of others has necessarily been very frequently quoted. In this connection we are again filled with just pride at the accomplishments of American surgery and to note the work from the Mayo Clinic included in an English book. The Mayo's work is frequently quoted because their statistics are not only the most valuable reported from any individual clinic but the most valuable collective statistics which have appeared anywhere at any time. To William J. Mayo especially, who has written so extensively and so wisely upon the surgery of the spleen, all those who are students of this organ must acknowledge a great debt. His forceful writings embody the conviction of one of the greatest living authorities on the spleen.

ROYALE HAMILTON FOWLER.

TUBERCULOSIS AND HOW TO COMBAT IT. A book for the patient. By FRANCIS M. POTTENGER, A.M., M.D., LL.D., F.A.C.P. St. Louis: C. V. Mosby Company. 1921. Price, \$2.00.

Dr. Pottenger has collected in this volume the lectures and talks given by him to his patients on the subject of pulmonary tuberculosis. In giving these lectures he was actuated by the belief that the more knowledge the patient has of the disease itself, of the principles underlying its treatment and cure, of the reason and purpose of the important symptoms, the more courageously and completely will he co-operate with his physician. The effects of his lectures were sufficiently gratifying to prompt and justify this publication. The author's ability, reputation, and more than twenty years' experience with tuberculous people makes the reader anticipate in this book a high degree of quality and he is not disappointed. Although intended for the lay person, many physicians who have devoted little special attention to tuberculosis for several years past will find here much to refresh their memories or learn anew on present day views of many subjects, particularly infection and disease, as well as interesting points in the physiology of respiration and the circulation.

The chapters, especially, on exercise, air and ventilation, food with consideration of the vitamins, and marriage will express ideas that are sound, useful and valuable to the patient.

It is very difficult to write such a book suited for all patients with this disease. The mental capacity of all tuberculous patients is not of uniform high standard, and as we meet them in our clinics and hospitals of the large cities is not always sufficient to enable them to grasp and avail themselves of its contents. To patients, however, with fair intelligence and will power, to patients in private institutions, and those not too far advanced in this disease, this book will prove of much benefit.

T. A. MCGOLDRICK.

DISEASES OF CHILDREN, designed for the use of students and practitioners of medicine, by HERMAN B. SHEFFIELD, M.D., formerly Instructor in Diseases of Children, N. Y. Postgraduate Medical School; Medical Director, Beth David Hosp. 238 illustrations, mostly original, nine color plates. St. Louis: C. V. Mosby Co. 1921. \$9.00.

Dr. Sheffield has written a treatise on disorders and diseases of children which is well adapted for the general practitioner and the student. He treats his subject from a different view point and angle than that found in the usual text book. His grouping is based upon the modern conception of diseases and is calculated to be more within the grasp of the general practitioner than that of classifying according to ambiguous pathological causes. He pays more attention to treatment than is usually found in text books of the past few years. The usual method is to elaborate upon modern diagnostic methods such as blood chemistry, serology, finer points of differentiation and then to throw in a few hints as to treatment. Sheffield, however, covers all the latest knowledge of the theoretical and practical consideration of the various conditions and in addition spends quite some time and space upon treatment. Especially valuable to the young physician are the very numerous prescriptions distributed throughout the book with words of advice as to their proper use. While the reviewer does not agree with some of his prescriptions, such as the use of urotropin in combination with alkalies in the treatment of pyelitis or cystitis, or his comparatively small dosage of antitoxin in diphtheria, or his forgetting to mention the use of arsenic and salvarsan in the treatment of noma,—still we feel that he has performed a duty in reminding some of our therapeutic nihilistic

friends that there is as much importance to be attached to the treatment of a condition as to its diagnosis.

Of special mention are the excellent photographs and X-Ray pictures and the chapters on diseases of the nerve system, amentia, examination of the patient and prevention and control of disease.

MURRAY B. GORDON.

MENTAL HOSPITAL MANUAL. By JOHN MACARTHUR, M.R.C.S., L.R.C.P., Senior Assistant Medical Officer, London County Medical Hospital. Henry Frowde and Hodder & Stoughton, London, England. 1921. \$5.25.

This manual is intended for use of physicians entering the service of mental hospitals, and especially applies to the mental hospitals of England, although the instructions and advice in the various chapters are applicable to any hospital.

The writer does not take up the organization of hospitals from an administrative point of view, but discusses the medical aspect, treatment, etc.

He gives an outline of admission, observation, chronic, working and convalescent wards, and infirmaries, stating the purposes of each.

He evidently is not acquainted with the American type of continuous bath, inasmuch as he states that "a movable wooden covering to the lower two-thirds (of the tub) may be used, by means of which the patient may be given a continuous bath." In an American continuous bath the patient is placed in the tub on a canvas hammock, and a sheet is placed over patient.

He speaks of padded rooms which we do not use, and we doubt if a padded room will be found in any hospital in the State of New York.

After a very frank discussion of the duties of the assistant medical officer, the writer takes up the treatment of mental cases. He describes the various dietetic, medicinal and open air treatments. He also discusses in a very succinct manner, psycho-analysis, association tests, dream analysis, hypnotic analysis, hydrotherapy, etc.

The English method of using mechanical restraint is the same as in America, and is used in order to prevent the patient from injuring himself or others. The author does not mention the so-called "protection-sheet" which is used in the States, especially for suicidal cases.

Chapter 5 treats of emergencies that may arise in a hospital,—surgical or otherwise.

Chapter 6 is on the treatment of special states in mental cases and considerable attention is given to the management of suicidal cases and to the treatment of epileptic states.

The book is very well worth perusal by hospital men and there are very many valuable points raised. Many forms are given that apply strictly to the practice in England and do not apply to the commitment and service here.

HARRIS.

THE MICROTOMIST'S VADE-MECUM. A HAND-BOOK OF THE METHODS OF MICROSCOPIC ANATOMY. By ARTHUR BOLLES LEE, Hon. F. R. M. S. Eighth edition, edited by J. BRONIE GATENBY. Octavo of 594 pages. Philadelphia, P. Blakiston's Son & Co., 1921. Cloth, \$6.50.

This work has long been known to microtomists as a most complete handbook on the subject of the preparation of tissue for microscopic study. The present edition equals and perhaps betters the performance of its predecessors. With one exception it seems to be an admirable and exhaustive reference work. Only the briefest mention is made of freezing methods. These have been developed to such a degree of usefulness in several American clinics that it behooves the author of a reference book to include a description of the technique.

E. B. SMITH.

DISEASES OF THE SKIN. By RICHARD L. SUTTON, M.D. Fourth Edition. Revised and enlarged. C. V. Mosby Company, St. Louis. 1921.

This, the fourth edition of Sutton's book, follows the same form as his previous editions, presenting the fundamentals of dermatology in a clear and concise manner. His descriptions of the various cutaneous maladies are also of a style which conveys their definite, intended impression.

There are some additions under the heading of treatment, as would be expected in the light of greater knowledge obtained during the past two years. He has also included a number of new plates which aid greatly in increasing the value of the text. A few diseases have been regrouped, and finally, there has been a large increase in the bibliography.

The merit of this book and its right to a place among the standard works on dermatology is proven by the necessity for publishing four editions during the past five years.

E. A. G.

THE CARE OF EYE CASES. A Manual for the Nurse, Practitioner and Student. By ROBERT HENRY ELLIOT, M.D., B.S. (Lond.); Sc.D. (Edin.); F.R.C.S. (Eng.) Lecturer Ophthalmology, London School Tropical Medicine, Ophthalmic Surgeon, Hosp. Tropical Diseases, Prince of Wales Hosp. 15 illustrations. Henry Frowde and Hodder & Stoughton, London. 1921.

Anything coming from the pen of Col. Robert Henry Elliot is worthy of careful perusal. This manual of about 150 pages was not intended as a text-book on diseases of the eye. The learned author's purpose was not to attempt to make surgeons of the nurses but to instruct nurses so that they might become more intelligent and therefore more efficient helpers of the surgeons. For, as stated in the preface, "There must be teamwork between the surgeon and the nurse, if the patient is to get the best possible result." Full directions are enumerated concerning the preparation of patients for operation. Complete instructions are given regarding post-operative care and treatment.

An appendix gives an illustrated list of instruments used in ophthalmic surgery. Much credit is due to the publishers who did their part towards making an excellent book attractive.

JAMES W. INGALLS.

GENERAL PATHOLOGY—An introduction to the Study of Medicine. Discussion of the Development and Nature of Processes of Disease. By HORST OERTEL, Strathcona Professor of Pathology and Director Pathological Museum and Laboratories of McGill University and Royal Victoria Hospital, Montreal. Cloth, pp. 357, with illustrations. Price, \$5.00 net. New York: Paul B. Hoeber. 1921.

Professor Horst Oertel's presentation of General Pathology makes very interesting reading. Between its covers is a wealth of material and a mine of information.

Unfortunately, the attempt to cover a great deal of ground has resulted in the sacrifice of completeness for the sake of space and time. Many of the subjects, especially the bacteriological, have been passed over in a rather sketchy manner, thereby leaving an impression of incompleteness. Parts of the book have evidently been written hastily, and printed without proper supervision as evidenced by misspelling and lack of clarity. It is to be regretted that the work of a master and teacher containing information and ideas so valuable should be presented in a form that leaves one to judge it is lacking finesse.

THE MEDICAL CLINICS OF NORTH AMERICA (issued serially, one number every other month). Volume 4. Number 6. By Boston Internists. Octavo of 297 pages, including complete Index to Volume 4 and 35 illustrations. Per clinic year (July, 1920, to May, 1921). Phila. and London: W. B. Saunders Co. Paper, \$12 net; cloth, \$16 net.

The articles in this number continue the high standard of papers appearing in these Medical Clinics. Each paper covers its title thoroughly and it is difficult to specify one as more complete than another. The subjects are varied, and the reader will find good material of interest in his own line. The article by Christian on "The Right and Wrong Use of Diuretics" presents clearly the subject upon which the author has given much attention during the past few years. As would be expected from a Boston number, Walker and Rockemann have given excellent studies on hay fever and asthma. The heart has been covered in regard to rapid heart action by Levine, and studies on the electrocardiogram are reported from the clinic of White and Burwell. Joslin has added an article on diet in diabetes which is excellent. O'Hare reports a case of vascular hypertension with autopsy, which he was able to follow a number of years and which presents many points of interest. "Syphilis of the Lungs" by Locke, and "Malignant Disease of the Lungs" by Rodney present two carefully prepared studies of these conditions. Each article in the magazine is worthy of the number.

H. M. M.

THE ASSESSMENT OF PHYSICAL FITNESS, by Correlation of Vital Capacity and Certain Measurements of the Body. By GEORGES DREYER, C.B.E., M.A., M.D., Fellow of Lincoln College, Professor of Pathology in the University of Oxford. In collaboration with GEORGE FULFORD HANSON. With a Foreword by CHARLES H. MAYO, M.D., Rochester, Minn. Cloth, pp. 128, with XXIV Tables. New York: Paul B. Hoeber, 1921. \$3.50 net.

There is no question but that the usual tables showing the relationship of age, weight and height are unsatisfactory in many instances. Furthermore, in most books dealing with this subject no consideration is taken of the occupation of the individual. The author has elaborated some interesting tables showing the relationship between weight, length of trunk, circumference of chest and vital capacity. He divides occupations into three large groups. By applying the proper formulæ, as derived from the various tables, one is enabled to state definitely that the individual may be normal or abnormal, and it seems that the method advocated will be more satisfactory and more nearly exact than the usual methods used. The book should be of particular value to physicians interested in industrial medicine and insurance.

PROSTHETIC DENTISTRY. A text-book on the chair-side work for producing plate dentures. By DOUGLAS GABELL, L.R.C.P., M.R.C.S., L.D.S., Dental Surgeon to the Royal Dental and Charing Cross Hospitals, Lecturer on Dental Mechanics to the University of London at the Royal Dental Hospital. Henry Frowde and Hodder & Stoughton, London, England, 1921. \$4.25.

This volume is devoted solely to the chair-side work for producing plate dentures. The chapters on "Preparation of the Mouth," "Impressions and Casts," "Taking the Bite," "Selection of Teeth," "Strength and Rigidity," "Retention of Dentures," etc., are replete with practical suggestions. The various steps in the construction of dentures are described in great detail. In fact, the author has been so painstaking in covering every phase of the work that the reader rejoices to find at the end of each chapter a resumé of the more important points.

The author, while acknowledging the value of the Gysi measuring instruments, believes that the use of an anatomical articulator with an average movement and a final adjustment of the occlusion at the chair side, is the most practical method of setting up the full denture cases.

E. A. H.

LES NOUVELLES METHODES D'EXAM DU CŒUR EN CLINIQUE par R. LUTEMBACHER. Masson et Cie, Paris, 1921.

The study of disorders of the heart has made such great advances in recent years that a work of this kind is particularly interesting as setting forth the views of French cardiologists.

The text is divided into two main parts, the first devoted to "Graphic Methods; Study of the Arrhythmias" and the second to "Radioscopy."

In the first part of the book there are seventy-five original tracings, each deciphered minutely with the reader so that he may learn to identify each type of arrhythmia. One chapter is given over to arrhythmias from the clinical standpoint, with their influence on diagnosis, prognosis and treatment of cardiopathies. The second part analyses and interprets twenty-four radioscopies, and in each case there is presented a photograph of the corresponding anatomical specimen. Lutembacher's treatise really contributes much to the exposition of the newer methods of cardiac examination, and further constitutes a collection of jugular tracings and a photographic presentation of the principal cardiac lesions.

The reading matter is so well supplied with tracings, diagrams and photographs that only a meagre knowledge of the French language is required for its understanding and appreciation.

W. H. DONNELLY.

THE MASTER OF MAN; THE STORY OF A SIN. By HALL CAINE. J. B. Lippincott Company, Phila. and London, 1921.

This is a typical Hall Caine story and will be welcomed by those who have admired his former productions. It is a somewhat morbid tale, well told by a finished novelist, and, while somewhat improbable to the present-day reader, it is nevertheless one which compels interest in the story and admiration for the pen which produced it.

The setting of the story in the Isle of Man, and the interpolation of Manx phrases are characteristic of the author, and add to the weirdness and fascination of the book. The plot deals mainly with the unusual situation of a judge being called upon to pass judgment and sentence on a girl accused of the murder of her infant, of which he himself was the father.

Being unable to avoid the sentence of imprisonment on the girl he aids her escape and then gives himself up as both her accomplice in the escape and the father of her child. All through this ordeal his fiancée sticks by him and marries him in prison, where the story ends.

As said before, those who admire Caine's productions will find that this one runs true to form.

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CERVICAL RIBS: WITH SPECIAL REFERENCE TO THE SURGICAL TREATMENT.*

By ALFRED S. TAYLOR, M.D.,
NEW YORK CITY.

THE number of cases of cervical ribs which have been reported has increased rapidly, especially since the radiograph has made it possible to make a definite diagnosis in many instances which would otherwise have been obscure.

The publications of Keen, Halstead, Church, Russell, Goodhart, Skillern, *et al*, have so fully covered the morphology, incidence, anatomy, pathology and symptomatology, that further extended discussion is unnecessary. Nevertheless, it will be useful to recapitulate the facts.

These ribs appear in females as compared to males in the ratio of about three to one. (Keen.)

They are usually bilateral, though asymmetrical, as one is usually much more developed than the other.

With very rare exceptions they are attached to the seventh cervical vertebra.

They vary in size from a somewhat enlarged transverse process of the vertebra, to a complete rib which articulates with the vertebra and the sternum. Between these two extremes there are many intermediate stages of development.

The rib may be joined to the vertebra by a true articulation, may be held to it merely by fibrous tissue, or may be united to it by bony fusion, and the more rudimentary the rib the more likely is bony fusion to be the method of union.

When the anterior end of the rib does not reach to the sternum, it is usually attached to the first true rib either by direct articulation between the two, or by articulation between the end of the false rib and the summit of a bony projection from the upper surface of the true rib. In either case there may be direct union without the presence of a true articulation. In the more rudimentary ribs there is usually no direct contact with the first true rib, but there is usually found, arising from the tip of the false rib, an aponeurotic band which runs forward and downward to an attachment to the first true rib.

This has been reported by a number of observers, and occurs in several of the small series herewith reported. This aponeurotic extension causes the same symptomatology as does a false rib of similar extent.

In the presence of these accessory ribs the subclavian artery rises to a higher level than usual in the neck. In those cases in which the false rib is joined to an upward bony projection from the upper surface of the first true rib, the artery is usually found crossing the true rib just in front of the bony upward projection.

The subclavian vein is changed in position only when the false rib is complete and reaches the sternum.

The eighth cervical and first dorsal nerve roots pass up over the false rib to join the plexus. They are usually the first to show signs of traumatism, the results of which are expressed not only by motor and sensory disturbances, but also in a certain percentage of cases, by vaso motor changes because of injury to the sympathetic communicating branches which run with these roots. (See cases 3 and 5.)

Symptoms resulting from the presence of cervical ribs practically never appear before the age of 15 years and may make their primary appearance as late as 55 or 60 years. (Case 3.) In the majority of cases they first appear between 20 and 30 years of age. In many cases the ribs are discovered incidentally and have never caused symptoms.

Various reasons are given for the late appearance of symptoms: the ossification of the rib with resulting increased rigidity, which goes on between 15 and 25 years of age; traumatism, exemplified in the carrying of heavy weights in the hand or on the shoulder which would drag the extremity downward and so increase the tension of the lower nerve roots over the false rib; habitual faulty position, standing with shoulders stooped and carried forward; poor muscular development, or marked relaxation following a debilitating illness, all of which allow the extremity to sag and increase the tension of nerve roots over rib. This last item has been prominent in my small series.

Where the rib is sufficiently developed to share in the movements of respiration with the true ribs, its excursions would add to the nerve traumatism.

* Read at the Annual Meeting of the Medical Society of the State of New York, at Brooklyn, May 4, 1921.

In the individual case these factors undoubtedly combine in varying proportions to cause the final result.

Symptoms.—Sensory symptoms are usually the first to appear: paræsthesias involving chiefly the ulnar side of the forearm and hand: pains involving the same region or extending over the whole extremity and in a certain few cases radiating also to the neck, ear, shoulder, and even to the intercostal region: in the cases of longer duration hypæsthesia or anæsthesia may supervene.

A number of writers have published cases in which dissociated sensory disturbance suggested syringomyelia and in a recent paper Bassoe has again emphasized the fact that true syringomyelia is a not infrequent associate of cervical ribs.

The signs of motor disturbance also develop insidiously, increased fatiguability appearing first and then, gradually, loss of power and atrophy. The atrophy is said to appear first in the thenar muscles, but eventually most of those supplied by the ulnar nerve are involved. In a few cases the paralysis and atrophy are widespread. Claw-hand deformities may result.

Trophic disturbances appear in the more severe cases, usually in the fingers, and are indicated by thin glossy skin, blebs, ridged nails, and even by gangrene more or less extensive.

Vasomotor changes are not uncommon. Swelling, cyanosis, hyperidrosis and coldness may involve the fingers and hand, Case 3, or even extend up the entire extremity, Case 5.

All of the above symptoms may increase slowly and steadily, or there may be periods of remission.

After symptoms have once definitely appeared the probabilities are all in favor of progression, whether it be rapid or slow, steady or intermittent. The severity of the symptoms is not at all dependent on the size of the rib.

The local signs consist of a resistant bony mass in the base of the neck 2 to 3 c.m. above the middle of the clavicle. This often causes a visible prominence. It is usually quite tender to pressure.

The subclavian artery rises higher than normal in the neck. It passes above the rib when it is nearly or quite complete: lies in front and slightly below the tip of the less extensive ribs: and lies over the aponeurotic extension running forward from the tip of the more rudimentary ribs. Varying postures of the arm may modify or obliterate the pulse.

The lung apex usually rises higher than normal. The lower roots of the plexus can be felt more distinctly than usual and are more sensitive to pressure which also aggravates the sensory symptoms already present.

Not infrequently there is a cervical scoliosis. This is occasionally due to a wedge-shaped accessory vertebra with which the rib articulates.

Good stereoscopic radiographs are essential to making the diagnosis. In the case of very rudimentary ribs there is much room for argument as to the permissibility of the diagnosis, and one must then interpret the plates in the light of the clinical findings.

When the process of exclusion has narrowed the diagnosis down to that of cervical rib as the cause of the symptoms in a given case the question of treatment is in order.

A certain number of men advocate non-surgical treatment over a considerable period of time. This consists in the use of a sling to prevent the weight of the extremity from tugging on the plexus and artery, and the employment of massage, heat, etc., for the improvement of the circulation and nutrition.

While this treatment will undoubtedly give relief during its continuance, and may, in cases where the symptoms are very mild, give an apparent cure for a time, it is extremely unlikely that any permanent improvement or complete cure will be obtained, in a case where the rib has once been the cause of definite symptoms, except by the removal of the basic cause.

The objections to surgical treatment are that the operation is difficult, is apt to be quite bloody and is frequently followed for a varying period of time by more or less paralysis of the extremity which results from operative traumatism to the plexus.

Were it not for these objections, which a review of the literature show to be very real, there could be no question that operative treatment should be the method of choice. It remains, then, to so perfect the operative technique as to minimize or eliminate the causes for the objections to operation.

The stage of the trouble at which operation is done influences very materially the result. The more pronounced and advanced are the symptoms the less likely is the result to be a complete cure.

The more the nerves have been damaged by the rib, the more are they susceptible to lasting damage from any traumatism at the time of operation.

If operation is delayed until more or less thrombosis has occurred in the arteries of the extremity, then the results must be far from satisfactory.

Where the condition is complicated by the presence of syringomyelia it may be difficult to determine the degree of responsibility of the rib in relation to the symptoms, but there can be no question that the removal of the rib, if it can be done without traumatism to the plexus, is a distinct advantage to the patient.

When a complicating neuritis involving the entire plexus is present it might well be advisable to enforce rest and treatment until the neuritis has largely subsided before removing the rib,

since operation during the active stage might undoubtedly cause post-operative aggravation of the pain, and the nerves would be more susceptible to damage in other respects.

Operations for the removal of cervical rib have been classified in three general groups:

1. The "anterior," in which the incision is made along the posterior border of the sternomastoid muscle, thus giving exposure of the front of the plexus and the cervical rib.

2. The "lateral," in which the incision is above and parallel to the clavicle, or runs along the anterior border of the trapezius muscle. In either case the exposure permits attack on the rib from the lateral aspect of the neck and plexus.

3. The "posterior," in which a vertical incision is made about 2 to 3 c.m. to the side of and parallel to the spinous processes of the cervico-dorsal vertebræ, giving an approach through the trapezius muscle to the posterior aspect of the rib close to the vertebra.

The first approach involves so much manipulation of the plexus as to be undesirable.

The second, or lateral, approach is, on the whole, the best.

The third involves cutting through a thick and important muscle, the trapezius, and the working field is at considerable depth. It gives direct approach to the inner portion of the rib, but necessitates working around a corner to get at the attachment of the rib to the vertebra and it is during the separation of this part that troublesome hemorrhage is likely to occur, and its control from behind is difficult.

The fact that there are three groups of procedures, each of which is advocated by different surgeons, means that none of them are perfectly satisfactory.

The best operation must fulfill the following conditions:

(a) The exposure must be sufficiently free to permit complete removal of the rib and the control of such hemorrhage as occurs.

(b) The attack upon the rib must be from such an angle as to involve the minimum manipulation and retraction of the brachial plexus and its roots, since injuries to these cause the most serious sequelæ of the operation.

(c) The healed wound should be as inconspicuous as possible. This is quite important since these ribs occur in women, according to different authors, from three to nine times as often as in men.

The following technique has seemed to fulfill the requirements and has been used in all but the first of the series of five cases here reported.

The incision starts at the posterior edge of the insertion of the sterno-mastoid muscle into the clavicle and passes upward and outward to the border of trapezius muscle, making an angle of about 45 degrees with the clavicle, Fig. 4.

It may slant either above or below this line according to the conformation of the individual neck. This incision lies right in the natural wrinkles of the skin. After healing it always remains as a fine hair line instead of spreading, after a few months, into a broad ugly scar as do the skin incisions made in other directions in this part of the neck.

When this incision is carried through the skin and fascia, the transversalis colli vessels are tied and divided, the fat pad in front of the plexus is mobilized at its outer edge and retracted inward, and then the brachial plexus is completely exposed. Fig. 1.

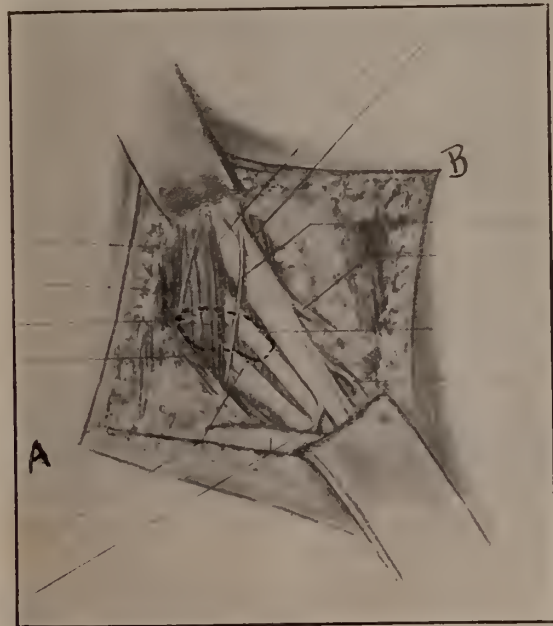


FIG. 1.—Drawing of adult left plexus exposed by incision described. In the average dissection C viii and D i are at a lower level, being almost behind the clavicle.

a. Beginning of incision over the insertion of the sterno-mastoid muscle into the clavicle.

b. The outer end of the incision over the border of the trapezius muscle.

The dotted line figure shows about the position of the rudimentary type of rib which, of course, lies behind the nerves, and, when it is present, is associated with a marked upward arch of the lower roots of the plexus which always pass above the rib.

The cervical fascia is divided along the outer edge of the plexus which is then separated from its bed posteriorly sufficiently to expose the rib and is then very gently retracted forward. This rib is usually higher in the neck than one thinks it is, so that care must be exercised not to mistake the posterior end of the first true rib for it. Where the accessory rib is of good size it is more readily identified, but when it is rudimentary it is often entirely buried in the scalenus medius muscle. In this case it is helpful to locate the prominent carotid tubercle (C vi) and then to feel just below it to identify the rib (C vii).

Once the rib is indefinitely made out, its muscular and ligamentous attachments are divided by sharp dissection so as to leave all periosteum on the rib.

Great care must be taken to protect the pleura and subclavian artery.

In several reported cases, periosteum, which has been left in situ, has generated new bone and symptoms have recurred.

The last portions of the rib to be freed and removed are the neck and head. These are in the center of the danger zone. The seventh cervical root comes out of its spinal foramen and passes over the neck of the rib at about an angle of 60 to 70 degrees. In the rudimentary ribs the whole thing is apt to be a flat plate of bone extending from the vertebral body outward to or a little beyond the tip of the transverse process and having its edges in the vertical transverse plane, so that its upper edge lies just beneath the seventh root at its exit. In the more fully developed rib, the head and neck are more like the normal and present no sharp edge to the seventh root. These anatomical variations may help to explain the frequently observed clinical fact that the small rudimentary ribs often cause more neurological symptomatology than do the fully developed ribs.

Just in front of the neck of the rib runs the vertebral artery with its plexus of veins, except in the unusual type where the artery enters the foramen in the seventh instead of the sixth transverse process. It is obvious then that the removal of the neck and head causes the chief hazard to the vessels and nerves.

For this part of the work scalpels, scissors and rongeurs with long handles and slender blades are a great advantage. Good illumination is a prime requisite.

After the outer portion of the rib has been dissected free from its attachments it is grasped by small bone forceps and manipulated as convenience dictates while its inner portion is dissected free. Sometimes it is possible to get a clean enucleation of both neck and head, especially when they are held to the vertebra by regular articulations, but frequently, because of troublesome hemorrhage or of firm fibrous or bony union of the head to the vertebral body, one must be satisfied to leave the head of the rib in situ. This has seemed to cause no late disturbance. It is important to remove the rib right up to the head because there might otherwise be continuing irritation of the seventh root. This is accomplished with the slender bladed rongeur.

During all this dissection the plexus must be held slightly forward on a blunt flat retractor with the edges rounded so as to avoid the pressure of any sharp edge on the retracted nerves. The amount of functional loss in the nerves as a result of operation is almost entirely dependent

upon the skill, gentleness and continuing thoughtfulness of the assistant holding the retractor. One must make frequent remissions in this part of the procedure with removal of the retractor to avoid too prolonged continuous compressions of the nerves.

Toward the end of the procedure, annoying hemorrhage is apt to result from injury of some of the veins forming a plexus about the vertebral artery.

Packing controls this type of bleeding in a few moments.

If, by chance, the vertebral artery should be damaged, it would be most unwise to attempt clamp and ligature in situ because of risk to the plexus in the necessary manipulations. However, it would be easy to expose the vertebral artery, near its origin, through the anterior inner portion of the wound, for ligation. In the same way the inferior thyroid could be ligated if by any chance it should be injured.

In the case of ribs which are complete or nearly so, the portion in front of the plexus can be dissected free and removed. The plexus can then be mobilized, gently retracted forward and slightly inward, and then the remainder of the rib removed by lateral approach to the rear of the plexus as above described.

In the rudimentary type the entire bone may lie within the scalenus medius muscle which must be split between its bundles until the tip of the rib is located. It is then enucleated as above described. In this type there is frequently, if not always, a strong aponeurotic extension running from the tip and lower margin of the rib forward and downward to the first true rib or even to the sternum. This aponeurosis, being tense, causes pressure on the nerves as they pass over it. It must be thoroughly released from any attachments that hold it taut.

The rib having been removed and hemostasis secured, the fat pad is replaced in front of the plexus and the wound is closed without drainage by means of interrupted and continuous silk sutures which include the skin and fascia. The lips of the wound fall together naturally. After a short time the scar is lost among the natural skin wrinkles. Fig. 4.

The above described exposure, then, has the following advantages:

1. It gives a complete exposure of a cervical rib of any degree of development, from the sternum back to the spine. It really combines the exposure given by both the anterior and lateral groups previously mentioned.

2. The risk to the plexus is minimized because the attack on the spinal segment of the rib is made almost parallel to the posterior plane of the plexus and from the lateral aspect so that the plexus needs to be only slightly retracted forward. Ribs can be removed without any evidence of traumatism to the plexus. Case 4.

3. Hemorrhage can be controlled either at the site of its origin or by exposure of the origin of the artery without increasing the incision.

CASE I.



FIG. 4.—Radiogram of Dr. Goodhart's case made before removal of the false ribs. The supernumerary ribs are indicated by arrow heads. Note the greater prominence of the left cervical rib. Scoliosis is evident. (The radiogram was made by Dr. L. G. Cole, New York.)

4. No muscles or structures of any importance are divided, except those attached to the rib which must be divided anyway in order to remove the rib. The whole dissection follows natural lines of anatomical cleavage.

5. When the skin edges are released from retraction they naturally fall together, healing is by a fine hair line which never shows a tendency to spread and which is lost among the natural skin wrinkles. This cosmetic result is of great advantage to female patients and is gained without any loss in any of the other desiderata of the procedure.

(The Case published by Dr. S. P. Goodhart in *Am. Jr. Med. Sc.*, Nov., 1909.)

Case 1. Mrs. Br.; 28 years old.

In her eighth year she began to have pains in the left shoulder radiating down the arm and attacks of paroxysmal numbness of the entire extremity. Later there was prominence of the left shoulder blade, pressure downward upon which gave rise to pain and numbness in the extremity. After a few years there was lessened dexterity in the left hand.

When 18 years old placing the left hand behind her often caused flexor spasm in the muscles of the forearm and hand. When 24 years old there was some weakness of the left hand, followed by progressive atrophy of its intrinsic muscles. At intervals, the extremity was cold subjectively and objectively, especially from the elbow downwards. During these attacks muscular weakness was increased. Posture did not influence these attacks. There was hypesthesia of the inner side of the forearm and hand.

Later there was atrophy of the muscles of the forearm supplied by the ulnar nerve and also

some atrophy of the left pectoralis major. Figs. 6, 7, 8.

Figs. 2 and 3. There was a palpable bony tumor above the left clavicle and a smaller one above the right clavicle. A radiograph showed bilateral cervical ribs, both articulating with a bony prominence on the corresponding first true rib. Fig. 4.

Shortly before the operation the left radial pulse was smaller than the right and could be

CASE I.



FIG. 6.—Showing particular atrophy of the interossei of the left hand. (Dr. Goodhart's case.)

Right CASE I. Left



FIG. 7.—Showing muscular atrophy of the left forearm and hand. (Dr. Goodhart's case.)

Right CASE I. Left



FIG. 8.—Showing atrophy of the left palmar muscles. (Dr. Goodhart's case.)

obliterated by gently compressing the subclavian artery against the rib.

There was no edema or cyanosis of the hand on either side. About six months before operation there appeared some weakness of the right index finger, slight numbness in the thumb and lack of dexterity in the use of the hand.

Fig. 4. There was a scoliosis from C vi to D v with the convexity toward the left, which in-

CASE I.



FIG. 3.—Showing the relative positions of the inner and lower borders of the scapulae. The high scoliosis is also evident. (Dr. Goodhart's case.)

creased the prominence of the left rib which was also the larger. May 14, 1907. Operation. Ether anesthesia.

Left side.—Incision from the junction of the middle and lower thirds of the sterno mastoid muscle downward and outward to the outer third of the clavicle, through skin and fascia. The external jugular vein and the transversalis colli vessels were ligated and divided. The fat pad was displaced and the plexus mobilized and retracted forward and slightly inward exposing the rib, which was dissected free as previously described. The rib was divided at its middle and the anterior half removed. In mobilizing the posterior half, the neck which was rather slender and friable broke allowing the large fragment to come away easily. After some difficulty the head and remnant of the neck were successfully removed.

The prominence on the first true rib was removed by a rongeur and the bare surface covered by suturing muscle over it. This prominence had a base about 1.5 x 1 c.m. and was about 1 c.m. high. Its summit was rounded and fitted into a cup shaped cavity in the end of the false rib. It was slightly posterior to the middle of the first true rib. The false rib and bony prominence were firmly held together by fibrous tissue. There was almost no mobility. The false rib had true articulations with both the seventh cervical body and the transverse process. Its head and neck were slender and the rib broadened as it extended forward.

The subclavian artery crossed the first true rib

CASE I.



FIG. 2.—Showing the positions above the clavicles at which the osseous growths (false ribs) were seen and felt. (Dr. Goodhart's case.)

just in front of the bony prominence and showed no intrinsic abnormality.

The nerves C viii and D i crossed the false rib near its anterior prominent end and were subject to considerable tension. The roots appeared normal. The other nerves crossed the rib without much apparent tension.

A slip of scalenus anticus muscle was inserted into the forward end of the rib and an external intercostal muscle ran from the false to the first true rib.

On the right side, a similar procedure was carried out except that the rib was about 2 c.m. shorter and it was not divided but removed in one piece except that a small fragment of the head was left in situ. Fig. 5. The relation of the artery and nerves to the false rib was essentially the same as on the left side.

On reacting from the ether she had no feeling in the arms and she had no sense of position.

She could flex and extend the elbows, wrists and fingers but could not abduct the arms.

This was undoubtedly the result of too much retractor pressure on the outer cord of the plexus.



FIG. 5.—One of the false ribs after removal (natural size).

After a week sensation was much improved and the motions were much stronger except for abduction which was still lacking. It was about six months before she had recovered to the equivalent of her preoperative condition.

At the end of a year her right upper extremity was normal, but there was still atrophy and slight sensory changes along the inner left forearm and the hand.

(Dr. C. C. Beling)

Case 2. Louise V.; 22 years.

She was well until she was thirteen years old when she had scarlet fever.

At 17 years she had a mastoidectomy on the left side.

At 19 years she had a mastoidectomy on the right side.

At 20 years she first had a sense of pain and

discomfort in the left shoulder and base of the neck. This pain was increased by activity of the left upper extremity. It continued intermittently for about a year and a half and then became much worse in August, 1915. At this time she had much pain at the base of the skull, in the whole left side of the neck, in the left shoulder and inner side of the arm, together with headache and general depression. There was tenderness in all the muscles of the painful area, especially in the trapezius. There was considerable grating when the upper cervical vertebræ were moved. There was no atrophy, paralysis or sensory defect in the left upper extremity (Dr. Beling).

The apparent myositis was treated by heat, massage, etc., for about four months but there was practically no improvement. On the contrary, during this period the pain shot down the inner forearm and hand and there was a tingling, numb sensation also. The extremity became fatigued more easily and there was a slight loss of power.

In early January, 1916, X-ray pictures showed bilateral cervical ribs, of which the left was larger and more pointed. Fig. 9.

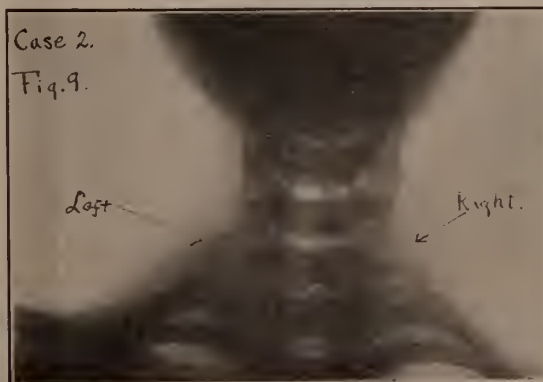
At this time physical examination showed her to be a large, well nourished young woman with ruddy color.

The left cervical rib could be readily felt in the supraclavicular space. The cords of the plexus could be felt as they passed over the rib, and pressure over the point of the rib caused the pain in the back of the shoulder and down the inner side of the arm and hand of which she chiefly complained. There was no scoliosis. (Fig. 9.)

The muscles of the left side of the neck and of the upper extremity were moderately tender to pressure.

There was no abnormality of the circulation or trophic condition of the extremity.

There was no paralysis of any of the muscles nor atrophy of any of the intrinsic muscles of the hand. Nevertheless, the left hand registered 20 on the dynamometer as compared to 35 for the right hand.



There was no loss of sensibility to any form of stimulation.

While she complained of hot feelings in the left side of the neck there was no visible flushing. Operation January 17, 1916. Ether anesthesia.

In this case the head and neck of the rib were freed by going anteriorly between the roots C vii and C viii as they were sufficiently separated and the approach was easy. The remainder of the rib was freed by the technique already described and the rib completely removed.

Immediately following operation she had pain in left shoulder and chest, and on the fifth day pain began in the left hand. There was no motor paralysis.

There was good primary union.

She left the hospital on the tenth day and returned to the care of her physician. At the end of the first month after operation he reported that a moderate atrophy had appeared in the intrinsic muscles of the hand. At the end of three months this atrophy had entirely disappeared.

On April 22, 1921, five years after operation, she wrote in reply to inquiry that she has had intermittent pain in the left side of her neck and in her shoulder since operation but has never had any more of the numb tingling sensations in the arm and hand. The left extremity has regained its full strength.

Case 3. Mrs. Wm. B.; 55 years.

She has always been frail, but very active and well.

When 40 years of age she first had pain in the left upper extremity which was said to be rheumatic. Since that time there have been several similar attacks of pain but she does not remember any special localization of the pain.

During the last two years the finger joints in both hands have developed swelling and tenderness. During the last six weeks she has had severe pain in the cervical and upper dorsal regions involving both the spine and musculature, increased by motion and associated with marked tenderness on pressure. There was also especially severe pain in the whole left upper extremity, increased by active or passive movement and associated with swelling and cyanosis which were most marked in the hand.

Her condition has been getting steadily worse and there has been such interference with sleep and appetite that she has resorted to morphin.

Physical Examination.—She is a woman of medium height and small frame, who is emaciated, very pale, very nervous, with the left upper extremity carried in a sling. No manipulation of the extremity was possible because of the extreme suffering which resulted.

The fingers were semi-flexed, swollen, cyanotic, extremely sensitive to pressure or movement and showed some enlargement of the joints even beneath the swelling.

The swelling and cyanosis of the hand rendered

it impossible to determine the presence or absence of atrophy of the intrinsic muscles.

The swelling involved only the lower third of the forearm, but the cyanosis involved the extremity in lessening degree upward. All the tissues of the extremity were very sensitive to pressure, except for a definite hypesthesia in the ulnar distribution to the forearm and hand.

There was no essential difference between the right and left radial pulse.

The muscles of the cervical and upper dorsal regions out to the shoulders on both sides were very sensitive, and the spinous processes were extremely tender.

The brachial plexus on both sides, especially the roots of C v and V i were exquisitely tender.

A hard mass was present on each side of the neck at about the level of the seventh cervical vertebra, pressure upon which caused severe pain.

Both subclavian arteries were high in the neck and the visible pulsation was marked.

The right hand and fingers showed slight swelling and cyanosis with some evidence of arthritis in the small joints.

With the exception of the above disturbances and slight tenderness of the soft tissues, and pain caused by movement at the shoulder, the right upper extremity was normal.

The mouth showed marked pyorrhea and a number of decayed teeth, with several apical abscesses.

X-ray pictures showed bilateral cervical ribs about 3 c.m. long and 2 c.m. wide at the broadest part.

This patient was obviously suffering from a bilateral neuritis of the cervical and upper dorsal nerves.

In the presence of a very marked chronic focal infection in the mouth, it was difficult to ascribe so extensive a neuritis entirely to the cervical ribs. However, since the findings in the left upper extremity showed unquestionably that the rib was a positive factor in causing the trouble, and in the right extremity the slight swelling and cyanosis of the fingers and hand might well be ascribed to a beginning disturbance by the right rib, it was finally decided to remove the ribs.

Operation, April 26, 1917. Ether anesthesia.

Both ribs were removed by the technique previously described.

On the left side a strong ligamentous band ran from the tip and under border of the cervical rib downward and forward to the first true rib.

This was divided, and the rib was dissected free.

The rib was very cancellous, friable, and contained much fat. It broke into several fragments during removal, but all of it was secured.

On the right side the rib was removed in one piece. Unfortunately, no notes were made as to the exact relations of the nerves and vessels to the ribs.

On the following morning the pain in the left extremity was much lessened, the swelling and cyanosis were entirely gone, and the fingers and hand could be moved much more freely than for many weeks past. With disappearance of the swelling, atrophy of the intrinsic muscles of the hand was obvious.

There was loss of movement in the right hand and arm for two days, after which there was steady improvement.

The pains in the neck and back were much less and although they varied from day to day they were never so bad as before operation.

On the fourth day she sat up. Her pains were rapidly diminishing.

On the eleventh day she returned home, having had almost no pain for three days, having developed a fair appetite and feeling much better in every way.

She could abduct the shoulders 30 degrees.

She could flex and extend both elbows normally.

She could pronate and supinate both forearms normally.

The right fingers and wrist could be flexed almost completely but with little strength: they could be extended not quite to the straight position. The left hand and fingers moved much more freely than before operation. There was still present the paralysis of the intrinsic muscles supplied by the ulnar nerve. The swelling and cyanosis had never returned and the general tenderness to pressure in the soft tissues had almost disappeared.

Two days after returning home and resuming some of her household duties there was a recurrence of her pain, swelling and cyanosis.

She then went to a sanatorium for the treatment of her neuritis.

On April 20, 1921, four years after operation, she returned to the city for examination, stating that for several years she had been free from pain and had been able to do her knitting, sewing, housework, etc., comfortably and satisfactorily.

Meanwhile her mouth had been put in good condition.

Examination showed her to be still very thin and rather pale.

The scars of operation were almost invisible.

There is a marked atrophy and almost complete palsy of the muscles supplied by the right ulnar nerve, so that the right hand shows a fairly typical "main en griffe." Curiously, there seemed to be no loss of sensation in the ulnar area, but rather a hyperesthesia to pin prick in that area as well as in the rest of the hand and forearm. The motion at the wrist, elbow and shoulder were normal.

The left hand shows slight atrophy of the thenar muscles, especially those supplied by the

median nerve. There has been partial recovery of the interossei muscles.

There is slight hyperesthesia of the hand and forearm.

The movements of the fingers of both hands are hampered by the chronic arthritis noted before operation.

The right index finger is subject to frequent spells of blanching, numbness and coldness, otherwise the hands and all the fingers are normal in color and warmth.

The brachial plexuses are only slightly tender. Case 4.

Miss May C.; 21 years.

She was always perfectly well in every way until 2 years ago when, after an automobile accident, her car was towed home and she had to control it by the emergency brake for a period of 45 minutes.

The car was heavy and the strain on the right arm was great and almost continuous.

On arriving home she had "pain and numbness" in the right upper extremity, and could not move the right shoulder without greatly increasing the pain.

After a few weeks the pain lessened but never disappeared. It was increased by using the arm.

About 8 months ago she developed left mastoiditis and after operation the pain in the right upper extremity increased.

Seven months ago she first noticed atrophy of the thenar eminences, and beginning loss of power in the hand and forearm.

For the last three weeks has had pains in the left upper extremity after using it vigorously.

Physical Examination.—She is a young woman of medium size and in perfect health, except for her upper extremities. The right upper extremity shows hypesthesia and hypalgesia everywhere, except over the inner arm (nerve of Wrisberg), especially in the area of the ulnar nerve.

There is diminished sensation to deep pressure over the muscles.

There is great loss of power in the hand grip; atrophy of both thenar eminences, well developed. All movements are present in the extremity, but the power is much diminished.

The right plexus is very sensitive to pressure.

There is no evidence of circulatory disturbance.

The left upper extremity shows nothing abnormal.

The supraclavicular muscles are very well developed and there is considerable subcutaneous fat, so that palpation cannot make out the cervical ribs clearly.

The X-ray picture shows bilateral cervical ribs of moderate size, 2.5 x 1.5 c.m., the widest portion being near the spine, and then tapering to a point externally.

November 12, 1917. Operation under ether anesthesia.

The technique on both sides was as described above.

On both sides a portion of the head of the rib was left. The ribs were very thin and cancellous; the edges were sharp and the tips were just beneath C viii and D i.

For two hours after operation there was numbness in both hands.

Two days after operation the right hand was much stronger than before, and sensation was improving.

On the seventh day she returned home, out of the city. Power and sensation were rapidly improving in the right extremity.

She passed out of observation, but three months later her mother reported by letter that she was perfectly well and able to use both arms freely, vigorously and without pain.

(Dr. Boorstein)

Case 5. Mr. Max K.; 22 years.

He has usually been perfectly well. He had influenza in 1918 and in the fall of 1919 had dyspnoea and precordial pain for a short time.

Toward the end of March, 1920, he noticed that the right upper extremity had become very much larger than the left, that it was often cyanotic, especially in the cold, and that it felt colder both subjectively and objectively than the left. It tired very quickly under any sustained effort, but otherwise did not seem to have lost strength.

Only once did he feel any tingling sensation and then it involved only the tips of the index, ring and middle fingers. He never had real pain.

Physical Examination.—He is a tall, slender man of good color, and fairly well nourished.

General examination shows nothing of interest.

The right upper extremity shows an increase in circumference over the left by 3.2 c.m. in the middle of the arm, 2.8 c.m. in the forearm, and 1 c.m. in the hand. Its superficial veins are twice as large as on the left side and the color is distinctly cyanotic. It did not pit on pressure.

It shows no atrophy, no sensory disturbance and no loss of power except easier fatigability.

In the right side of the neck there is a distinct bony prominence about on a level with the transverse process of C vii. Just below and in front of this prominence is the subclavian artery which is well above the level of the clavicle. The cords of the plexus can be felt distinctly above it and pressure on the lower one over the end of the prominence causes tingling in the inner fingers.

The X-ray plate showed enlarged transverse processes of C vii, which extended on the right side well beyond that of D i or C vi, and was quite broad vertically. As it had no facet, the roent-

genologist reported that it was not a cervical rib. Fig. 10.

There was no scoliosis. Fig. 10.

Inasmuch as the clinical diagnosis pointed obviously to cervical rib, and the transverse process of C vii was unduly large it was decided to operate.

Operation, June 18, 1920. Ether anesthesia.

The rudimentary rib extended about 0.5 c.m. beyond the posterior tubercle of the transverse process and was a broad plate of bone which extended downward almost to the neck of the first true rib.

From its tip and lower border strong fibrous bands stretched forward and downward to the first true rib.

The false rib was dissected free and then removed by rongeur, with the exception of a small portion of the head.

CASE V.



FIG. 10.—The good plate having been lost, this inferior plate had to be used. The relation of the ribs to the transverse processes of D i, are indicated by the rough outlines. The rib on the right side extended slightly beyond the transverse process of D i.

C viii and D i roots passed up over the ligamentous extension of the cervical rib but did not appear to be under tension or pressure. The subclavian artery also did not seem to be under tension.

After operation there was numbness of the whole extremity with considerable loss of power especially in the shoulder muscles.

There was tingling in the fingers, especially the thumb, index and middle fingers.

Tactile sensibility was much diminished.

On the second day the congestion and cyanosis had almost disappeared and sensation and power began to return.

Between the eighth and twelfth days he had several attacks of sharp pain. Aside from this his convalescence was uneventful and rapid.

On the twenty-fifth day he returned for examination.

The right upper extremity was normal in color and temperature. The veins were still slightly

enlarged, but were much smaller than before operation.

The right upper arm is only 1.2 c.m. larger than the left as compared to 3.2 c.m. before operation, and forearm 0.3 c.m. compared to 2.8 c.m.

Motion is free in every direction but there is still very slight loss of power. There is slight hypesthesia of the index and middle fingers of glove type.

The scar was a slender line. Fig. 11.

CASE V.



FIG. 11.—The ultimate hairline scar, which scarcely shows when the skin is not stretched, being lost among the natural wrinkles.

He was not seen again for about four months at which time the extremity was normal and has so remained to the present time.

While this series of cases is small, certain suggestive deductions may be drawn from the group.

The early symptoms are apt to be mild, somewhat indefinite, long drawn out and likely to be attributed to neuralgia, rheumatism, etc.

The symptoms are likely to be started, or markedly aggravated by some preceding debilitating illness (Cases 2 and 5), or traumatism (Case 4).

Very rudimentary ribs are quite capable of causing serious symptoms (Cases 2, 3, 4 and 5). In case 5 the roentgenologist refused to accede to the diagnosis, yet the removal of the "enlarged transverse process" caused the rapid and complete disappearance of the symptoms. While several authors have stated that symptoms are more likely to be caused by the rudimentary ribs, than by the more complete ones, no explanation has been given for this apparent paradox. The

conformation of the rudimentary ribs in this series suggests the reason. Inasmuch as they are broad, flat and thin and set up on edge in front of the transverse process, the nerves passing over them (especially C vii, which must pass directly over the rib in its exit) are much more likely to be irritated and compressed than they would be in passing over a more complete accessory rib which usually assumes the rounded form of the true rib. In addition the rudimentary ribs are very apt to have a forward aponeurotic extension which also presents a sharp-edged resistance to the overlying structures.

Where symptoms have existed over a long period, and especially where paralysis and atrophy form part of the picture, removal of the rib will stop the progressive increase of the symptoms, but may not result in the entire recovery of what has already been lost. (Cases 1 and 3.)

This indicates the necessity of early diagnosis, and the desirability of good stereo-radiographs of the neck in every case of persisting pain or lameness of obscure origin.

When cervical rib, causing symptoms, is associated with a complicating neuromyositis (Case 2), or neuritis (Case 3), probably resulting from chronic focal infection, the removal of the rib will dispose of the symptoms directly due to it, but will only indirectly influence the symptoms of the complicating disturbance. The time at which operation might best be done in these cases can be determined only after comparison of the results in a considerable group in which operation is delayed until the complicating disturbances have largely subsided with those in another group in which operation is done regardless of the associated disturbances. In Case 2 the operation relieved the symptoms due to the rib and caused no aggravation of the symptoms due to the neuromyositis, which symptoms largely disappeared in due time. In Case 3 there was an entirely unexpected, almost immediate, temporary relief of the widespread neuritic pains, as well as immediate relief of the swelling, cyanosis, and loss of power in the left arm and hand. The neuritis, recurrent after her return home, required nearly six months of treatment before recovery occurred. At present it is somewhat difficult to properly allocate the existing defects to the ribs, the neuritis, and the arthritis of the finger joints as causative factors.

Cervical ribs may be removed without the operation causing any additional damage. (Case 4.) In some instances there is evidence of operative traumatism but it is of very temporary duration. (Cases 2, 4, 5.)

A well-placed incision, a lateral attack working behind the plexus, and especially a careful, gentle, intelligent assistant holding the plexus-retractor give assurance of freedom from undesirable operative sequelæ, and the resulting scar will be

scarcely visible among the natural wrinkles of the neck.

If these be facts, then cervical ribs should be removed before they have caused symptoms for any considerable length of time.

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CESARIAN SECTION — INDICATIONS AND CONTRAINDICATIONS.*

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"TO cut or not to cut, that is the question." In reviewing my case histories recently I was struck with what seemed at first like a multitude of reasons for the abdominal deliveries I had done, and this prompted an analysis of the subject and the writing of this brief paper, hoping thereby to stimulate discussion. The development of this procedure and its general application in recent years is really marvelous and its history therefore of no little interest.

To go back to the beginning of the nineteenth century Denman, in his "Midwifery," said, "No other principle but that of necessity can certainly be admitted as a justification for this operation, that is, whenever it is proposed there shall be no other way or method by which the life either of the mother or child can possibly be preserved and the impossibility shall be confirmed not by the opinion of one but as many competent judges as can be procured. Every woman for whom the Cesarean operation can be proposed to be performed will probably die and should any one survive, her recovery might rather be considered as an escape than as a recovery to be expected though there is always a probable chance of saving the child."

Only about forty years later (1849) our own Meigs in describing a badly deformed pelvis wrote, "In such a pelvis as this the pregnant woman ought to be advised to submit to an early abortion whereby she would be preserved from an ultimate direful necessity to undergo a frightful Cesarean operation" and again "I hold that no man has a right to subject a living, breathing human creature to so great a hazard as that attending the Cesarean section from views relating to any other interests than those of his patient's, I believe that the Cesarean operation ought not to be performed in any case whether the child be living or dead in which under the dictates of a ripe and sound judgment and perfect knowledge of the principles of midwifery, a decision may be obtained that a delivery *per vias naturalis* is less dangerous to the mother than that by vivisection."

From France Gueniot reported twenty-six years after this that in the history of Cesarean section in Paris he found only six authentic successes in the eighteenth century and that in sixty-nine years of the nineteenth century of forty operations no patient survived.

In 1876 Playfair's "Obstetrics" was published and from this I quote the following, "In this country (England) it has scarcely ever been performed

* Read at the Annual Meeting of the Medical Society of the State of New York, at Brooklyn, May 3, 1921.

in a manner which offers even the faintest hope of success, it has been looked upon as almost necessarily fatal to the mother and it has therefore been delayed until the patient has arrived at the utmost stage of exhaustion, two to three, even six days after labor had begun and when the patient was almost moribund." Again speaking of operating under improved conditions (of the times) as carefully as one did an ovariectomy, "making every allowance for these facts it must be admitted that the Cesarean section is necessarily almost a forlorn hope and in making these observations I have no intention of contesting the well established rule of British practice that it is not admissible as an operation of election and must only be resorted to when delivery *per vias naturalis* is clearly impossible." Of seventy-seven operations in England sixty-six, or eighty-five percent, were fatal,—“The Cesarean section is required when there is such defective disproportion between the child and the maternal passages that even a mutilated foetus cannot be extracted.”

It is a far cry from the single indication of a pelvis which would not permit of the passage of a child after embryotomy and the mortality of fifty years ago, given as high as eighty-five percent to the varied indications for its performance to-day and the low mortality in well selected cases. Some operators have reported one hundred consecutive operations without a fatality, though I think it is generally agreed that two to five percent more nearly represents the mortality even in good clinics. This is no inconsiderate risk and a review of the reasons for performing abdominal delivery is not amiss.

Briefly, any condition which renders the delivery by Cesarean section safer for mother and child than a pelvic delivery is reason enough for its performance. First, and most common, is disproportion between the passage and passenger, this includes pelvic contractions of all sorts, if sufficiently marked, the large proportion of which fall under the heading of justo-minor, flat, rachitic, Roberts, and Naegles pelvis and outlet contraction or funnel pelvis.

The absolute indication of a true conjugate of 5 c.m. still holds good, where the conjugate is between this measurement and 7.5 c.m. it is practically impossible to deliver an average size child and elective section should be the choice. If the case is frankly infected and the child dead, craniotomy should be done, if living, the classical section followed by hysterectomy should be done or low cervical or flap-splitting method if infection is only suspected.

Between 7½ and 9 c.m. here the question is largely relative or one of proportion between the head and the pelvis it is these cases that require the exercise of the best judgment, many will either deliver spontaneously or after a forceps operation. Points to be considered are: the

size of the head, its ability to mold as shown by thin bones and large fontanelles, the trial of Müller's manœuvre, and overriding at the symphysis, by these methods and signs I find it easier to arrive at a decision than by foetometry. The general condition of the patient, including her age, her past obstetrical history, if not a primipara, her desire for a child and her willingness to assume an added risk for its safety, and if in labor the character of her pains and of the cervix as to its dilatibility.

If after a study of these factors it seems that delivery below is only to be brought by an application of forceps to a head unengaged and unmolded, and if the case is not already infected as can be inferred from absence of frequent vaginal examinations or membranes long ruptured, Cesarean section is the method of choice. If there is a doubt as to the possibility of infection and the patient insists upon choosing in favor of the child the low operation by one of the newer methods should be done.

Pubiotomy does not compete here, for in the presence of infection its mortality and morbidity are equal. De Lee recommends for the suspected case a transperitoneal cervical section, for the infected case; the extraperitoneal operation or Porro, upon what criterion he differentiates these two classes he does not state. If the responsibility is put squarely up to the obstetrician and the injunction is voiced to spare the mother at all events, he should in all fairness choose the pelvic route and attempt a high forceps or do a craniotomy as a last resort. The last case in the series here summarized was of this type, long labor, long ruptured membrane, five examinations carefully made through the vagina but complicated by a contraction ring and an undilated cervix, fearing uterine rupture would follow an attempt at pelvic delivery I did the low operation of Beck with the two overlapping peritoneal flaps, the patient made a recovery but only after a stormy convalescence for the first four or five days, and I am inclined to believe that had I done the classical section she would have had peritonitis.

Outlet Contraction.—This cannot be answered in a word, it is neither a question of transverse diameter alone, or length of the posterior sagittal, but the relation between the two, for instance, a short bischiäl diameter, even with a fairly narrow pubic arch, may be compensated for by a long sagittal or *vice versa*. Williams, who was the first to stress the importance of outlet contraction, has contributed a table of compensating diameters which will admit of the passage of an average size living child.* Two factors,

* Transverse diameter, 8.0 cm.; posterior sagittal, 7.5 cm.
Transverse diameter, 7.0 cm.; posterior sagittal, 8.0 cm.
Transverse diameter, 6.5 cm.; posterior sagittal, 8.5 cm.
Transverse diameter, 6.0 cm.; posterior sagittal, 9.0 cm.
Transverse diameter, 5.5 cm.; posterior sagittal, 10.0 cm.

aside from the measurements alone, to be taken into account are: posterior position of the occiput, and rigidity of the soft parts, as in elderly primiparæ, for either a persistent O.P. or a rigid perineum will complicate even a moderate degree of outlet contraction.

Placenta Prævia.—Central in all cases undilated and in good condition and with a living baby. If in a multipara with considerable dilatation either the intra ovular use of a Vorhees bag or Braxton Hicks manœuver would be as safe for the mother with a fair chance for the child. Lateral or marginal in a primipara with rigid cervix and living baby.

Abruptio Placentæ.—With a patient in anything like fair condition a rapid delivery with almost immediate arrest of the hemorrhage and the most favorable chance for the child is afforded by the classical Cesarean. The shock and increased bleeding, I believe, is less than by an accouchement force.

Other Pelvic Indications.—Stenosis of the cervix following cervical amputation. Obstructing growths such as fibroid of the lower uterine segment unless it can be pushed up out of the pelvis and it is well to remember that some fibroids which seems to offer absolute obstruction are raised out of the pelvis by labor during its first stage. Carcinoma of the cervix, though very rare, is a possible indication. Ovarian cysts if in the pelvis and cannot be displaced upward.

EXTRA PELVIC INDICATIONS

Ankylosis of the hips, fixation of the uterus to the anterior abdominal wall, contraction ring dystocia threatening uterine rupture.

GENERAL INDICATIONS

Eclampsia.—There is not, I feel, a very wide field for the employment of Cesarean section in eclampsia, the case with an undilated rigid cervix as in an elderly primipara, which is not responding to eliminative treatment is probably best delivered by this method but with the great majority of cases I would prefer to stake my chances on eliminative treatment intensively carried out, morphine is necessary and induction of labor, the patient with a grave toxemia especially if she has water-logged tissues is a poor risk for any laparotomy. Eclamptics stand shock poorly. Post operative inactivity of the bowels militates against elimination by free catharsis. Essen-Møller decided in favor of vaginal section after losing three of ten cases of eclampsia operated by the abdominal route.

Pulmonary tuberculosis and grave cardiac decompensation are two similar conditions which the strain of a labor often intensifies. Cesarean section possesses the advantage of offering an opportunity to sterilize the patient, always desirable in tuberculosis. These cases are done under a local anesthetic.

Elderly primiparæ. We are often surprised to find that a woman of forty or thereabouts who has caused us no little worry because of her age will have a spontaneous labor of average length; if she has a borderline type of pelvis, however, I would much sooner elect to do a Cesarean.

The Dictum.—"Once a Cesarean always a Cesarean" is rather a hard question to dispose of. I do not think it is quite true, if the original indication is present again such as contracted pelvis, there is no question, if, however, placenta prævia or accidental hemorrhage was the first reason and there was no evidence of infection post operative the patient might be allowed to go into labor, provided she is in a well equipped hospital where operation might be done if necessary. Two to three percent of all uterine scars rupture either in pregnancy or labor and it is this fact, together with the memory of weak scars seen after an afebrile convalescence, that is disquieting.

It is not so much the mortality of the immediate operation in well selected cases that deters me in making a choice as, what to do in the next pregnancy. No case can be decided fairly without this consideration of future pregnancies.

Newell, in the recent monograph, after reviewing this question, says: "I prefer to deliver every patient by Cesarean section if she has been previously so delivered, except when the patient is in active labor and delivery is imminent when she is first seen by the surgeon," and Cragin, in his "Practice of Obstetrics": "If a woman has once been delivered by Cesarean section it is usually, though not always, wiser to follow this procedure in subsequent labors, unless they are very easy." Williams, on the other hand, does not hold this view, to quote from a paper written by him, "Delivery by the Natural Passages Following Cesarean Section": "If the scar has healed without sepsis, the patient may be delivered later by normal labor in safety."

INDICATIONS RELATING TO THE PASSENGER

Over size or disproportion in a pelvis not showing contraction but due to either a large head or its inability to mold from extreme ossification of the cranial vault as shown by a test of labor, these cases are often *over-term*, an attempt to deliver these by high forceps is almost surely to result in the death of the fœtus and more or less injury to the pelvic floor with its unfortunate consequences. If this occurs in a multipara and the disproportion is not too great, good result will follow version but I do not believe this choice should be made with primiparæ. Threatened asphyxia as shown by the condition of the foetal heart and possibly by the passage of meconium, where rapid pelvic delivery is contra-indicated.

Malpresentation.—As in locked twins, breech or face, also occiput posterior in a primipara, if accompanied by pelvic disproportion, otherwise

not. While bad results may rarely follow from pelvic delivery in a persistent occiput posterior, nevertheless this does not justify the selection of Cesarean section for this indication alone.

CONTRA INDICATIONS

Exhaustion.—A patient with all the evidence of general physical exhaustion including a rapid pulse is a poor risk and is prone to post partum hemorrhage. *In case the child is known* to be dead, with possibly two exceptions exclusive of the absolute indication (of an internal conjugate of 5 c.m. or under) *viz:* placenta prævia centralis or ablatio placantæ where it is felt the time saved in a rapid delivery may be the deciding factor in saving the mother. *In case of monstrosity* if diagnosed. *In the presence of known infection.* This naturally presents the question what constitutes infection. Repeated vaginal examinations through an unprepared vulva, especially if made by one of questionable technique, membranes long ruptured, previous attempts at pelvic delivery or the use of bags, forceps or attempted version.

The extraperitoneal operation was thought to nullify all these rules against the classical section but after a trial of a few years one or two clinics admit that infection is as common post operative and its results not ideal. Scheyer reports that out of forty-nine cases at the Breslau clinic six showed bladder injuries, one of these resulting in a persistent fistula. Loenne calls attention to frequency of infection after the extraperitoneal operation.

More recently other methods of preventing peritoneal infection by uniting parietal and visceral layers of peritoneum as proposed by Hirst, the cervical low operation by De Lee and by operating with low flap splitting according to the Kroenig method modified by Beck who reported for a collected series of cases a very low mortality (3.6% of 107 cases), considering the very bad risks encountered, by this method many of these children were undoubtedly saved where perhaps other operators would have done a craniotomy or section followed by hysterectomy. My real reason for presenting this quite commonplace paper has been, I will confess, to stimulate discussion on this point, *viz:* what shall we do with the frankly infected case and with the one of suspected contamination, or rather how far can we go wisely in choosing for Cesarean section these cases of potential infection.

A test of labor without vaginal invasion even after ruptured membranes is comparatively safe. Twenty-seven of these cases had a test of labor. Cases which have had several examinations made per vaginam if done carefully, can, I believe, be operated, provided the low operation is done. Now, what of the case known to have been in unclean hands or the case in which pelvic delivery has been attempted? Personally I believe at the present time I will still adhere to the old

rule and consider abdominal delivery contraindicated unless the indication is absolute and then I think hysterectomy should follow the section.

If a sufficient number of cases can be reported of frank infection, operated by the low technique, such as that done by Beck or Hirst or De Lee, showing a mortality no higher than Dr. Beck's series then I think it will be safe to formulate our indications along different grounds and include as operable without hysterectomy the class of case we see so often sent into the hospital potentially infected, this means not only the preservation of the life of the baby but also that of the mother leaving her intact for future child-bearing. *Factors to be taken into consideration in choosing for or against Cesarean section.*

For the borderline cases I am not fearful of a test of labor properly conducted, it is undoubtedly true that the mortality and morbidity are lower in cases operated before the onset of labor or at its beginning, but I do not believe that a few hours of hard pains with the progress of labor carefully observed by abdominal and rectal palpation, *only*, militates much against a smooth convalescence, by the use of the test of labor we will find that many cases chosen as probable candidates for section will progress to a point where spontaneous delivery will follow or a safe median forceps delivery can be made. Were rectal examinations a routine more cases would reach us as suitable risks for operating.

The Previous History of the Patient.—If she has been through one or more difficult labors terminated by a disastrous pelvic delivery resulting either in the death of her baby or its cerebral injury with a possibility of paralysis or idiocy or if she has been left more or less of a nervous wreck or with a repaired deep laceration, it is obvious, I think, that the argument is very strong toward Cesarean section unless it can be demonstrated that the cause of the dystocia was peculiar to the first pregnancy, such as malpresentation or poor judgment or technique in operating. The history of a previous delivery is not conclusive either way, the first child may have been overlarge or the slightly unfavorable or conversely the patient with a slightly contracted pelvis may have delivered herself spontaneously of a small child and have sufficient disproportion from a large baby at a subsequent labor to demand Cesarean section.

The Age of the Patient.—This was discussed above in speaking of elderly primiparæ, but granted *other reasons for considering Cesarean section* it is not fair to take the same chance on pelvic delivery at thirty-five or forty as on the woman in the early twenties and for the same reason I think we are more justified in the borderline case in deciding against Cesarean with the young healthy primipara.

Then there is the patient who has been sterile for a number of years and either, without treat-

ment or as a result of it, becomes pregnant, she goes through her pregnancy in happiest expectations, at the time of her delivery something happens which makes it necessary to choose between several methods of delivery; if we can choose abdominal delivery without adding materially to the risk for the mother after this has been explained to some member of the family we should, I think, do so.

I do not like the idea of "securing consent to operate" as applied to these borderline cases, Cesarean section has become very popular, often without a true appreciation by the laity of its gravity so it seems that it is better to explain the situation fully, the risk involved for the two lives in the competing methods of delivery and allow the husband or even the patient herself to make the choice, rather than to stress the comparative safety of Cesarean section.

The indications and contraindications for an operation are obviously dependent to a large measure upon its prognosis, and the broadening of the indications for abdominal hysterectomy is due to its lowered mortality made possible by an improved technique, that this mortality is still considerable no one denies. The question of greatest interest in this whole subject to-day is, will the later methods of operating justify the inclusion of those cases as operable that have been handled and were considered previously as infected? Several series so far reported of the forms of operating with an attempt to peritonealize the wound the mortality has been surprisingly low, whether the uterine scar is less liable to rupture in a subsequent pregnancy than after the classical operation can not be answered convincingly from the few cases observed.

Are too many Cesareans done to-day? One has only to be fairly familiar with current medical literature to find case reports of operations done on trivial pretexts, to say nothing of many probable operations unreported. Newell thinks it is the most abused obstetrical operation.

Schumann of Philadelphia, in the preface to a paper on indications for this operation, says: "The indications for the employment of this very radical method of terminating labor, have become so broad and in certain hands are being so loosely applied to the individual case, that a critique of the indications and limitations of the procedure would seem to be in order."

The well deserved place that Cesarean section holds to-day is due first to improvement in technique, both aseptic and mechanical and also in no small measure to conservatism in the selection of cases suitable for its performance. The danger to-day is that because of the ease of operation for Cesarean section, and the fact that it is over popularized, we may lose sight of the value of good obstetric pelvic surgery and become specialists on Cesarean section.

INDICATIONS FOR CESAREAN SECTION

Justo-Minor Pelvis	17
Flat Pelvis	20
Flat Pelvis and Contraction Ring.....	1
Outlet Contraction	2
Outlet Contraction and Flat Pelvis.....	2
False Promintory	1
Chondro-Dystrophy	2
Obliquely Contracted Pelvis with Ankylosis of the Hip	1
Disproportion after Test of Labor in Elderly Primiparæ	2
Placenta Prævia	3
Abruptio Placentæ	3
Tuberculosis (Pulmonary) and Toxemia of Pregnancy	1
Eclampsia	1
Anterior Suspension of the Uterus and Contraction Ring	1
Stenosis of the Cervix after Amputation.....	1
Fœtal Asphyxia	1
Total No. of Patients Operated.....	55
Total No. Operated Twice (by author)....	5

46 had 1 section
 7 " 2 "
 1 " 3 "
 1 " 5 "
 27 were in labor.

TABLE I

Number of public ward cases operated.....	24
Number of private cases operated.....	36
Of these, there were seen in consultation.....	8
6 had had a long test of labor.	
1 was an elective for eclampsia.	
1 was an elective for tuberculosis and toxemia.	
The remaining 28 were from a total of 900 of the author's own practice, classified as follows:	
15 had a test of labor.	
13 were elective, of these:	
1 was for placenta prævia centralis.	
1 was for ruptured uterus.	
1 was for funnel pelvis in an elderly primipara.	
10 were for flat pelvis.	
Primiparæ	3
Previous section	2
Lost one child in previous difficult delivery	4
Lost two children in difficult deliveries	1

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BAGS VERSUS EXPECTANCY IN DRY LABOR.*

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TO intelligently discuss the treatment of dry labor, it is necessary to divest ourselves of prejudice and attempt to correctly evaluate the significance of this complication. A deep, perhaps well-founded, dislike of this condition exists among both the laity and the general profession. The following indictments I have culled from standard textbooks:

Jewett says: "If by mischance early rupture of the membranes occurs and the waters are drained away, such labors are proverbially liable to be of long duration and prejudicial to mother and child."

Cragin says: "Sometimes rupture of the membrane occurs several days, or even weeks, before the onset of labor, but as a rule labor begins within twenty-four hours." Several cases have come under my observation in which, after the escape of liquor amnii, the long pressure upon the child and the entrance of air to the amniotic sac has apparently caused the death of the child and infection of the mother. It is my custom to start the induction of labor in a patient whose pains do not begin in twenty-four hours after the rupture of the membrane."

De Lee states: "When the bag of water ruptures before labor, especially in primipara, these are called dry labors and are usually long, tedious, and painful. Operative interference is often necessary in dry labors."

Wright states that: "The so-called dry labor is in a large proportion of cases a protracted labor, nearly always accompanied by serious symptoms, and frequently followed by disastrous results. Dangers to the mother are: exhaustion from long continued pain, with tetanic contraction of the uterus, rupture of the uterus, laceration of the cervix, vagina, pelvic floor, and perineum; various forms of fistulæ; post-partum hemorrhage, pulmonary thrombosis, septicemia. The dangers to the child are chiefly asphyxiation and meningeal hemorrhage."

Peterson: "Dry labor is attended with a notable increase in the maternal and fetal hazard."

Edgar, in his textbook on obstetrics, says that: "early rupture of the membranes is of frequent occurrence, but the condition is not invariably dystocic, because the amniotic fluid does not necessarily all escape. When it is completely evacuated, the dystocic condition known as dry labor develops. The loss of the water wedge before the completion of dilatation brings the head of the fetus in direct contact with the cervix. This tends to induce a tetanoid action of the uterus and works injury to the cervix. The lat-

ter becomes greatly elongated and its anterior lip often edematous. Laceration is very common. Compression of the fetal head causes a tendency to asphyxia and intracranial hemorrhage. The tetanoid action of the uterus, combined with the edematous cervix, retards the first stage of labor and exhausts the mother. Premature rupture is greatly dreaded in anomalous presentations and contracted pelves, conditions under which it is especially prone to occur. In such cases it contributes a further element of dystocia."

Williams, in his textbooks, states concerning dry labor: "This accident occurs occasionally in primipara and not infrequently in multiparous women before the onset of uterine contractions and gives rise to what is designated as dry labor, which is usually unduly prolonged and very painful. The delay is due in great part to the absence of the hydrostatic action of the bag of waters, in consequence of which the changes in the cervix must be brought about almost entirely by the presenting part, . . . a dilating wedge of imperfect shape and consistency. This complication is usually not so serious in multiparous as in primiparous women, since in the former labor, as a rule, sets in within a short time of the discharge of the liquor amnii. Occasionally, however, days and, in rare instances, even weeks may elapse before it occurs. . . . The premature opening of the amnion greatly increases the danger of intrapartum infection."

Hirst: "If the membranes are too thin, they may rupture prematurely and this gives rise to what is called a dry labor, in which the birth canal must be dilated by the hard, unyielding presenting part instead of the bag of waters. Such labors are longer and more painful than the average, and there is greater likelihood in them of lacerations of the cervix and a more frequent demand for . . . forceps."

Summarized, the consequences of dry labor are considered to be, to the mother: a liability to protracted and more painful labor, with tetanoid, ineffective pains, and probable infection, with possible laceration of cervix, exhaustion, rupture of the uterus, vagina, pelvic floor or perineum, fistulæ, postpartum hemorrhage, or even pulmonary thrombosis. To these may be added the more frequent need for operative delivery. As to the child, there is the increased likelihood of asphyxia, intracranial hemorrhage or death from pressure on cord or cerebrum.

The question thus not infrequently arises as to the duty to the patient with membranes ruptured, not in labor, or to the patient with membranes ruptured and in labor, when progress is slow and the cervix incompletely dilated. Does the drained uterus add material risk to the child? Can the danger from cord or body pressure be lessened by active interference? What is the increased liability to uterine infection from ac-

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cess of air to the drained uterus? From the lengthened labor? Does interference such as the use of the bag or bougie improve the results? To what extent is operative termination of these labors necessary?

To the writer it has seemed that the intensive study of cases of dry labor might be of value in furnishing a definite answer to some of these questions. For this analysis, a carefully kept record of a series of two thousand cases delivered at the Woman's Hospital was used. From these were selected all cases in which the membranes had ruptured twelve hours before delivery and in which the child had an intra-uterine development of more than six and a half months. As it is recognized that certain women whose labors start with ruptured membranes, with a dilated and dilatable cervix, have an expeditious labor, such cases were ignored.

From the two thousand histories there were collected two hundred and seventy cases of prematurely ruptured membranes in women with viable infants, in which the rupture occurred at least twelve hours before delivery. This gives an incidence of clinically significant dry labor cases of 13.5 percent. The proportion of primigravida was somewhat more than that of multiparavida. This is in marked contrast to the general hospital ratio of five primiparæ to four multiparæ, showing a somewhat greater tendency to dry labor in primiparæ. It is possible that these figures indicate merely a greater probability of protracted labor in primiparæ when premature rupture occurs.

The most constant factor in the causation of dry labor seemed to be deformities of the pelvis, of which there were 7+ percent of the whole. It is believed that a more careful study of the cases would have demonstrated a still larger proportion of pelvic abnormalities, as 39 percent of the multiparæ gave a history of previous complicated labors. Four had had previous stillbirths. It seemed impossible to get any definite data as to the thinness of membranes or as to any pre-existing endometrial abnormality. Three of the cases were partial placenta previas, which might account for an irregularity in the tensile strength of the membranes.

Premature labors were 10 percent of the whole, but as two-thirds of these were preceded by the ruptures, we cannot concede prematurity as frequently an essential cause for ruptured membranes. A maladjustment of fetal parts, such as breech or transverse, was found in 4 percent of the cases. Twins occurred three times, which is about the normal incidence. Twice the membranes were ruptured by the introduction of bags, and once they were ruptured as a therapeutic measure in accidental hemorrhage.

As a possible condition favoring early rupture, it would seem that an unusual rigidity of the cervix, which is sometimes found in dry labor, might

be the cause instead of the result of the accident. This tendency might also apply to a cervix cicatrized from previous injury or operation. A cervix that dilates prematurely, without labor, undoubtedly predisposes to premature rupture. But in the absence of other causes of dystocia, labor in these cases should progress with celerity.

Our first study was of the relation of time of rupture to onset of labor. We found that approximately two-thirds of the cases (59 percent) ruptured before labor; one-third (28 percent) ruptured after the commencement of labor; and one-sixth (14 percent) were reported to have rupture occurring with onset of pains. This gives us a ratio of 4:2:1.

In the first classification there were found twenty-five cases where rupture had occurred from thirty to one hundred and twenty hours before labor pains. The average length of labor in these cases was computed and found to be ten and a half hours. One-half were under eight hours. The length of time that the uterus remained drained did not particularly affect the duration of labor.

For purposes of comparison the average morbidity and fetal mortality of this class of cases is compared with other classifications:

	Morbidity %	Fetal Mortality %
All hospital cases	17.5	5.5
All cases of dry labor (270).....	26.0	8.4
Cases with rupture 30+ hours before pains (25)	20.0	8.0
Cases with rupture 30+ hours before delivery (47)	19.0	8.5
Cases with 30+ hours' labor (53).....	34.0	15.0
Cases with labor under 10 hours (27)...	27.0	5.0

In this connection, the report of a private case is of interest. Mrs. H. E., thirty-nine years old. Previous labors, three: First, 14 years ago, high forceps; second and third, low forceps, each followed by postpartum hemorrhage. Date of expected labor, November 23, 1915. On November 26 the membranes ruptured. For four days there were no pains. Had the patient consented to hospital care, I should, as was my custom at that time, have inserted a cervical bag. Under the circumstances, we simply delayed interferences. November 30, four days later, pains commenced. Labor was normal up to the perineal stage, when forceps were used for inertia. Total labor, thirteen hours. The child was in good condition, weighing about nine pounds. The mother's recovery was without fever or other complications.

The second class of cases, *i.e.*, those that ruptured after the onset of labor, showed thirteen cases of labor protracted to thirty hours or more, furnishing 23 percent of morbidity and 15 percent of fetal mortality.

Those cases rupturing with onset of pains gave 11 percent of morbidity and no fetal mortality.

These figures bring us to the inevitable conclusion that the length of time that the uterus is drained is a negligible factor in the causation of morbidity or mortality; but that the length of labor is an important reason for both complications.

Vaginal examinations, while offering a risk in all cases of labor, might be considered a greater menace in cases with ruptured membranes. All cases recording more than three vaginal examinations were studied—twenty-nine in all. The figures showed the startling morbidity of 52 percent. The cases with no recorded vaginal examinations gave a morbidity of less than 25 percent.

It is fair to state that in our morbidity figures all cases having a rise of temperature were included except those obviously explained by some cause other than pelvic. Thus every case of so-called "reactionary temperature" with a rise to 100.4 F. is listed. Evidently the cases not examined were uncomplicated and less protracted.

Further statistics showed that nearly one-third of the dry labors required operation at birth, for the following indications: deformed pelvis, inertia, persistent occiput posterior, large child, rigid cervix, tonic uterus.

The maternal morbidity was 28 percent, with fetal mortality of 11 percent, each two percent higher than the average of the whole series.

In breech labors, the morbidity was 46 percent, fetal mortality 24 percent.

Lengthened dry labor in breech cases is therefore much more serious than in vertex cases, and the proportion of breech cases in dry labor is more than twice the normal incident period.

The Cæsarian sections, 8 in number, gave high morbidity but no maternal deaths, and but one fetal death in a case of ruptured uterus. The inference drawn may be that the drained uterus, even if existing for many hours, does not furnish serious contraindications for the Cæsarian operation, especially if examinations have been aseptic and other operative interference not attempted.

The morbidity of the series was 26 percent, which may be compared with the general hospital morbidity of 17.5 percent. The causes seem to be prolonged labor, ruptured membranes for a considerable time before entering the hospital, postpartum hemorrhage, or cases of frequent vaginal examinations.

The total mortality of the infants was 8.4 percent, which may be compared with the general hospital mortality of 5.5 percent. There were 11 still births and 12 deaths, the causes being forceps, prolonged labor, 8 premature labors, and 3 congenital abnormalities.

In the summary of these statistics, we should note: that the deductions are necessarily confused by the fact that many of the cases had other

reasons for prolonged labor, fever, and infant mortality, than ruptured membranes. In other words, that obstetrical complications seemed to be a cause for dry labor, nearly as frequently as dry labor for complications.

It would seem established, however, by these figures that the length of time during which the membranes are ruptured before labor is not an important factor either in prolonging labor or in producing morbidity or fetal mortality. Protracted duration of pains in dry labor, on the other hand, greatly increased the morbidity and trebled the fetal mortality. The morbidity risk increased consistently in proportion to the number of vaginal examinations. There can be no doubt that every vaginal examination in a patient with ruptured membrane is a dangerous procedure. The rectal touch should be employed as much as possible.

Dry labor requires operative termination in one-third of the births.

The risks of breech labor are much greater if membranes are ruptured early.

The Cæsarian operation in the series gave very good results, despite the grave prognosis given to abdominal hysterotomy in dry labor.

Finally, we may sum up the condition of dry labor as increasing puerperal morbidity 8.5 percent, and fetal mortality 3 percent, the dangerous elements being prolonged labor, intra-uterine contamination (usually from vaginal examination) and the operative terminations.

To the hydrostatic bag, one instinctively turns as the way out in the presence of difficult dry labor. For its use is the urge of the desirability of starting up pains; secondly, the need of some substitute for the bag of waters; thirdly, the expediting of labor already in progress.

The value of the bag in labor is well established. I venture to say that there are few who would care to practice obstetrics without it. However, methods or fashions of treatment change with experience. Some at first regarded as of wide application in time show clearly certain disadvantages which tend to limit their scope. Of late years it has seemed to be that the induction of labor has appealed less often and that I have markedly limited its application. To verify this, I made a study of my private case records. For purposes of comparison my first 500 cases, dating from the beginning of private practice in the fall of 1902, were contrasted with a later series of 500, ending to date. To my surprise, I found that the first series showed 85 inductions by bag, 1 by bougie; while in the last series there were 25.

To answer the question which arose as to whether this change had affected statistics, a review of the first 500 cases demonstrated a still birth mortality of 6.8 percent, while the next 500 cases gave a still birth mortality of 1.8 percent, a difference of 5 percent.

To be sure, the early cases included a large percentage of consultations, many of them in tenement houses; while the present clientele is a much more stable one. Evidently, however, the figures have not been unfavorably affected by a diminished use of the bag.

Why has this conservatism in the induction of labor developed?

The answer is clearly given when we study the sequelæ of bag cases. In this series of 110 cases, there were 22 high forceps; 24 median forceps; 6 low forceps; and 6 versions. In 10 cases a primary trachelorrhaphy had to be done; 5 cases demanded tamponade of the uterus for hemorrhage post partum; there were 9 still births and 9 fetal deaths. Three of the inductions were failures. In another case, the cervix had to be incised in order to complete delivery. The bag converted one vertex case into a breech. Labor was prolonged beyond 20 hours in 26 cases. The maternal morbidity of the cases I am unable to present, but it must have been above normal.

Here then, is the indictment against the unnecessary use of bags. It is an operation which demands the most careful aseptic precautions, since it introduces into the uterus for a longer or shorter period a foreign body which may later have to be replaced by another and larger body, and perhaps again by yet another. There is no definite rule in regard to the uterine response to the stimulus, which may be much delayed or transitory in its effect. I have more than once seen a cervix dilated to four fingers, closed down to one finger in a few hours after the bag expulsion. In one case the patient was having regular uterine contractions stimulated by pituitrin.

The labor that is induced is apt to be of a poor type, as shown by the large number of protracted ones. The final dilatation is often incomplete, without the proper thinning of the lower segment. The evidence of the frequent serious operative deliveries clearly shows this.

Granting, then, the possible dangers of the use of the bag, it is important to have clearly in our minds the justifiable conditions for its use and the assurance that the need outweighs the disadvantages.

Ruptured membranes without uterine pains has supplied a seductive lure for the employment of bags. My early cases showed their use seven times—in my last series, four times. I suspect that my next series will show very few if any dry labors induced.

The operative treatment of dry labor, in our hospital series, aside from the termination of the cases, consisted in the use of the Voorhees' bag for induction of labor or as a substitute for the bag of waters in expediting dilatation. The bags were used in 25 cases. In 11, the chief purpose was to induce labor. Four special indications for induction were, eclampsia, toxic albuminuria, accidental hemorrhage, and placenta

previa. In 14 cases, dilatation was desired in cases already in labor. Two of these had partial placenta previa.

In all bag cases, the morbidity was 32 percent, fetal mortality, 20 percent.

Cases with dry labor, the only indication: morbidity, 26 percent; fetal mortality, 21 percent.

Contrast with all dry labors: morbidity, 26 percent; fetal mortality, 8.5 percent.

Insofar as the figures from so few cases can be used as an index, the employment of bags did not reduce the maternal morbidity and appeared unfavorable to the safety of the fetus.

Of the 5 children lost, 3 were deaths (one premature) and two were still births, both premature. One prolapse of the cord occurred as a complication of the use of the bag, but did not result in the loss of the fetus.

The termination of these bag labors resulted in 11, or 44 percent of operative deliveries, as follows: Forceps, 1 high, 4 medium, 5 low, and one Cæsarian, with hysterectomy for fibroid uterus.

The operative termination of all dry labors, was 28 percent not including breech deliveries.

The recorded average labor, after the induction by bags, was 13¾ hours, with a percentage of operative labors of 54.5.

We may summarize our conclusions as follows: Our statistics have shown that in dry labor the use of the dilating bag, even when employed to induce labor, did not reduce morbidity and seemed unfavorable to the fetus. With an operative termination of 44 percent of such induced labors, and an average labor of over 12 hours, the question arises whether induction of labor in a drained uterus is justifiable.

In cases with ruptured membranes, not in labor, it would seem that expectancy is the safer course. This rule of conduct should be qualified by insistence on the avoidance of vaginal contamination by coitus, tub baths, douches, or examination. Such cases should be under supervision in the hospital if possible. The patient, if under control, can then be trusted to wait until the onset of spontaneous labor. It is believed that such a labor will be of a more normal type, and that the death of the child in utero from pressure before labor is extremely improbable.

It goes without saying that if the conditions indicate a Cæsarian section, there is no argument for waiting for the onset of pain.

If the patient be in active dry labor, the value of expectancy is not always as clear. My deductions would be that in certain few cases where irregular action of the uterus with very slow dilatation exists, the bag might expedite delivery. Especially, as we recall that puerperal morbidity and fetal mortality are in relation to the length of labor. It is well, however, in these cases, to be sure that there is not some other complication

which may compel resort to the Cæsarian operation.

Inasmuch as the infant in breech labors seems to tolerate dry labor poorly, the occasional resort to the bag may here serve a useful purpose.

Finally, dry labor should be so guided that, if protracted, the mother's strength be mercifully conserved, by the use of morphine and nitrous oxide gas, by the employment of cervical incisions or manual stretching for incomplete terminal dilatations, and by such assistance in the second stage as may be clearly indicated.

SUPERSTITIONS IN OBSTETRICS.*

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SEX is a fundamental instinct of the human race. Pregnancy, childbirth and the puerperium wear thin the veneer of civilization. The remarkable processes, dangers and results of these periods of woman's life must have been a profound mystery and a source of perpetual wonder to the untutored mind of savage man, as it is to our own to-day. Theories, explanations and beliefs were inevitable. In addition, the care of women in pregnancy and childbirth has always been for the most part in the hands of other women, as a sex conservative and tenacious of belief, clinging to form and tradition, and as midwives generally untrained, ignorant and superstitious. It is therefore not surprising that in the practice of obstetrics one hears, if one but ask and listen, so many echoes of the race's dim and pagan past, down the long road of woman's memory.

The present study is not an attempt to collect a large number of obstetric superstitions, nor an effort to explain or classify even all those mentioned. The examples quoted have been gathered during the past five years in an average industrial American city. In them the ignorant and foreign born have no monopoly. The origin of some is complex, even utterly obscure. Many illustrate the tenacious grip of the strange and the bizarre. The great majority clearly demonstrate that man's modes of thought and his primitive beliefs survive religions and civilizations. The vast mass of womankind to-day, though more or less clearly realizing that these tales and practices of her savage ancestors are neither civilized nor Christian, nevertheless, half ashamed and half defiant, fears and believes them in the depths of her woman's soul.

The two great sources of obstetric superstitions are ancient magic and primitive ideas about women. Ancient magic was based on a mistaken conception of the association of ideas. It reasoned (1) that like produces like, that things that

resemble each other are the same; this is imitative magic: (2) that things can retain and transmit properties of other things with which they have once been in contact or a part, and can act on each other at a distance; this is a contagious magic. Both have a positive and a negative aspect. By precepts, charms and sorcery a desired result could be produced; by prohibitions and taboos an undesirable result could be avoided. Frazer, in the "Golden Bough," shows how worldwide, deep and unchanging has been and is this mode of thought. Force was all pervading. Good and evil were treated as material things, little differentiated. Magic, primarily, had nothing to do with spirits, though later inextricably involved. It probably antedated religion, which it has fought, permeated and become subject to. Many magic practices survive in ritual and rite. The ancient struggle for souls between the forces of good and evil relives in the baptism of the newborn. The water, so applied as to run off some portion of the infant's body, carries with it the uncleanness of original sin, as though it were a material thing. It is a sacred symbol, but nevertheless, a conception of ancient magic.

To ancient man woman was a strange and mystic being. She differed from the dominant male in many ways, notably in her sexual physiology. She discharged blood from her body, gave birth to babies and produced milk. All this was mysterious and incomprehensible, therefore dangerous and to be feared. Primitive woman was subject to many taboos, especially at her times of special function, when she was believed to be particularly subject to outside forces of good and evil, chiefly the latter against which the restrictions were defensive. Her discharge of blood represented accumulated uncleanness, which idea is in our theory that menstruation prepares the uterus for pregnancy. Menstrual blood was both polluted and polluting, and the fear of its deleterious effects has been and is still worldwide. It is still believed that a menstruating woman can spoil dairy products and cause flowers to fade. It was not so long ago that a nurse was barred from the operating room during her periods. Many of us dislike to operate on a menstruating woman, though the procedure be not gynecological. Primitive woman was also isolated and secluded after childbirth because she was unclean, therefore a danger to others, and also because she herself was in danger at that time. To-day the drawn curtains, the darkened room and the banishment of visitors, particularly children, is but the survival of that taboo. The harmful effect of light on the baby's eyes and the excitement as causing nervousness and fever are surely later ideas. Before she could mingle again in society this contagion of uncleanness must by one of many methods be removed. From this pagan thought arose the practice of the churching of women, now somewhat fallen into disuse.

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The restrictions laid on the pregnant woman, during the most momentous period of her life, are almost unlimited in number, in the last analysis mainly defensive in character, protective to the mother and her conception. Weighing the mother will make the baby daring. Bathing will cause the child to die of drowning. Eating too many apples causes kidney trouble. Too much meat toughens the cord and makes the child's bones harder. Coitus during pregnancy will make a blind, sick or dead child—recalling the old idea of the inherent danger of sexual intercourse. The admonition not to attend a christening is a very complicated taboo. The chief evils to be prevented are (1) accidents of labor, particularly the cord around the neck and adherent placenta; (2) injuries to the unborn child resulting in abortion or deformity. The occurrence of the cord around the neck, popularly considered to be of grave moment, is favored by the mother putting her arms above the head or by reaching up, thereby making the cord longer; by walking under anything, usually a clothesline; by hanging anything around the neck, like a sewing thread or a string of beads. Lack of exercise, lying long in one position, fastening anything sharp to the dress, or the sewing of anything on the person will cause adherent placenta. These two groups of superstitions are taboos of almost pure imitative magic.

It is true that a severe physical or psychic shock can cause abortion. Sexual immorality during pregnancy is put into this class. Many pregnant women refuse to take any drug whatsoever, fearing miscarriage. Dental work during pregnancy is widely taboo, as causing abortion, harelip, or maldevelopment of the child's teeth. It is even claimed to be illegal.

The whole subject of fetal malformations is adequately and interestingly discussed by Ballantyne in his "Antenatal Pathology." The ancient explanations of their cause have practically disappeared save the one of mental origin. There is probably no more common obstetric superstition today than that the fetus can be "marked," in mind or body, for good or (usually) evil, by a mental impression of the mother at the moment of conception or during pregnancy. This idea, worldwide among all peoples of all times, has gathered about it a considerable literature, has been the theme of many books and is held by intelligent laity and even some physicians. The cases of "markings" reported and seriously believed in are multitudinous. We can only touch briefly on the subject.

It is held that the "mark" is caused by a thought or emotion of the mother, either originating in her own mind or produced by a physical impression received through the senses. Voluntary mental concentration or allowing the mind to dwell on some object or subject may give the child a physical mark, or direct its later mental

activities along the same line. Unsatisfied longings, usually for foods, may "mark" the baby with an imprint of the thing longed for, or convey to it either the same longing (so that it will cry till satisfied) or an idiosyncrasy against the food in question. Cf. the practice of giving the baby a bit of the food that eaten by the nursing mother disagrees with the baby through the milk.

The "marks" by physical impressions are caused by seeing or by being touched by unusual or disagreeable inanimate or animate things, especially the latter. These physical experiences are usually sudden, violent or fright producing. The sight of injured, crippled, deformed or peculiarly acting animals or men is particularly dangerous. The sight or touch of anything dead carries with it also the ancient contagion of death. Color and, to a less degree form, play important roles. Cf. nevi or birthmarks from fire, iodine, lightning and blood (magically very potent), and pigmented moles from berries, leaves and mice. The location of the "mark" on the baby usually corresponds either with the location of the mark on the object seen, or with the spot of the mother's body to which the object was applied or touched by her in her fright. To prevent "marking" the mother should avoid any possible exciting cause, particularly any expression of sympathy or interest, and avoid touching herself when frightened. To recall the fact that she is pregnant seems to act as a powerful protective charm.

There seems to be two basic elements in this complex superstition—magic and the scapegoat. Magically, as we have seen, things can act on each other at a distance and produce results like unto themselves. The woman and her conception were considered to be extremely susceptible to evil influences, and the relation between the two was thought to be very close. We know that the fetus is only a parasite, having no direct blood or nerve connection with its host. It has been aptly asked how can images of things be transmitted by a column of liquid in a tube. We also know that development is so rapid that gross malformations are precluded after about the 10th week of pregnancy. It is interesting to note that it is sometimes claimed that the baby cannot be "marked" after life is felt. The other element in the superstition is the ancient idea of the scapegoat to which may be shifted blame and responsibility. Thus fetal deformities were explained and excused. None deny that prenatal influences are important and far-reaching, but they are chemical and subtle. It seems scarcely necessary to defend the statement that "marking" by a mother of her unborn child in the ordinary sense is an impossibility, and that the whole idea is a fabric of superstition.

The application of oil to the abdomen during pregnancy is widely practiced, for it is claimed to strengthen the muscles and make an easier labor. Oils for this purpose are advertised to-day. It

is probably ancient magic—as the abdomen is made slippery so will be the birth canal at labor. It may also be associated with the idea of correcting malpositions by external manipulations. Ignorant midwives often advise pregnancy to cure retroversion, and claim to be able to diagnose pregnancy by looking into the eye—the latter a very ancient belief. Many of the signs used to diagnose sex before birth were in use centuries ago in many lands. It will be a boy if more pain is felt on the right side (in ancient thought the more important sex came from the right ovary or testis, the right being the stronger, holier and luckier side); if it is carried far forward; if life is felt early and if the child is lively (ancient idea that males developed faster); if the mother has a bad color; if she has much heartburn—also a strong, hairy child, if she goes over term. The converse means a girl, though there is no general agreement and even much confusion and contradiction.

There are few survivals of the former belief in a close relationship between the father and his unborn child. He occasionally suffers with nausea and vomiting, and second to the mother is most apt to “mark” the child by untoward acts. True labor is supposed to start exactly two weeks after the false or “wild” pains, and its onset is influenced or precipitated by changes of the moon. The young woman who returns to her maternal home at the approach of labor simply follows an ancient and widespread custom of womankind.

The ancient lightening of labor by supernatural or other aid has few survivals. The husband's presence is sometimes considered helpful. The French midwife is still sage femme, or woman magician. The Mother of Heaven is often supplicated. The warning not to cry out with the pains probably rests on the idea that cries at such times attract the unwelcome attentions of evil spirits. Old women sometimes object to any knots in the woman's garments or to the braiding of her hair, for the imitative magic of anything tight, knotted or closed hinders the opening of the cervix and birth canal. Likewise crossed legs in the labor room are generally taboo. Our pagan forebears believed it possible to coax the baby from its mother's womb. The writer has seen a foreign workman place a cracker soaked in some liquid on the bed between his wife's thighs in a difficult labor. A fellow physician, once condoling the writer on the loss of time at a long labor, jokingly remarked that he had not used the right “bait.” One finds an occasional trace of the idea that the child, by pushing with its legs, helps in its own expulsion. The domineering, even vengeful, attitude of the women, even the maids, at a confinement toward the men recalls the old solidarity of the sexes, to which the midwife partly owes her origin and persistence. The lying-in room is commonly kept unsufferably hot.

The building of a fire was a very ancient method to ward off evil spirits. The modern celebration of the end of labor is mental rather than material.

Traces of two ancient and curious ideas about the human uterus persist. The uterus was a wandering animal, desirous of pregnancy, that could migrate to various parts of the woman's body causing distress and illness. The very ignorant even to-day frequently ascribe vague abdominal pains to this cause. Our “globus hystericus” locates it in the throat. It was also a devouring animal, apt to suck back into itself the newborn and the afterbirth. Occasionally still an old lady will hang on to the cord after the child's birth or place it between the mother's toes, so that “the afterbirth won't go back in her, get around her heart and kill her.” However, this may be a survival of the belief that the products of conception, loath to leave the uterus, may creep back unless prevented.

The belief that a seven months' child is more apt to live than one born at eight months is a curiously persistent survival. Two very ancient beliefs are its plausible source. At the seventh month the child turned over, ready to be born—even struggled to do so; at the end of the eighth month it was not ready but even exhausted by its previous struggles. Also kindly Venus ruled the seventh month of intrauterine life, while Saturn's baneful influences dominated the eighth. Through all runs the magic thread of the uneven number seven.

The expulsion of the afterbirth is aided by sneezing, or by blowing salt through the hands or into a bottle. Not so physiological though magically correct is the wearing of the husband's hat for the purpose—for any part of a person's dress contains properties of the owner and the strength of the male sex may thus be impressed into service. The number of varices, or so-called “knots,” in the cord of the first baby foretells how many other children the woman is to have. A child born with a caul, or the possessor of a piece thereof, especially if obtained by theft (which procedure in no way seems to prejudice the original owner) will be lucky, gifted with second sight and will not die of drowning, the last idea probably from the observation that the child survived though born with its face surrounded by fluid. The caul of a seventh son of a seventh son is of course exceptionally valuable.

In ancient belief the placenta was the child's twin, or contained part of its external soul. Its disposal was therefore magically important. Strangling by the afterbirth is an occasional explanation of a still birth. It is sometimes not buried for three days, as usual for the dead. It should be buried fetal surface upward with the cord coiled inside the membranes to prevent the child vomiting. It must be buried deep, or the place covered with stones, lest dogs dig it up and eat it, thus injuring the child or drying up the

mother's milk. It must not be buried directly in a beaten path, lest a menstruating woman contaminate the spot and make the child sick. The use of placental soup to lessen afterpains and increase the secretion of milk is recognized by the recently proposed use of placental extract for the latter purpose.

The existing superstitious practices of the puerperium deal with the prevention of fever, the production of milk and the care of the breasts, and recall the ancient fear of the lochia and the surrounding forces of evil. The recently delivered woman should be kept warm and in no manner come into contact with anything cold. She should be kept awake; she should lie in one fixed position; her bedding and clothing should not be changed; she should not be bathed; her hair should not be combed—all for a varying number of hours or days postpartum. The mystic numbers 3, 7, 9, and 40 are much in evidence. Cf. also 7x40 days as the duration of pregnancy. On the ninth day "everything goes back with a click." If her hair is dressed the combings must be carefully disposed of, preferably by burning, never being allowed to drop on the floor for some one might cast their shadow on them or get possession of them in some other way. Hair and nails, removed from our bodies, are in the magic sense still part of us, containing portions of our souls. Their disposal is therefore important for possession by an enemy exposes their former owner to the operations of evil magic. Food taboos postpartum are numerous, though generally vague and foolish restrictions to prevent fever, improve the flow of milk or prevent harmful effects through the milk on the nursing child. Cold foods and drinks are tabooed by imitative magic. By the same reasoning milk is highly regarded as a galactagogue. The so-called "acid" foods are considered harmful through some action on the milk. There is a general unwillingness to nurse another's child, or to mix two milks. The methods used to dry up the milk are legion. A comb, stroked downward over the breasts, prevents "caking" by "keeping the muscles straight." Sometimes its mere presence suffices. It was an ancient conception that the sweetest part of the blood, namely the milk, flowed to the uterus to nourish the child during pregnancy, and postpartum to the breasts for the same purpose. If fever supervened it might be diverted to other parts of the body. This idea of milk metastases is preserved in the term "milk leg" which is still believed to be so caused. The former theories of lochial anomalies have been abandoned. Some Syrians admit no unmarried visitors for seven days, but a soiled diaper and the cord stump placed over the door of the lying-in room prevent such persons harming the child. The seclusion and purification of women after childbirth has already been mentioned.

We dimly strive to reincarnate our ancestors when we name children after them, and have an uncanny feeling when we recognize in feature or trait of character the "spitting image" of some one long dead and gone. When a baby smiles he is dreaming of the angels. His later babblings are their speech. Twins always excite interest, and the close relationship is thought to persist between them through life. A baby born prematurely will sleep continuously till the estimated date of its birth arrives. The cause and cure of navel hernia has several superstitions. The value of a scorched cloth, especially linen, as a cord dressing is a remarkable observation antedating asepsis, but the principle involved is often ignored. The careful burning of the stump to insure good healing of the navel is pure ancient magic. A raisin, applied to the unhealed stump is also used to insure a like result. On analysis this is fair sense, for the sugar is antiseptic and the tannin astringent. A nut or a bit of wax (this takes longer) on the unhealed stump draws out the "hairs," preventing later rheumatism, and develops the chest. The dried stump with ligature, preserved as amulet, is given to the child when he goes to school at the age of seven. If he succeeds in untying the knot he will be strong and wise. Binding a baby straight will, of course, make it grow straight. There is no sound reason for laying the newborn on the right side, either to favor the closure of the foramen ovale or to prevent pressure of the heavy liver on other abdominal organs. Jaundice is treated by decoctions of various herbs, usually yellow in color. It may be prevented by the mother not turning her back on the baby, and cured by allowing it to look into the holy communion cup. Cutting an infant's finger nails either stunts its growth by making it so much shorter, or a thief by allowing his fingers to grow longer. The old fear of anything sharp, especially of iron, requires that they be bitten off. The hair should not be cut for a year, or longer if the child is weak, or until the trees are in full leaf, for in ancient thought the hair was the seat of strength, or the abode of the spirit of the head. The first haircutting often occasions tears, and a bit of this hair is to the mother a bit of her baby's soul. For sore eyes the magic fluids of mother's milk or urine may be employed. The drinking of urine by mother or child promotes its secretion. The local application of a soiled diaper cures thrush. Infantile eczema is caused by a pregnant mother or a menstruating nurse; it, as well as "scald head," should not be cured, for it is dangerous to "drive in" eczema. A child nurses the virtues and vices of its nurse, because the milk is a part of the person producing it. The presence of teeth at birth brings luck, if not divulged for seven years. If they appear before the fourth month, the mother will soon become pregnant: if first on the upper jaw, the child will die. Turn-

ing a baby end over end three times on three successive mornings will make it good-natured. Allowing it to lie too long in one position is apt to make it "liver-grown." It should be lifted or carried first up rather than down, so that by imitative magic it will rise in the world, and if in company with a book it will also be learned. Unclench the hands and rub salt in the palms for a convulsion. Vanity or death lie in a mirror during the first year of life. To measure it is to measure it for its coffin. Traces of the ancient idea that a person's name is an essential part of the personality are seen in the christening by which the little soul is fixed and removed from danger and in the institution of god-parents whose moral qualities, it is still felt, may pass to the child. At a circumcision one witnesses one of man's most ancient magic rites. Wean when the "signs" are in the knees or feet and never when the moon is high, and avoid weakmindedness. An analysis of the little nursery rhyme beginning "Monday's child is fair of face, Tuesday's child is full of grace" would be interesting.

Darker superstitions of witchcraft and the evil eye persist among the very ignorant. The breast secretion of the newborn is known as "witches' milk," for which massage is advised to break the "nipple strings." Witchcraft can make a woman bear only girls, dry up her milk and confine her to bed for years. Charms against such practices can still be bought. The idea that cats kill babies by sucking their breath probably originated in the belief that witches frequently took such form to steal children's souls. The child's clothes should not be hung out till it has been baptized. Envious, evil spirits may steal a baby's soul, substituting therefor another of less worth. Such a changeling or "devil baby" cries constantly, doesn't grow, is foolish and doesn't walk for seven years. Blasphemy, or ridicule of a holy thing or picture may be thus punished—though a comparatively late idea. These evil spirits are usually described as feminine (witches) most common in autumn, and occasionally visible. They were originally the haunting family dead, envious of the newborn soul. Marks with blessed chalk on door or window bar their entry. The sharpness of an iron knife in the cradle or the smell of a bit of garlic around the neck are defenses against them. In any event the newborn should not be left alone, which idea is suggested in the solicitous care given it, often to the neglect of the mother. If substitution has taken place putting the child into a hot oven may drive out the possession, and under no circumstances should a mother nurse a "devil baby." Baptism both prevents and cures.

The old woman, who in the same breath with which she praises a newborn baby adds a saving "God bless him," avoids by this magic formula

even the appearance of casting the evil eye, that old superstition of envy. When we boast we still knock on wood. If a woman wants a baby too much she will never live to have one. Any one, even the mother herself and even unconsciously, but especially a stranger, can "overlook" an infant, causing it to wither and die. Washing the face with holy water or making over it the sign of the cross are preventatives. Among the Slovaks when a person, especially a stranger, enters a room where there is a newborn child, he commonly spits three times and looks up. This embodies three very ancient beliefs—the protective charm of human saliva, the fear of the evil practices of strangers, and imitative magic that the baby may grow up and not die. If a baby has been "overlooked" two orthodox magic methods to rid it of the contagion are in use to-day—cleansing by some magic fluid and holding in the smoke of some magic substance. Of magic fluids the most common ones are holy water and human urine, particularly that of the mother. Of magic substances burned in fumigation the writer has heard of three—piece of the clothing of the person suspected of casting the evil eye, oil-soaked rag blessed by a nulliparous woman, and seven pieces of straw together with seven stones from seven different streets.

This paper is not learned nor scientific. It has brought you no new methods of diagnosis or treatment. Its purpose has been to interest you, and to point out the prevalence of ancient thought and practices in obstetrics. It is not true of obstetrics alone. Close beneath our feet lies the solid stratum of paganism that reaches down to the veriest beginnings of mankind and covers all the earth. Its outcroppings among the culture and flowers of civilization is a disquieting discovery, almost surpassing belief. The mass of mankind still believes in the efficacy of magic and still respects taboos. At heart we are all still pagans.

RADIUM THERAPY OF CANCER OF THE MOUTH AND THROAT.*

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SUMMARY.

1. Radium therapy, supplemented with electric coagulation, destroys cancer tissue more thoroughly than does surgery alone.
2. Proper radium treatment invariably evidences an inhibitory influence on cancer tissue.
3. The immediate results of radium therapy are encouraging to the patient and those who minister to him.
4. The routine of surgical removal of glands is neither necessary nor desirable—thorough radiation should precede any surgical interference.

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5. Microscopic appearance of malignancy of the mouth and throat is typical, and a diagnosis can be made by a competent observer.

6. Removal of the visible tumor should be attempted by means of radium, applied direct or planted within the tumor and in cross fire—the initial treatment should be the maximum the tissues can stand.

7. Careful recognition of adjacent chains of lymphatics and radiation of same is essential, whether or no surgery is to be attempted.

8. Coagulation-necrosis is advocated as a necessary adjunct to radium therapy in many neoplasms common to mouth and throat.

9. Surgery and anaesthesia do shock to metabolic function, weaken the resistance and undoubtedly serve as a means of disseminating cancer cells. True immunity to such advance can be raised by sharp pre-operative radiation.

10. Radium offers a fair degree of hope for many cases that are received and immediately classed as inoperable. It frequently exhibits palliative influences that are remarkable.

Five years and four months ago, at the Radium Institute, working with our late Surgical Director, Dr. Joseph B. Bissell, I buried 101 milligrams of radium, for 72 hours, in a carcinoma located in the posterior third of a tongue, in a man sixty-three years old, sent to us as a last hope case. Seven weeks later the mass had well-nigh disappeared, except for a terrible burn and deep necrosis. There was later complete retrogression and healing. The man is still well with no other treatment. I believe, that, to Dr. Bissell belongs the credit of the first introduction of radium needles in America.

Although following this case, we continued experimental use of radium needles, for nearly two years, our results were discouraging, so that other forms of cross-fire dosage were adopted. The impression made, however, in our early experience, was lasting and forced us to give buried radium further trial. At the Radium Institute of New York we now have a battery of thirty-seven radium needles, having a radium content varying from $7\frac{1}{2}$ milligrams to 50 milligrams each. A critical study of our experience in cancer affecting the throat and buccal cavities, particularly discouraging regions, will be interesting to you.

Radium has a limited advantage in carcinoma of the jaws, buccal cavity, and in the larynx. We desire to make it clear that our remarks are not intended to convey the impression that radium therapy is to displace surgical effort in any field where surgery has recorded good results, "When more than one chain of lymphatics are involved at the time of operation, the patients are not cured surgically, but many such cases are clinically cured by radiotherapy." Boggs.

The malignant processes commonly met with in the mouth and throat, may be of wide nomen-

clature, but for a brief classification, we will divide them into epithelioma, carcinoma and sarcoma.

Epithelioma of the mouth or throat is usually recognized as a primary growth, for several weeks before it is referred to the specialist. In the light of our knowledge of the simplicity of a cure in the early stage, delay here, as in any other location, is frequently a calamity. The physician and dentist should be cognizant of the fact that every innocent-looking persistent ulcer on mucous membrane is probably malignant. Chronic irritation from artificial dentures, those common with the smoker, and the early leukoplakia patches should receive careful attention. Epithelioma of the lip has a gravity that demands instant treatment; the visible ulcer should receive massive radiation, accompanied by radium or X-ray application to adjacent glands. Primary epithelioma we no longer class as suitable to surgery, which, when allowed proper scope, would mean wide mutilation. Neoplasms of the tongue and buccal mucosa are always combatted with buried radium and radiation over regions where glanular metastases would be expected. The type of the epithelioma, its extent, rapidity of growth and the resistance of the patient, all aid in making prognosis. As epithelioma appears far distant from the glands of the neck, prognosis grows more favorable.

Cancer of the mouth and throat are mainly found in men, due, no doubt, to lack in the care of their teeth, irritation from smoking, occupational causes, and syphilitic taint. Our records show about two cases of mouth and throat malignancy to one of nasal or antral origin. The slow-growing fibromata of the nose, the desperate type of carcinoma locating in the superior maxilla and the lymphosarcoma found above the level of the mouth, form a class that, considered separately, will be reserved for later discussion.

Carcinoma of the tongue, tonsil, and within the larynx, brings conditions that have been classed as almost hopeless of treatment. The rapidity with which the neoplasm traverses the tongue to the glands of the neck and the prompt invasion of a nodule in the tonsil to glands of the neck and in the parotid area forms a discouraging picture. Carcinoma affecting the larynx is apparently not so rich in metastatic opportunity, although equally difficult to treat, owing to the peculiar stubbornness, or resistance offered by the malignant cell. While we are aware that it is possible to inflict heavy radium dosage by direct and cross-fire application, and theoretically it should be effective with about one-quarter of the radioactive energy that would destroy the surrounding healthy tissue, other dangers are to be weighed. There is a two-edged quality to radium; it may aid in a cure, or it may do

severe injury. It is possible to produce a fatal odema, even in cases where moderate dosage is advocated. The formation of fibrous tissue may prove desperate, especially in the larynx, and many other catastrophies warn us that radium in the mouth and throat is not to be the game of a novice. I have heard some who have said that they were glad to find a positive Wassermann in their malignant mouth cases: I cannot agree, for the syphilitic and the tubercular patients are not good subjects for radiation. With all the handicaps and disappointments I have pictured, I believe there are many cases of carcinoma of the tongue, larynx and pharynx that with improved technique are yielding to radium.

Sarcoma, which appears frequently in the head, may attack any area, but most generally, it is found above the level of the floor of the mouth. Often its progress is fairly slow and in the main classed as more favorable for control by radium therapy than carcinoma.

Treatment.—There is an attitude of deepest gloom that prevails in the mind of the world when cancer of the throat is mentioned, and I am afraid this feeling has a grip on those who specialize in caring for these tissues. The subject is a desperate one, but not hopeless. Various cancer hospitals throughout the world, using radium, that are privileged to treat such malignancies report practically no cures of cancer of the larynx, and but few of the base of the tongue, but they are more than hopeful. Such institutions see but few early cases. Many private observers, who are using radium for the same type of cases report some success, and it may be that their results are due to more favorable treatment stage.

When cancer masses are to be removed, they should be first radiated with radium or X-rays and excised by electric coagulation or surgery. When retrogression of the mass is desired our procedure should be radium. If bone or deep tissue is to be removed, surgery.

To speak clearly relating to the real results of radium in the destruction of cancer we must appreciate the fact that the energy of radium has been shown to exert certain physical and chemical manifestations on tissue formations.

Chemical.—On tumors rich in vascular supply radium causes pronounced effects on blood chemistry, particularly of the metallic combinations—this action at times causes rapid changes in the blood count. Dosage extreme and prolonged frequently interfere seriously with metabolic function and elimination, thereby hastening the toxic state.

Physical.—The action of radium shows a selective influence on the cancer cell—inhibitory and destructive. Promptly under influ-

ence of the rays the cell activity is stunned or shocked and may remain dormant for weeks. Under complete and effective radiation cancer cell nuclei are found to be killed and proliferation is checked. Normal tissue cells are many times more resistant than malignant cells and need not be injured.

The axiom of all treatment should be: Cancer allowed to progress is fatal. Therefore the first application of any measure of relief should be to kill the neoplasm completely. As we awaken to a better understanding of radium dosage, we realize that every worker has run the whole gamut of strength of ray energy in an effort to find an effective dose. The experience has cost much, but it has been profitable. I am able to state of my own knowledge that within the present year we will be able to announce fairly uniform radium dosage governing the control and destruction of cancer of the throat and larynx, as has already been announced for some conditions, such as the uterine cervix. You will remember, however, that radium dosage is a complex something that has to do with radium, the screen, the density of the tumor, the activity of the cancer cell, the adjacent tissue and the resistance of the patient's metabolism. Therefore to outline just how many milligrams for eight hours, we would use to cross-fire a malignant tonsil means nothing to scientific study, and is not to be detailed in such a paper as this.

A few observations relative to the technique of dosage will be opportune. A prophylactic or preoperative radiation which causes a sclerosis of the lymphatic glands and vessels and thereby checks metastasis usually consists of about 3,000 milligram hours. Radium element—300 milligrams, with 1.5 mm. of brass and 2 cm. of felt or other distance screen, is allowed to remain bandaged to the glands of the neck for ten hours. Two weeks later, while the inhibitory influence is at its height, the operative procedure may take place. Such precautions of treatment are advocated for the chain glands of the neck when attacking any malignant nodule or ulcer within the mouth or throat.

Epithelioma of the lip may be treated with dosage varying from 50 to 100 milligrams, screened with $\frac{1}{2}$ to 1 mm. of metal and 2 to 4 mm. soft rubber, from 30 minutes to 2 hours, in fairly light areas of infiltration. Where nodular masses are present, they are best treated by inserting platinum-iridium needles loaded with radium element: 10 milligrams per cc. of tissue for a period of 3 hours, is a very effective dose. Epithelioma of the tongue, tonsils and pillars should be treated by radium needles

by first choice, but where such method cannot be adopted, tubes of radium are applied to the malignant nodule, suspended in metal clasps, dental compound, or special applicators.

Malignant tumors of the epiglottis, the false and true cords, should be best treated by radium needles, plunged into the masses through the aid of a long-armed alligator forcep, worked through the direct laryngoscope: $7\frac{1}{2}$ milligrams for 3 to 5 hours, buried in each cc. of tissue, is effective. A sharp cross-fire through the neck of 300 milligrams for 7 hours should be advocated when the needles are used within the larynx. At times it is possible to insert a hard rubber capsule within the lumen of a rubber breathing tube and force it into the larynx. In three instances where tracheotomy has been resorted to, we have been able to draw a silk thread up through the wound, and tie a well-screened tube of radium, containing 100 milligrams, screened with 1 mm. of brass, and 2 mm. of hard rubber; treatment allowed to stay in place for from 4 to 6 hours. The direct use of radium tube applicators to a tumor mass within the larynx by suspension laryngostomy has been used nearly fifty times at the Radium Institute, with some good results, but we now prefer the introduction of radium needles. The real merit of needles is due to the fact that we are able to get the maximum effect of the radiation by allowing the tumor mass itself to act as a screen. Thus instead of screening off the valuable beta rays for fear of a burn, we utilize them to their fullest extent and such of the rays that escape through to the normal tissues are practically harmless. Of course it is hardly necessary for me to say that in all throat applications, the tissues are carefully and thoroughly coagulated to control reflex cough tendencies.

Radium emanation may be planted or buried in some masses with probably less difficulty and, I believe, with equally good results, and some of its advocates claim superior advantages. My personal observation holds that such conclusions are not justified. Radium burns, in the days of three or four years ago, were looked upon by the enemy of radium with high favor; and even today the echo of his horror may be occasionally heard. Radium burns now rarely occur and are of no serious moment to the trained radium therapist—in fact there are many situations which make a radium burn desirable. Radium is superior to X-ray, owing to lack of danger; ease with which the dosage can be applied over small areas and the fact that radium has far deeper penetration of its ray energy.

ACUTE TUBO-TYMPANIC CATARRH.*

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THE title of this paper refers to those acute affections of the eustachian tube and middle ear which are characterized by the formation of serum or mucous in the tympanum or middle ear. This disease is most common in the spring and fall. It is practically always secondary to coryza or affections accompanied by rhinitis.

Predisposing causes are first, obstruction of the eustachian tube due to changes in its walls, by excessive lymphatic growth, oedema resulting from sinusitis, or intra-nasal deformities or tumors, secondly, interference with the action of its dilators by paralysis of the soft palate, hypertrophied tonsils, or scar formation; thirdly, closure of the post-nasal orifice of the eustachian tube by crust formation, polypi, or scar tissue.

The oedema closing the eustachian tube at the isthmus is an extension of the inflammatory process in the nose and post-nasal space. This frequently happens during a coryza but as the swelling passes away in a few hours no harm results. As very few adults have normal nasal chambers, one side being more obstructed than the other causing the tube of the obstructed side to be in a more or less congested state at all times, you will readily understand why the disease at this time of life is usually unilateral. In children where hypertrophied tonsils and adenoids are the main causes, the disease is bilateral.

The function of the eustachian tube is to allow air to enter the middle ear cavity, in order to maintain an equal pressure on both sides of the drum membrane. As the pressure of our atmosphere is continually changing, there being some difference even in two communicating rooms, it is essential for the maintenance of normal hearing, that the eustachian tube open frequently to allow the air pressure in the middle ear also to be changed. It is only under such conditions that the membrane can vibrate freely. When the tube becomes closed from any cause, no air can enter the ear to replace that which is continually being absorbed by the mucous membrane. The pressure in the middle ear becomes lower than that outside the drum, and the drum-head is pressed inward, causing slight deafness. The reduced pressure also allows the blood vessels in the middle ear and tube to congest, slowing the blood supply and gradually exuding a serous transudate to take the place of the absorbed oxygen. If this condition persists very long the serum is replaced by mucous and finally the mucous becomes organized with the formation of fibrous tissue. The result is the immobilization of

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the drumhead and ossicles causing permanent deafness. This is the course of events in children when hypertrophied tonsils and adenoids are not removed in time. It also explains the frequency of acute middle ear suppuration in these children, as the serum present in the middle ear is a perfect culture medium for the bacteria ever present in the nose and post-nasal space. However, in the rest of this paper, I wish to confine myself to the occurrence of this disease in adults.

SYMPTOMS.

The severity of the symptoms depends to a certain extent on the acuity of the onset. There is often pain for a few hours and occasional twinges of pain later. Deafness is present, the degree depending upon the amount of fluid in the tympanum. When there is only a slight amount, the deafness may not be apparent until examination. Patients sometimes complain of inability to hear when the head is held in certain positions, such as lying down. This occurs because there is a small amount of fluid in the tympanum, not enough to reach the round window membrane in the erect position, but enough to cover it when lying as the membrane is in the posterior part of the middle ear. The sensations are variously described by patients. One, a musician, complained only of inability to hear perfectly when tuning his violin. Another said: "It sounds like chimney swallows in a chimney." Another heard bells, another a victrola playing. Usually there is a sense of fullness, or numb feeling, pounding, roaring, bubbling, buzzing, ringing, aching or occasional pain. There is deafness "off and on" or continual.

EXAMINATION.

Due to the negative pressure present at the onset of the disease the drumhead is usually retracted. When the fluid is small in amount or just forming, it will be hard to tell of its presence. For instance in one case, the only definite sign was a decrease of hearing for whisper. Conversation voice was normal on both sides; whisper on the normal side ten feet, on the affected side eight inches. As soon as the fluid covers the round window membrane definite tuning fork signs of middle ear deafness are present.

On inspection, the drumhead will appear retracted. A difference in color will be noted, because part of the membrane has air behind it and part fluid. That with fluid will appear darker, sometimes with a yellowish tint. Occasionally a line which looks like a hair on the drumhead indicates the level of serum. Small rings may be seen, indicating air bubbles. If the middle ear is full, the whole membrane will be darker than normal, with an opaque appearance. Occasionally it is somewhat congested and bulging. The books

say it never bulges, because only enough serum forms to fill the tympanum. However, I have seen it bulge several times in cases that have proved to be of this type.

An examination of the nose and post-nasal space will reveal the cause of the trouble. Acute rhinitis will be recognized, usually subsiding. The eustachian orifice, viewed with the electric rhinoscope will be found reddened, covered with mucous or serum, or oedematous and closed. In one of my cases there was a polyp in the tube just filling the orifice. Upon tubal catheterization and auscultation, abnormal sounds are heard. The eustachian tube is occasionally forced open by the air pressure through the catheter with a loud crack and cracking or rasping noises will continue as long as there is serum in the middle ear. When mucous is present, no abnormal sounds may be heard, because the mucous is viscid enough to prevent the air from entering its substance.

DIAGNOSIS.

The usual history is that of a coryza, followed by a fullness in the ear which does not clear up. There may or may not be pain but there usually are annoying tinnitus and persistent deafness. The exact time of onset can be given. The history symptoms, together with the appearance of the drumhead and eustachian orifice, auscultation sounds on catheterization and functional examination, revealing middle ear deafness, will indicate the disease. However, the presence of serum or mucous in the middle ear cavity cannot be affirmed positively unless it can be seen through the drumhead, i. e. its level changed by changing the position of the head or by the formation of bubbles after inflating through the tube. Usually, therefore, the diagnosis is tentatively made until the serum is seen coming out of the eustachian orifice or evacuated by paracentesis.

TREATMENT.

General, hot mustard foot bath, hot tub or Turkish bath as often as necessary. A strong cathartic at the onset, if indicated, followed by a laxative every night. For the mode of living the keynote is "all things in moderation." In an obstinate case rest in bed and atropine may be necessary.

Local treatment is indicated for both nose and ear. The nose should be thoroughly cleaned after contracting the mucous membrane with adrenalin. When perfectly clean, catheterization of the eustachian tube should be done. If no air enters the middle ear, the isthmus should be dilated with graduated bougies. Very seldom will one fail to get air through by this method. For such a tube, daily applications of silver nitrate in a two to five per cent solution will give the quickest and best results. While catheterization is being performed the eustachian tube should be made ver-

ticle to assist drainage. This is done by tipping the head forward and turning toward the same side.

In a small percentage of cases after the tube has been made patent, the tympanum can be freed of all serum by means of inflation of air through the catheter. If this treatment is persisted in long enough, even if some fluid remains in the cavity, a cure may be obtained. The trouble is that as a rule the treatment will be continued frequently for two or three weeks and even then paracentesis will have to be done to evacuate the fluid. The drumhead after evacuation of the serum or mucous will have the same appearance in its entire extent. The membrane will no longer be retracted, very likely it will bulge somewhat, the tinnitus and deafness will have disappeared. In other words the middle ear is again normal. The tympanum as a rule fills up again because the eustachian tube cannot be made normal so quickly. Bougie dilators and silver nitrate applied locally are usually necessary for a few days before the tube opens normally.

This is the only method of treatment mentioned by Phillips (2). Gile (3), in a recent book says a foot note, "In some cases before the re-opening of the tubes has been effected, the incarcerated serum, either on account of excessive quantity or degenerative change of its character must be evacuated and myringotomy becomes necessary; but these instances are exceptional." The method I have usually followed has been this: If after thorough inflation of the tympanum through a catheter, there are indications of any residual fluid, do a paracentesis, followed by catheterization. This gets every drop out of the cavity and gives the tube a better chance to recover. This method has certain advantages: first, it immediately establishes normal conditions in the middle ear; second, it eliminates a good culture medium; third, it shortens the course of the disease. The last advantage is to me the most important. Hollenger, in his excellent translation of Bezold and Siebmann's Textbook of Otolaryngology gives a very careful consideration to the treatment of this disease by paracentesis. He says, p. 151, "the serum must be evacuated through a paracentesis in the drum membrane whenever a large amount has gathered and the occlusion of the tubes has lasted a long time." Politzer (4) gives two indications for paracentesis in the case under discussion; "If after several days' treatment, no diminution of the secretion is observed and if at the first examination the serum or mucous secretion is seen to be copious." The author would go a step farther and for the reasons mentioned advises open-

ing the drumhead if there is any doubt about the presence of more fluid in the tympanum after the first treatment. About twenty per cent of cases will be quickly cured without myringotomy. The rest to my mind need early paracentesis. After paracentesis has been performed in a case of this type the catheter is again inserted into the eustachian tube and air forced through. This will displace the liquid and send it into the external canal where it may be removed. The procedure is repeated until a clear blowing sound is heard with the use of the rubber tube connecting the patient's ear with that of the physician. After the external canal has been wiped dry, a piece of cotton is placed in the external meatus. This is all that is necessary to keep the canal sterile. The ear should never be irrigated and the patient should be instructed to allow no water to get into it.

The above treatment should be repeated daily at first. As the fluid lessens in amount and the eustachian tube opens, the time between treatments may be lengthened. When catheterization evacuates no more fluid and the tube is patent, the drumhead may be allowed to heal. This will occur within a day or two irrespective of the size of the incision. It is well to examine the patient a week after the drumhead has closed to make sure the conditions have remained normal. During the course of the treatment it may be necessary to incise the drumhead several times, as frequently a very large incision will close, shutting serum or mucous in the tympanum. In case no more fluid is found after myringotomy at the first treatment the drumhead will heal quickly with no bad effect; in fact in one of my cases the diseased condition was benefited by the process. The patient who had bulging drumheads with no inflammation and no apparent transudate in the tympanum, did not improve after several weeks' treatment, until I thought I must have made a mistake and that there must be fluid behind those membranes. I incised both drumheads and found both cavities clear on catheterization. Still within a few days all symptoms disappeared.

I believe that the method which will cure the patient most quickly is the one to follow from an economic point of view. Perhaps fifty per cent of these cases will recover with intra-nasal treatment alone if treatment is persisted in long enough. Still there are certain cases which will require myringotomy eventually to procure a perfect result. By doing it at the first treatment, if all the serum is not evacuated, we obtain a quicker cure and naturally better hearing afterwards as the middle ear is in an abnormal con-

dition a shorter time. Due to the fact that the transudate is an excellent culture medium, a certain small percentage of these cases will become infected, with or without paracentesis. If infection occurs the course is usually very short in the case which had paracentesis, due to the frequent air douching the ear will have had. Infection occurred twice in my cases. The one under treatment was cured in six days. The other, a locomotive engineer working into Canada, came into Buffalo about every five days. For six weeks I had to open his drumhead nearly every time I saw him. Once he was away for eleven days. On the ninth day without treatment, the drumhead ruptured. Purulent discharge followed. However, it healed readily in a few days.

Acute tubo-tympanic catarrh when treated by this method is usually cured in a week. Without myringotomy, treatment must be persisted in for two or more weeks.

This disease should not be left alone nor should proper treatment be postponed as permanent changes take place in the middle ear which interfere greatly with hearing. The fluid becomes organized, fibrous tissue forms, producing immobility of the tympanic membrane with resultant loss of function. As the disease can frequently be cured in a week with perfect hearing by the above method of treatment, I submit this method for your consideration.

Conclusion.

Acute tubo-tympanic catarrh is preceded by obstruction of the eustachian tube from various causes.

Twenty per cent of all cases may be quickly cured by the usual methods of treatment.

Another sixty per cent will be cured if this treatment is persisted in long enough.

The remaining twenty per cent will eventually need paracentesis. The time required to obtain a cure in the last eighty per cent of cases is two to three weeks.

The author's rule "Do a paracentesis at the first treatment if (after repeated catheterization) there are indications of any residual fluid.

The time of treatment by this method is five to seven days. From an economic point of view, at least, the time thus saved is important.

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2. "Disease of the Ear, Nose and Throat," Phillips.
3. "The Nose, Throat, and Ear," Gile.
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SOME STUDIES IN THE EARLY TREATMENT OF CONGENITAL SYPHILIS.*¹

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PRELIMINARY REPORT.

IT is agreed by every one that the time "to make hay while the sun shines" in the treatment of congenital syphilis is during the early months of an infant's life. Some are now advancing a step further by instituting treatment during gestation. The obstetrician is waking up to the fact that to combat effectively the great inroads that have been made by this disease on the fruits of his toil, a systematic study of the effects of the spirocheta pallidum on the pregnant woman and the best means of eradicating it before it does damage to the fetus, must be carried out. Many have observed that intensive prenatal treatment has a most favorable effect on the child. Those who practice such are rewarded by fewer miscarriages, fewer still births and fewer prematurities.

Jean's,² in a review of the literature on congenital syphilis concludes that 75 per cent of all children of a luetic family have syphilis, 30 per cent of the pregnancies in a luetic family end in death of the child at or before term, 30 per cent of all infants born alive in such a family die during infancy (double the normal), and only 17 per cent of all pregnancies seen in a luetic family result in living non-luetic children who survive the period of infancy. In no field is there greater opportunity to lower mortality and morbidity percentages than in congenital syphilis. How best, then, can these infants and children, born under such handicapped conditions, be restored to a basis of health equal to that of their more fortunate fellow countrymen? In a preliminary way I am presenting some results of two years' observation and a follow-up study of two series of cases, with a few details of the treatment resorted to.

The cases in series 1 are taken from the records of the Department of Pediatrics of the Long Island College Hospital. Only those cases are included which I have been able to follow up more or less closely during the past few months. An age limit of three years is arbitrarily taken in this study, due to the time limit of this paper.

The most important facts to keep in mind in this series are (1) that none of these babies received prenatal treatment, (2) that only two received postnatal treatment through the mother's milk, (3) after treatment varying from one to

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¹ From the Department of Pediatrics, Long Island College Hospital.

² *American Journal of Syphilis*, 3, 114, January, 1919.

SERIES I

NO PRENATAL TREATMENT

No.	Name	Sex	Age months	Race	Wass. in parents	Signs in mother	Wass. child	Early Stigmata	Age (mo.) treatment started	Treatment	Present weight, lbs.	Present Wass.	Present Stigmata	Breast-feeding
1	M.S.	F	16	Amer.	4 + M O F	1 misc. 1 Still B.	4+ 4+	Rash, snuffles epiphysitis, dactylitis	4	gray powd.-Hg.rubs-salv.-Hg. oxy.	22	4+	saddle nose, chr. dactylitis	+
2	G.C.	F	8½	Italy	4 + M O F	O	2+ 4+	Snuffles anaemia	7	Hg. rubs-Hg. oxy.-neo.-salv.	14	3+	Frontal osteitis, anaemia enlarged spleen & glands	+
3	M. M.	F	4½	Spanish	4 + M	O	O	Snuffles, spleen, anaemia	3	Hg. rubs-Hg. oxy.-neosalv.	11	O	Same, also frontal bossae & adenopathy	O
4	C. C.	F	9	Italy	4 + M 4 + F	condyloma	4+	Epiphysitis, anaemia	2	ray powd.-Hg. rubs-Hg. oxy.	20	O	glands & spleen	+
5	E. J.	F	26	Syrian	4 + M 2 + F	4 misc. 2 Still B.	4+	anaemia, slow gain, snuffles	22	Hg. rubs-salv.			Died	±
6	J. P.	M	28	Spanish	4 + M O F	1 Still B.	4+ 4+	Snuffles, glands, hydrocephalus	4	Hg. rubs—salv.	30	4+	Frontal bossae-glands and spleen-saddle nose	+
7	R. K.	M	11	Amer.	4 + M O F	Saddle nose	4+	Rash, glands, anaemia-spleen	2½	Hg. rubs-Hg. oxy.-neosalv.	17	O	Rough features-spleen and glands	+
8	F. V.	M	17	Spanish	4 + M	2 Still B. gumma	4+	Glands & spleen, snuffles, rash, bossae	12	Hg. rubs-Hg. oxy.-neosalv.	22	4+	Bossae, saddlenose glands, slow development	+
9	A. P.	F	9	Italy	4 + M	4 misc. 1 Still B.	O	Glands, rash, malnutrition, premature	8	Hg. rubs-salv.			Died	O
10	M. N.	M	4½	Amer.	Tabes F 4 + M	1 misc.	O	Rash, snuffles, glands, malnutrition	2	Gray powd.-Hg. rubs-salv.			Died	O
11	L. W.	F	20	Amer.	4 + M O F	Cong. lues., destroyed palate	4+ O	Snuffles, rash, hydrocephalus	9	Hg. rubs-Hg. oxy.-neosalv.	23	O C. S. F. O.	Bossae, spleen, rough features	±
12	C. S.	M	19	Amer.	4 + M	4 Still B.	4+	Rash, glands & spleen	1	Hg. rubs-salv.	24	O	Rough features	+
13	D. T.	F	16	P. R.	4 + M	Saddle nose	4+ 4+	Malnutrition	6	Gray powd.-Hg. rubs-salv.	21	4+	Glands & spleen, anaemic	+
14	C. F.	F	3	Spanish	4 + M	1 misc.	O	snuffles	1	Hg. rubs	11	O	None	+
15	A. V.	F	3	Spanish	4 + M	2 Still B. gumma	4+	Rash, glands, snuffles, marasmic	1½	Hg. rubs-Hg. oxy.-neosalv.	8	4+	No rash, glands & spleen, palpable	+

twenty-four months, there were stigmata in 12 of the 14, and that the Wassermann has changed to negative in but four cases, (4) three deaths.

The babies in series 2 were delivered by the Obstetrical Department of the Long Island College Hospital, and likewise represent only those whose data have been completed to date. The delivery took place either in the hospital or in the out-patient department. Close co-operation between the departments assured an early visit of the babies to the clinic. In spite of this and follow-up work by the Social Service Department, due in many cases to the persistently refractive attitude of one or both parents, some cases were lost track of temporarily, thereby receiving no treatment. A study of this chart reveals (1) prenatal treatment in all, (2) postnatal treatment through the mother in 14, (3) only 6 of 27 babies showed stigmata, the only signs in 5 of these being prematurity, the other clearing up on treatment, (4) negative Wassermann in 20, not taken in 7. (5) 15 received treatment, 12 received none; (6) there were 2 deaths,

one on the third day, prematurity, and the other at 2 months, at Bellevue Hospital, reported pneumonia.

Other rather interesting comparisons are shown in charts 1 and 2. From the above observations I will not attempt to draw conclusions but will reserve them until after further study of these cases and others which I hope to add to one series or the other.

TREATMENT

The treatment, then, of these babies might be divided into (1) Prenatal; (2) Postnatal.

Prenatal.—This should consist of intensive treatment of the mother during the entire gestation period, provided there are no contraindications. Salvarsan seems to be the important drug, combined with mercury. Babies showing stigmata are in most instances those who have received no prenatal treatment or insufficient treatment. Occasionally there is an unexplained exception to this rule.

Postnatal.—Group A. Those who have prenatal treatment and show no stigmata.

SERIES II

PRE- AND POST-PARTEM TREATMENT

No.	Name	Sex	Age month	Race	Wass. parents	Signs in mother	Mother treated ante-partem	Mother treated post-partem	Early stigmata	Treatment	Birth weight, lbs.	Present weight, lbs.	Present Wass.	Present stigmata	Breast feeding
1	S. J.	F	23	Negro	4 + M	3 still B.	+	+	Prem.	Gray powd.-Hg. rubs	4½	24	O	O	O
2	W. H.	M	17	Amer.	4 + M	3 misc.	+	O	O	O	6½	25	O	O	±
3	J. M.	M	17	Amer.	4 + M	O	+	+	O	Hg. rubs	6½	26	O	O	+
4	L. B.	F	16	Ital.	4 + M	O	+	O	O	O		23	O	O	+
5	C. S.	F	17	Ital.	4 + M	Rash	±	+	O	O		26	O	O	+
6	P. S.	F	18	Syrian	4 + M	O	+	+	O	O		27		O	+
7	H. B.	F	14	P. R.	4 + M	O	+	O	O	O		23		O	±
8	J. M.	M	2	Amer.	4 + M	O	±	+	Prem.	O	4½			Died	O
9	N. H.	F	17	P. R.	4 + M	+	+	+	O	Hg. rubs	6½	24	O	O	+
10	M. B.	M	16	Syrian	4 + M	O	±	+	+	Gray powd.-Hg. rubs-salv.	5½	24	O	O	+
11	L. S.	M	10	Amer.	4 + M	Ulcer vulva	+	+	O	Hg. rubs		20	O	O	±
12	V. W.	M	14	Amer.	4 + M	O	±	+	O	Hg. rubs	6½	18		O	±
13	J. F.	M	12	Amer.	4 + M	Condylo. 1 still B.	±	O	O	Gray powd.-Hg. rubs		21	O	O	+
14	C. D.	M	10	Amer.	4 + M	1 still B. 1 premat.	+	±	O	Hg. rubs-Hg. oxy.-salv.	7	19		O	±
15	V. T.	F	25	Negro	4 + M	2 still B. 1 misc.	+	+	Prem.	Gray powd.-Hg. rubs	4½	26	O	O	+
16	V. T.	F	4	Negro	1 + M	↑	+	O	O	Hg. rubs	6½	12	O	O	+
17	A. M.	M	8	Spanish	4 + M	O	+	±	O	O	5¾	16	O	O	+
18	O. N.	F	4	Amer.	4 + M	Tabes	+	+	O	Hg. rubs	6½	11	O	O	O
19	M. S.	F	6	Russian	4 + M	O	±	O	O	O	7½	15	O	O	±
20	A. R.	F	3	Ital.	4 + M	O	+	O	O	Hg. rubs	8½	12	O	O	+
21	G. P.	F	5	Amer.	4 + M	O	±	O	O	O	7½	14		O	±
22	O. N.	F	7	Amer.	4 + M	O	±	+	Prem.	Hg. rubs	5½	13	O	O	+
23	C. G.	F	4	Ital.	4 + M	Rash	+	O	O	Gray powd.-Hg. rubs	6½	12	O	O	+
24	L. R.	F	12	Amer.	4 + M	+	+	O	O	O		22	O	O	+
25	F. S.	F	11	Negro	4 + M	O	2 Hg.	O	O	O	6½	18	O	O	+
26	A. L.	F	1/10	Amer.	4 + M	O	±	O	Prem.	O	6			Died	
27	P.	F	7	Spanish	4 + M	O	+	O	O	Hg. rubs	6½	16	O	O	+

	+ Wass. family	+ Signs family	+ Wass. child	0 Wass. child	+ Stigmata child	0 Stigmata child	Received treatment	Stigmata after treatment	+ Wass. after treatment	0 Wass. after treatment	+ Wass. to 0 Wass.	No.
Series I.....	15	13	11	4	14	1?	15	14	6	6	4	15
Series II.....	27	12	..	..	6	21	15	0	0	20	..	27

CHART 1

	Breast fed	Breast & Bottle	Bottle fed	Died	% Mortality	Combined % Mortality	Mother treated well ante-partem	Mother treated some ante-partem	Mother treated well post-partem	Mother treated some post-partem	No treatment post-partem
Series I....	10	2	3	3	20	11.8	0	0	1 (No. 7)	1 (No. 14)	13
Series II...	16	7	3	2	7.4		17	10	12	2	13

CHART 2

- (a) treatment of mother.
- (b) breast feeding.
- (c) mercury in one form or another.

1. Gray powder, grs. 1, daily.
 2. 50% Hg ointment, gr. 15, rubbed in daily; continue for three months or until loose bowels are produced.

3. Wait two weeks and take Wassermann. If the Wassermann is negative continue Hg. as before and take Wassermann at six months.

4. If the Wassermann is negative and no stigmata have appeared continue the rubs during the remainder of the first year, allowing a few two-weeks' intervals to elapse without treatment.

5. If the Wassermann is still negative and the baby shows no signs, explain to the mother the necessity of co-operation and interest by keeping in touch with her physician for a period of years.

6. In case of the Wassermann's becoming positive or of stigmata appearing, the baby should be treated as group B.

Group B.—Those who have had no or insufficient prenatal treatment, those who show stigmata or those who have a positive Wassermann.

- (a) postnatal treatment through the mother.
- (b) breast feeding.
- (c) mercury.

1. Gray powders, gr. 1 to 3 daily, with 50% Hg. ointment, gr. 20, rubbed in daily.

2. Mercury oxycyanate, a 1% aqueous solution containing $\frac{1}{2}$ of 1% of a local anesthetic, intramuscularly or intravenously, once or twice weekly. Start on $\frac{1}{2}$ of 1 cc. and gradually increase up to 1 $\frac{1}{2}$ cc. or more. When this is given stop the gray powders, but give the inunction.

3. Continue this for two years, making allowances for periods of rest of two weeks to a month in case of looseness of bowels and to prevent the spirocheta from becoming "drug fast."

(d) Neosalvarsan should be administered at least weekly from the beginning until twelve doses are given, unless untoward symptoms develop, in which case a rest period followed by a reduction of the amount given previously should be instituted. Unless the baby is premature or markedly undernourished, I usually start on 0.09 gram. In the latter it is probably best to start at the rate of 1 c.g. per kilo of body weight. The amount may be gradually increased up to 0.3 gram. It seems to be the drug of choice in dispensary work owing to its ease of administration and less toxic after-effects. In not a single instance has there occurred symptoms of an alarming nature. It is administered in from 5 to 10 cc. of freshly distilled warm water, mixed in a 20 cc. luer syringe. A gold needle of rather small caliber is used, thus insuring slow administration. A vein in the temporal region or at the bend of the elbow, the external jugular, or in selected cases, the longitudinal sinus may be used.

In spite of reports of certain mishaps in using the longitudinal sinus, I have continued to use it in cases where it seemed impossible to "get in" another vein. The points to be observed in employing this route are (1) a competent assistant who understands the necessity of holding the infant's head most rigidly; (2) care in entering the midline just posterior to a line joining the lateral angles of the anterior fontanelle; (3) maintaining the needle in a plane bisecting the anterior and posterior angles of the fontanelle; (4) pointing the needle posteriorly at an angle of 45 degrees; (5) care in not entering too deeply, thus transfixing the vessel; (6) slow administration, at the rate of 2 decigrams per minute.

After twelve injections when the Wassermann is negative and there are no stigmata, stop all treatment for two months and if still negative treat as in group A.

If the Wassermann is positive or there are stigmata, or both, wait three or four weeks and start all over again. This should be given along with the mercury and continued until they can be placed under group A. In a number of the above series and many other cases not included in this study, neosalvarsan has been given well into the gluteal muscles without any untoward symptoms. There is, however, considerable pain for one or two hours following the injection. This should be explained to the mother before giving the injection; in certain cases better co-operation is secured by allowing the mother to be present. The first time a baby is injected I usually give mercury oxycyanate intramuscularly; this causes a minimum amount of pain during or after administration, thereby preparing the mother for a more severe treatment of the baby the next time. Some of the other mercury preparations used as injections are objectionable in children owing to the great pain, oftentimes, for hours afterwards. The 50% official mercury ointment is being used even in infants with no evidence of dermatitis. The mother is told to rub the ointment in a different location on six successive nights.

By treating the cases early certain stigmata which often occur in late congenital syphilis will be prevented, as interstitial keratitis, auditory nerve changes bone changes or cerebro-spinal lues.

The only possible way definite conclusions, as to whether permanent cure is effected, can be reached is by persistently following a large series for a number of years, for the symptoms of this malady are so protean, and often latent in character, that we can not be certain whether it will not manifest itself in some form as late as puberty.

My thanks are due Dr. Alfred Beck, of the Department of Obstetrics of the Long Island College Hospital, whose co-operation in the preparation of the data of series 2 was invaluable, and I refer the reader to his paper to be published in the near future in the *American Journal of Obstetrics and Gynecology*; this paper deals with a study of the mothers of this series.

THE CONTINUED USE OF DIGITALIS.*

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TWO problems that always present themselves in treating a patient with chronic heart disease are, first, the decision as to how long digitalis should be continued and, second, how the drug should be given to maintain the desired therapeutic effect. This is true no matter whether the patient has valvular disease or chronic myocardial disease or some other disease such as chronic nephritis which has caused cardiac failure. I intend here to review the indications for the continued use of digitalis and to point out what I consider to be the best method of maintaining a continued digitalis effect.

First and most important of indications, because so frequently neglected, is the *presence of auricular fibrillation*. Patients with this condition must take the drug continually all of their lives. As long as they do this they are usually able to remain in a fair or even very good state of compensation, so that they are able to undertake the ordinary exertions of their lives without discomfort, and sometimes even rather extraordinary ones.

Within ten days or two weeks of stopping digitalis these patients will begin to notice shortness of breath or precordial oppression or palpitation, after a smaller amount of exertion than would formerly have caused these symptoms. If digitalis is still withheld their exertions will become more and more restricted and more severe signs of cardiac failure will set in.

The cause of this steadily downward path is that with auricular fibrillation the heart rate tends to be rapid, and without digitalis will lie between 100 and 120 per minute when the patient is at rest accelerating to much higher rates upon exertion. The heart is irregular, it is true, but it is more the rapid rate than the irregularity that does it harm, for at such rates as these the diastolic pause is too short for the muscle to recuperate fully from one beat to the next. Fatigue of the heart muscle results and its strength fails so that it can no longer answer the demands of exercise which before it found easy. Digitalis slows the rate of these hearts by increasing the tone of the vagus. This in turn produces a depression of the function of the auriculo-ventricular bundle so that fewer impulses pass through it from the fibrillating auricles to the ventricles, and the ventricular contractions are fewer—the heart rate slower.

Coincident with the slowing the heart becomes less irregular, not because the fibrillation is in

any way improved, but because the impulses from the auricles pass to the ventricles with less irregularity. When the ventricles are beating at 70 per minute they may seem for short periods to be quite regular, but if the heart beats are carefully auscultated the typical irregularity of auricular fibrillation will sooner or later make its appearance.

Our object with these patients is to keep the heart rate between 70 and 80 per minute when the patient is at rest. With this degree of digitalization it will be found that the rate does not increase inordinately with exercise. It will increase to about the same degree as if the patient had a normal rhythm instead of auricular fibrillation, and as with normal rhythm again, will increase more when the compensation is poor than when it is good.

Occasionally, rather rarely, a patient is found who maintains a heart rate of between 70 and 80 per minute without the use of digitalis, in spite of the fact that auricular fibrillation is present. The heart rate of these patients cannot usually be quickened by the use of atropine, so we cannot consider that the slow rate is due to a vagus hyperactivity. We feel that they have a disease of the auriculo-ventricular bundle so that its function of conducting impulses from auricles to ventricles is pathologically depressed.

Digitalis will cause still further slowing in these patients, and dizzy spells or fainting attacks may result, so that they constitute an exception to the rule that every patient with auricular fibrillation should receive digitalis continually.

Let us consider now what are the indications in *patients without auricular fibrillation* which may call for the continued use of digitalis. The *other forms of irregularity* are only rarely benefited, and patients with heart block or extrasystoles may even find their discomfort increased by any dosage large enough to produce a therapeutic effect, and they will of course get no effect, either good or bad, from smaller doses. Such patients will only be harmed by a long course of digitalis, so that it is contraindicated for them.

The mere presence of valvular disease, no matter how loud the murmurs, or without valvular disease, the finding of a rapid heart or an enlarged heart should not be considered to indicate digitalis therapy. Digitalis is *never indicated by the pathological diagnosis*, whether it is valvular disease, myocardial disease or cardiac hypertrophy from high blood pressure, nor do any of these conditions contraindicate it. The controlling feature is the functional capability of the circulation as a whole.

The *need for digitalis arises when the cardiac reserve becomes reduced*, when the compensation gives evidence of failing, so that the ordinary exertions of life which the patient had recently

* Read at the Annual Meeting of the First District Branch of the Medical Society of the State of New York, at Nyack, October 19, 1921.

been able to undertake without complaint, become a cause of symptoms. Shortness of breath, palpitation and an abnormal tendency to fatigue are the first signs of trouble that will appear, and examination at this time will reveal that the patient's reaction to a test exercise is abnormally great. These are the cases whose hearts are in need of treatment and whom digitalis may be expected to benefit, no matter what the pathological condition that causes the failure of the circulation.

When *pain* appears in the cardiac area on exertion or at other times, the indication for digitalis is an uncertain one. There are patients whom a proper course of digitalis will relieve of this symptom, but there are others whose pain seems to be definitely made worse by it. If we use digitalis, and it should be tried, I think, at some time in the treatment of every case whose chief complaint is pain, we must do so with a clear idea that it is an experiment with every patient, and should be ready to stop the drug if the experiment does not seem favorable to the patient.

For a time the opinion was current that patients with regular hearts were not benefited by digitalis, but this was only a reaction from the discovery that the marked slowing of the heart rate of patients with auricular fibrillation was the reason they are so markedly benefited. It was said that since the rate of regular hearts was not especially slowed by digitalis there could not be any beneficial effect. This statement is obviously illogical, and is certainly untrue, since it ignores the fact that digitalis acts upon the heart muscle to strengthen its contractile force. It is from this action of the drug chiefly, if not alone, that the regular heart derives benefit; the contractions themselves are strengthened.

So, then, when these patients with regular hearts show signs of cardiac overstrain on ordinary exertion, they should be treated for the degree of failure which is evident. This is the treatment of acute heart failure and will vary with the severity of the symptoms. Rest in bed may or may not be advisable, but this is not the place to consider the question of acute failure. When the patient has been treated and has recovered his compensation and the treatment been stopped, he should be very carefully watched for a return of his decompensation. At the first sign that he is losing ground, he should be given a course of digitalis combined with graduated exercises for a period of several weeks. When improvement sets in treatment may be again stopped, but if symptoms reappear again we should then give digitalis continually for a period of several months, perhaps again using graduated exercises as an adjunct.

We must now approach the question of dosage. What shall we use as a *guide to the patient's daily dosage?* How can we be certain that we

are giving enough digitalis to influence each individual heart?

We know that the drug is being continually excreted or destroyed by the body, and we also know that unless it reaches a certain concentration in the body—unless the heart is properly saturated with it—there will be little or no effect upon the heart. For instance, 5 minims of the tincture twice daily will never allow the drug to reach a sufficient concentration in the body to be effective, because it is excreted as fast as it is taken in. On the other hand, a single dose of 40 or 50 minims can be shown—by the electrocardiogram—to produce an effect upon the heart beat, although this effect is only a minimal one, and by giving repeated doses of this size we can eventually reach a therapeutic concentration of the drug.

If 40 minims produces a minimal effect we could of course maintain this by giving another dose just as the effect of the first one wore off. We do not, though, wish to continue such a weak action. We want as strong an action as the drug can exert, and so we must try to continue the most effective degree of digitalization, which is that just short of the stage of poisoning.

Different patients excrete the drug at different daily rates just as they tolerate different amounts before showing signs of poisoning, but the average figure for excretion is about 22 minims per day of a tincture of average potency, or two and one-fifth grains of an average leaf—say, 20 minims* of the tincture or 2 grains of the leaf.

The patient should first be brought to the point of therapeutic saturation. This, as I have said, is very close to the early toxic stage marked by nausea, depression and perhaps vomiting, so that we occasionally cause these symptoms by our original course of digitalis. This does no great harm, however, for the symptoms pass off before twenty-four or thirty-six hours if the last doses are not over 20 or 30 minims each, and if the drug is stopped promptly at the first appearance of the symptoms.

One and a half or two days should elapse after the last of the nausea or vomiting, and then, if desiring to continue the digitalis effect, we should start with the average daily dose—20 minims of tincture or 2 grains of the leaf. It makes no difference whether this is given in divided doses or in a single dose. I have a preference for letting it be taken in a single dose at night before retiring, because it seems to be less often forgotten then. If one dose is forgotten or omitted the patient should be told to make it up the next day by taking double the amount.

* Be sure to bear in mind that minims of tincture of digitalis are not equivalent to drops. It takes from 18 to 25 drops of the tincture to equal 10 minims, depending upon the size of the dropper and the rate of dropping—approximately 2 drops to a minim.

Owing to the variability in the excretion rate this can only be considered as a trial dosage, though it is true that over half of all patients have an exact dosage lying between 15 and 27 minims of the tincture daily. Some can take but 10 minims daily though, and some can take as high as 40 minims of the same tincture.

I have been able to work out this feature of variable excretion very carefully at the night cardiac clinic of the New York Hospital, by determining the total amount of the same tincture of digitalis taken during periods of from one month to seven months by different patients, who were taking it continually. The total amount of the drug divided by the number of days gave the average daily dosage. These figures well illustrate the varying dosage that can be and must be given to maintain the digitalis effect.

- 9.5 minims per day for 2½ months
- 14.5 minims per day for 7 months
- 15.5 minims per day for 6 months
- 18.5 minims per day for 1½ months
- 22 minims per day for 7 months
- 23 minims per day for 1 month
- 23 minims per day for 7 months
- 24.5 minims per day for 2 months
- 39 minims per day for 2 months

These figures are quite in agreement with others which have been obtained by a different method and make it very plain that our guide to the daily dosage is an average figure from which the needs of different patients will vary widely.

Let us now pass on to the *method of obtaining the individual dosage* for each patient. When *auricular fibrillation* is present it is a simple matter, for we have in the heart rate an easily observed guide to the degree of digitalization. It is only necessary to give enough to maintain the rate at a constant level. As the drug saturation diminishes the rate will increase and as the saturation increases the rate will slow. With these patients the dosage should be such as will maintain the rate between 70 and 80 per minute when the patient is at rest.

If 20 minims of the tincture each night is too much, as shown by the rate dropping to 60 or less, then the dose should be omitted one or two nights a week, but not for more than two nights in succession, and the rate again observed for a time. If, after two weeks, it increases again we have omitted too much so we should increase it slightly, and so on, until by trial we have found the correct daily dose for the individual.

With *normal heart rhythm* the problem is much more difficult, for we have no ready guide to the body's saturation with digitalis. It is possible to use the electrocardiogram for this purpose, by

observing the change in the T wave produced by the drug, and taking records every 14 days or so to see that this change is maintained. This is not practical outside of hospital work as it is too expensive for most patients, so that we must learn to be guided by other things.

The only guides we have are that the average dose is 20 minims of the tincture daily, and that by giving more than the maximum excretion of 40 minims daily, the patient will gradually become more and more saturated until the depression, nausea and vomiting of poisoning make their appearance.

The patient should first be thoroughly digitalized and then the drug stopped for two or three days. We should then continue with the average dosage, 20 minims daily, seeing the patient once a week and warning him of what signs of poisoning may appear, with directions to stop the drug at their first suggestion. This is necessary because some patients do not tolerate even the average dose. If signs of poisoning do appear we should stop the drug again for two or three days and resume with 15 minims daily.

If signs of poisoning do not appear for a month, we must then test the patient for his saturation. If he should have been excreting much more than 20 minims daily, he may by this time have reduced the concentration of digitalis within his body to almost nil. We must increase the dose to 30 minims morning and night, 60 minims a day, and continue this until signs of thorough digitalization appear.

We are able to judge by the number of days before toxic signs appear, how much the patient's excretion has exceeded our dosage. If much digitalis is necessary to regain the toxic concentration, then the patient has been excreting rapidly and we should, after the proper pause, resume with 30 minims of the tincture daily. If not so much is needed to cause the toxic signs to appear then our dose on resuming will be smaller.

And so we must proceed by a sort of cut and try method, but by the end of the second month we should have a fairly exact idea of the patient's daily needs. When we have determined the dose it will be possible to continue it indefinitely, for patients do not seem to acquire anything that corresponds to a toleration for digitalis. With *auricular fibrillation* it should be kept up for years, never allowing over two or at most three days to intervene between doses, but with normal rhythm it is rarely necessary or useful to continue the drug for more than four or five months. After this time give the patient a month's holiday and see whether he may not now be able to maintain the higher level of efficiency to which our treatment has raised him.

NITROXYGENIZED ETHER VAPOR.*

By ADOLPH F. ERDMANN, A.B., M.D.,
BROOKLYN, N. Y.

SEVENTY-FIVE years ago anesthetists received their name from Dr. Oliver Wendell Holmes. Some sixty years later the Roth-Drager chloroform-oxygen apparatus for the first time relieved them of the burden of hand delivery of the agents, and after ten years more a Brooklyn anesthetist, Kruskal, then working at the Jewish Hospital, gave us a method to produce and deliver ether vapor by means of an electric blower. About the same time, 1915, Montgomery, of the Woman's Hospital, New York, suggested the term "mechanical anesthesia" for his newly devised etherometer bottle, which automatically fed ether to a diaphragm inhaler. You will recall that he was laughed at as well as criticized for relieving himself of the tediousness of manual delivery and enjoying the luxury of watching the machine do the work which he had hitherto performed.

Yet, it is by no means improper for the surgeon's "third hand" to seek means to lighten his own task. If the anesthetist makes it easier for the surgeon to do his work, why shall not the anesthetist help himself to secure greater ease and time to devote himself more assiduously to his own trying task. He can do his best work when he is least burdened. A cramped position is a weariness to the mind as well as to the body—to squeeze a rubber ball as if giving 10,000 handshakes, or to step upon a foot bellows as if climbing Mt. Washington is hard work. I wish to show you a better way.

Nitroxxygenized ether vapor is ether volatilized by nitrous oxid gas and corrected by oxygen. You say, "that is nothing new." Ah, but it is. Not until last year did two members of our New York Society of Anesthetists describe their method of utilizing nitrous oxid gas for carrying ether agents. To be sure, I began doing that ten years ago, but am able now, in this public way, merely to second their recommendations, and to add emphasis by this paper to their announcement of the great utility of the method. Until recently it has been almost a sacrilege to suggest that ether be used with gas-oxygen. You recall how, almost shamefacedly, the admission was made that "a little ether was added"—"a few drops of ether were used." And when Prince, in 1918, came up from Alabama to read a paper on 1,000 consecutive N_2O-O anesthetics before the New York Society of Anesthetists, some of us who were present wondered how it had been done, and were mightily relieved to hear him say in his summary and conclusion that he would never again attempt such a *tour de force*. Another

interesting remark was made by the President of the Section on Anesthesia of the Royal Society of Medicine at the meeting in 1919 on the occasion of the exhibition of several gas-oxygen machines. Powell said: "I am told that gas-oxygen is to be the only anesthetic of the future, but I notice that on each of these machines there is an ether bottle." And in the discussion which followed, the opinion seemed to prevail that, inasmuch as in fully 50% of gas-oxygen anesthetics more or less ether is used, the correct term—although almost a purism—should be a "variously modified gas-oxygen-ether" method. It is proper to notice right here the answers to the recent questionnaire of the National Anesthetic Research Society, showing that in 200 hospitals reporting 12.9% of the operations were done under gas-oxygen with or without ether, and 64.6 under ether only; that of the 200 N_2O-O is generally employed in 6 and N_2O-O-E in fifteen hospitals. Thus you see it has now become quite fashionable because general to use ether with gas-oxygen. This fact was well stated even five years ago by Miller before the Providence Medical Society in the following words: "From the standpoint of safety and efficiency we can predict that ether will be the routine anesthetic of the future, with nitrous oxid and local anesthetics as valuable adjuncts."

So I hail the methods advocated by Sanford and Gwathmey—previously referred to, as a confirmation of the correctness of my views held for some time past and more or less continuously put into practice. Not N_2O-O-E , but $E-N_2O-O$. Nitrous oxid the adjunct, oxygen the corrector, ether the base. It is a method which can be employed anywhere, for the apparatus used is a complete carrier of all anesthetics, and with the greatest ease because the machine runs itself. The portability of the apparatus gives opportunity for work away from the hospital, and the use of either or both of the gases does away with any air propulsion device—whether manual, pedal or electric. In the second place, any modification or combination or sequence of agents is readily formed; and thirdly, what is so pre-eminently important, there is immediate and complete control of the constancy of dosage.

Everybody knows that gas-oxygen with minimal ether—or better, ethyl chloride—is a very fine method when employed under ideal conditions, which conditions include an ideal surgeon. But for those of us who have to give anesthetics under many varying and trying conditions, there is need for something else: a method and an apparatus which can be used anywhere, for anyone, for all kinds of work; in the bedroom or the bath room, for a tyro surgeon or a thyroid specialist, when tonsils are to be excavated or toe nails extracted. Some prefer oxygen-ether. Coburn, in 1917, called ether-oxygen the most scientific of all methods, and Lumbard, by sug-

* Read at the Annual Meeting of the Medical Society of the State of New York, at Brooklyn, May 5, 1921.

gesting the employment of low tension oxygen cylinders, added much to the popularity of the method. Yet I have always thought this means an unnecessary expense as well as a faulty method because of the known difficulty to induce a vapor anesthesia without resorting to a drop procedure first or employing gas. Its value in my estimation lies mainly in the fact of constancy of the delivery of the anesthetic. If a cylinder containing oxygen is to be used or the induction made under gas an apparatus carrying both is available for the better method advocated in this paper.

But why reverse the hitherto customary relation of the ether and the gas. Because ether is the best single agent we have. And why use N_2O instead of air. Because we have an apparatus which permits its use at any time during the operation—as well for the introductory comfortable somnolence as at the conclusion for lung ventilation. Besides, these agents, because of their individualistic affinity for the several components of the blood, can make use of more of the whole blood than either alone. Ether the lipoids, gas the water and albuminous elements; and because these are used in small quantities the erythrocytes are left for the oxygen. There is thus triple efficiency. Is there any synergistic effect? Frankly, I do not know. I have been unable to find any reports of study of either chemistry or pharmacology of this particular combination of agents. I will be able later to report some delayed personal investigations. This much we do know. Gas and ether are dangerous twins: more fatalities are to their discredit than to ether alone; and I do know from experience that the combination with oxygen has repeatedly held patients when ether alone could not, unless large amounts were used. Of course, we have learned to say gas and oxygen in the same breath; if we could barbarously say “gasygen” that would indicate what we mean when we say “gas.” I began by using an open method with atmospheric oxygen, but soon changed to one more closed and used low pressure cylinders. But now, having Gwathmey's perfected apparatus, I find it much easier, of course, to use the small cylinders. I am not going to argue for an absolutely closed method, although I frequently let the patients rebreathe. These questions of CO_2 output and retention, low oxygen tension and warmth as affecting vital processes are so well known that they can be raised in the course of the discussion without further reference in this short paper. The *Journal of Physiology*, and others, contain the results of much experimentation. Suffice it to say that I like to use this Montgomery mask because I can increase or decrease its size, and readily adjust the CO_2 to the patient's need by changing the size of the fenestrum.

“Open” and “closed” are juggler's terms. The important factors are the relative quantities of oxygen and CO_2 . If we could find a word to describe that relation much confusion would be avoided. Since I use oxygen freely I am not content to say I employ a closed method even though a bag is the means. We know that conditions vary so much, and have to be ready to accommodate ourselves to such differing requirements, both from the patient as well as on the part of the surgeon, that an apparatus which enables us to do this is much to be preferred to one which is inflexible. Bryant's determinations of the percentages in Riving's bag, reported to the New York Society of Anesthetists in 1915 are interesting reading. The oxygen content ranged from 6.9 to 16.7% and the CO_2 from 2.3 to 3.2. It is no surprise to read that the 6.9 and 9% oxygen gave blue patients. Clinically I am satisfied that I have sufficiently high percentages if the capillaries show red blood—particularly the small one running toward the upper margin of the ear fossa.

I plead guilty to another possible heresy when I express my doubt of the value of straight N_2O-O except when clearly indicated, of course, because of the loss of the comfort of post-operative analgesia. To be sure, this can be obtained by the exhibition of alkaloidal medication. Yet there is comfort in the slow emergence from an ether anesthesia—other things being favorable—and the gradual recognition of discomforts and the retarded recovery of mental equilibrium. So many factors enter here that a wide field for discussion is at once opened.

There can be very little need in this audience to explain the several steps of the method. In actual practice the patients receive a gradually increasing volume of straight gas. From the very beginning the mask is well adjusted to the patient's face, and because of the air in the bag he hardly notices the introduction of the gradually increasing volume of pure gas. Oxygen is begun just as soon as there is the evidence of any need. It depends upon the patient if ethyl chlorid is added, or if the ether is slowly turned on. Then, as rapidly as it is possible, the ether is increased to sufficient amount to complete the induction and secure the depth of the anesthesia required. The ether is relied upon for the anesthesia. The amounts of gas and oxygen are proportionately increased or diminished to secure this supply. If oxygen is required the gas is decreased. Usually one hole of oxygen can be on for the whole operation, and two or three holes of gas. The dosage is constant as determined. Toward the close of the operation the ether is diminished and gas used to complete the anesthesia, with oxygen at the very end for

complete ventilation. I am not so foolish as to claim both heaven and earth for this method. This is the first time that a place for it alone has been accorded it anywhere on a program. It suits me. Perhaps others also will find that it suits their needs.

AGITATION FOR FREE CHOICE OF PHYSICIAN IN NEW YORK AND WHAT IT LEADS TO.

By EDEN V. DELPHEY, M.D.,
NEW YORK CITY.

AN article under the above caption was published in the *Monitor*, official publication of Associated Industries, of New York State, Inc., at Buffalo, N. Y., in December 1921, and circulated as a reprint by the author, Mr. Oliver G. Browne, Secretary of the Self-Insurers Association, even while a committee of which he was and is a member and appointed by the Industrial Commissioner, was engaged in making a survey and considering the same and numerous associated questions regarding medical work, etc., under the Workmen's Compensation Law. In commenting on this article, the writer wishes it to be distinctly understood that he has no personal or other animus in the matter; that the author may be "as good a neighbor, as kind a father, and as loving a husband as ever cut a throat or scuttled a ship." The writer opposes him because his written words are inimical to the best interests of the workman as well as to those of the medical profession.

The writer quite agrees with the author of the article that medical service under the Compensation Law is the obligation of the employer and the right of the employee, but as the law is usually interpreted and administered the choice of the physician is made by the insurance carrier although "The insurance carrier has no voice in the choice of the physician" as decided in the case of "Mezeritsky vs. Mezeritsky & Miller, 15 S.D.R. 613, 3 Bul. 145; App. Div. 919." The most common causes of complaint of physicians attending compensation cases are the "lifting" of cases and the refusal to pay or the arbitrary cutting of the bills of the physicians for services rendered, even sometimes when the physician has been properly authorized by the employer to attend and treat the injured workman. The writer has had a number of such cases brought to his attention since he began serving on the above mentioned committee. Of course, strictly speaking, the employer has the right under the law to decide who is to attend and treat the injured workman, but has the workman no constitutional rights in the matter? The employer simply risks a few dollars, more or less, and adding it to the overhead charges of doing business passes it along to the ultimate consumer, but the workman

has his life, health, and future usefulness at stake. The New York State Federation of Labor, composed of 850,000 members, of whom 750,000 are voters, recognized this fact and the "Locals" voted to instruct their delegates to the State Federation, and the latter went on record in favor of "free choice" in these cases.

The author says:

"How does the doctor figure in this problem? . . . He is not a party to it any more than is . . . or any other class of people who might be mentioned."

This is the *ipse dixit* of a man who is by profession a lawyer and by practice both a lawyer and an insurance official—Secretary, Self-Insurers Association—and who under the decision of the court, quoted above, "Has no voice in the selection of the physician," but he knows that it is the habit of some members of his profession to endeavor to win cases by obscuring the issue, giving half-truths, issuing innuendo, etc., when either or both the law and the facts are against them. The physician figures in this problem just as much as does the insurance carriers for whose benefit the law was not enacted, but the stock of one carrier doing compensation work, and which has two employees on the committee of the Industrial Commission, sells in the open market for 640.

"The Legislature did have in mind, according to judicial interpretation of the Compensation Law, the economic relief of certain classes of injured employees and their dependents who were becoming burdens on the community, due to the increasing number of cases in which there was no remedy at law to afford them maintenance."

According to the writer's best recollection, not only was such the case but also because it was difficult for a poor injured workman to successfully fight a rich corporation and get justice; that he was very frequently induced to settle the case for much less than he was entitled to; and to the fact that the employers desired to avoid the annoyance of being compelled to defend legal actions brought by "ambulance chasing lawyers."

"The enactment of the medical section did give the doctors a privilege which they had not previously enjoyed, in that it assured them their pay when *properly employed.*" (Italics ours.)

The enactment of the Compensation Law not only did not give the physicians a privilege which they did not have before, but as the law is interpreted it deprives them of a certain amount of professional practice which they previously had by the *special choice of the patient*. It is true that the law changed the paymaster but did that improve matters? Do not the physicians have more trouble in collecting their bills under the Compensation Law than formerly? According to the present practice "being properly employed" means either having a personal contract with the insurance carrier or being a "sweat-shop surgeon" for someone else who has such a contract. One such contractor has 72 dressing sta-

tions in New York City and it was testified pays his employee-physicians 50% of the income which they receive from the work sent by him at \$1.50 per dressing, the employee-physician paying all the over-head costs.

"Now let it be understood clearly that the law at the present time provides, and at all times has provided, for absolute free choice of physician so far as the injured man is concerned. Furthermore to get the *business* (italics in the original) there is the fullest and freest competition permitted by the law. . . . But this competition is based on ability and merit and not on intrigue."

If the author would reverse the positions of "intrigue" and "ability and merit" the statement would be more nearly true, but the above statement evidences a desire on the part of the author to induce physicians to engage in the undignified and unprofessional scramble for business, something the profession is very loth to do.

"There is a natural tendency to develop a specialized surgery in congested centres that is especially valuable to the two parties vitally interested in the compensation law. . . . The law which we know as the 'survival of the fittest' operates to gravitate this business to such men because it is to the employers interest to select such men."

If it is to the employers interest to select such men as they have selected in the past—and some employers have selected such men as the 72 sweat-shop dressing stations furnish, and such an one who, doing the work of 65 insurance companies in his town, appeared before the committee at one of its up-state hearings, and with whom even some of the members of the committee employed by the insurance carriers, were not all favorably impressed—does the author think they have selected the best men? Moreover, how can there be a survival of the fittest when all the fit do not have a chance to compete? Every surgeon knows that there are no special methods of technique which are only, or even especially, applicable to so-called industrial surgery; that when a man has a broken bone there is no difference in the technique of the treatment whether it is a compensation case or not; that when he receives an accidental wound the technique is the same whether his employer is or is not in the hazardous class and therefore is insured under the compensation law.

"Anything that is short of the choice of the physician by the employer as at present will have very dangerous results." (Italics in the original.)

And yet, in the committee of the Industrial Commission, the hue and cry by the employees of the insurance carriers has been: "We can't get the best surgeons to do the work." Of course they can't, because the best surgeons don't want the annoyance of having cases "lifted" on them, and having their bills arbitrarily cut down by the carriers.

"The injured man would get no benefit from the change because (a) No argument that improved treatment would result can be advanced in favor of it."

"If by "free choice" the best surgeons can be induced to engage in the care and treatment of compensation cases, will not "improved treatment" result?

"(b) It would not improve the standard of the medical profession."

The writer does not think the author need worry about the standard of the medical profession, as at present it is higher than the one to which he belongs and that it requires at least one year more of collegiate instruction besides the time spent as an interne before engaging in private practice than does his profession.

"On the contrary, it would arrest the development of the specialized service now so splendidly functioning."

And yet we have the 72 sweat-shop dressing stations! And at one of the up-state hearings it was testified that an ex-butcher boy was doing the first-aid treatment by the permission and approval of the so-called industrial surgeon, the employer, and the insurance carrier.

"(c) It would not lessen but would foster quackery and the injured man would become the subject of all sorts of absurd treatments at the expense of the employer."

"(d) It would offer him as the subject for uncontrollable exploitation by unscrupulous practitioners for there would be no incentive to prompt restoration to usefulness and health."

Does the author not know that the medical profession is the most altruistic one on the face of the earth; that the good of the patient is always the first interest of the physician; and that he is continually giving his best efforts without hope or expectation of compensation in poor and needy cases? Does the author think that under "free choice" the injured workman could be any worse off than he is now when under the present system of sweat-shop dressing stations and contract surgeons the tendency is to return the man to work sooner than is advisable? We admit that any exploitation is an evil, but which is the worse, to exploit the employer's pocket-book—if such really is the case—or to exploit the poor workman's life, health, and future usefulness?

"Then other medical groups or 'services' would be built up depending not on getting business from an employer or labor union, but upon intrigue or sociability, or politics, as the opportunity might offer. The so-called lodge doctor or contract physician would be in evidence—securing to the workmen and their families cheap medical service but depending largely on securing injury *business* thereby and recouping from the employers. Imagine the position of the honest employer or worthy employee whose interest is committed to such men."

Is not the contract physician in evidence now? And is the author fearful that someone will compete with the men already in the business, one of whom is advertised in the mid-January number of an insurance journal with not only two and one-half (2½) pages of text but also with a photograph of the "contractor" and nine and one-half pages of half-tones of views of his place?

"Here and there in the medical profession is to be found a doctor displeased with present conditions. . . Unfortunately the medical societies, because of dissatisfaction of a few, are with the Labor Unions in seeking a change."

Not only here and there but everywhere the "doctors" are dissatisfied with the Workmen's Compensation Law as it has been interpreted and administered in the past. The medical societies are rightly and justly seeking a change of conditions not only for themselves but more especially for the injured workmen. The "doctors" and the labor unions see and know the evil effects of the defects of the law and very properly seek to change it so that it will more nearly accomplish what the legislature intended it to do.

Numerous medical societies have carefully considered and thoroughly discussed the subject of free choice of physician under the Workmen's Compensation Law in all its phases, but more especially from the point of view of the best interests of the men who have the most at stake, the workmen; and they heartily approve of some such amendment to Section 13 as that introduced by the writer. He desires to call attention to the fact that this amendment does not give absolute free choice of physician, as there is nothing absolutely free in this or in any other country. We have no absolutely free speech, free press, or free anything else; everything is regulated according to the best interests of society. The writer distinctly specified in the suggested amendment: "under the supervision of the Commission," and he suggested to the Commission and to the committee the employment of a small number of consultants who should visit cases suspected of not receiving the best treatment, observe the method employed, and act as a consultant when desired. Mr. Miles Dawson, attorney and actuary was the legal adviser of the Governor in the matter when the Workmen's Compensation Law was under preparation for enactment. He took a large part in the drafting of the law; and he was the attorney for the Hon. Jeremiah O'Connor who, under the Act of the Legislature in 1919, made a very thorough investigation of the administration and working of the law and submitted twenty-six recommendations for its improvement. Mr. Dawson is strongly in favor of free choice of physician and so stated before the Knight Re-codifying Committee of the Legislature this year and before the Workmen's Compensation Commission, declaring that this method of procedure with the consultants would more than pay for itself in reduced costs for medical service.

SUGGESTED AMENDMENT TO THE WORKMEN'S COMPENSATION LAW.

"Section 13, Treatment and care of injured employees. The employer shall promptly provide for an injured employee such medical, surgical or other attendance and

treatment, nurse and hospital service, medicines, crutches and apparatus as the nature of the injury may require during sixty days after the injury; but the commission may where the nature of the injury or the process of recovery require a longer period of treatment, require the same of the employer. [If the employer fail to provide the same, after request by the injured employee such injured employee may do so at the expense of the employer. The employee shall not be entitled to recover any amount expended by him for such treatment or service unless he shall have requested the employer to furnish the same and the employer shall have refused or neglected to do so, or unless the nature of the injury required such treatment and services and the employer, or his superintendent or foreman having knowledge of such injury shall have neglected to provide the same.] *An injured employee shall have the right to choose any physician duly licensed to practice medicine in this state to attend and treat him for the injury as hereinbefore provided, subject to the supervision of the Commission.* All fees and other charges for such treatment, [and] services, medicines, crutches and apparatus shall be subject to regulation by the commission as provided in section twenty-four of this chapter, and shall be limited to such charges as prevail in the same community for similar treatment of injured persons of a like standard of living."

Matter in brackets to be omitted.

Matter in italics is new matter.

The writer believes that when a sovereign state certifies in due and proper form that a person is properly qualified to practice medicine and surgery no Act of the Legislature should deprive him of the right to so practice in any and all cases when and where the sick or injured man chooses him so to do.

Deaths

BAILEY, PEARCE, New York City; College of Physicians and Surgeons of New York, 1889; Fellow American Medical Association; Member State Society; Academy of Medicine; New York Neurological Society; New York Pathological Society; Physician Neurological Institute; Consulting Neurologist St. Luke's, Roosevelt, New York Orthopedic, Manhattan State and St. John's Hospitals. Died February 11, 1922.

GRIGGS, ELMA C., Ithaca; Hahnemann, Chicago, 1888; Member State Society. Died February 25, 1922.

KITTELL, MARTIN M., Jamaica; New York University, 1891; Fellow American Medical Association; Member State Society; Visiting Physician Jamaica and Queensboro Hospitals and Otilie Orphan Asylum; Associate Physician St. Mary's Hospital. Died February 28, 1922.

OWEN, JOHN JASON, Newcomb; Dartmouth, 1894; Member State Society. Died February 16, 1922.

REID, ADRIAN YOUNG, New York City; New York University, 1880; Member State Society. Died February 18, 1922.

STIMSON, DANIEL M., New York City; College of Physicians and Surgeons of New York, 1868; Fellow Academy of Medicine; Member State Society; New York Pathological Society; Consulting Surgeon Mt. Sinai, Skin and Cancer, New York Infirmary for Women and Children; Loomis Sanitarium. Died February 21, 1922.

TODD, LEONA ESTELLE, Willard; Cornell, 1905; Fellow American Medical Association; American Medico-Psychological Association; Member State Society. Died February 21, 1922.

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Joshua M. Van Cott, M.D., Brooklyn.
Medical Research
Frederic E. Sondern, M.D., New York.
Scientific Work
Samuel Lloyd, M.D., New York.
Medical Economics
Henry Lyle Winter, M.D., Cornwall.
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COUNCIL

The above officers (with the exception of the Assistant Secretary and Assistant Treasurer), the Ex-President and the Councilors of the District Branches.

First District—George A. Leitner, Piermont.
Second District—Arthur D. Jaques, Lynbrook.
Third District—Arthur J. Bedell, Albany.
Fourth District—Edwin MacD. Stanton, Schenectady.
Fifth District—William D. Alsever, M.D., Syracuse.
Sixth District—Leon M. Kysor, M.D., Hornell.
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GEORGE W. WHITESIDE, Esq., 27 William St., New York.

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ROBERT OLIVER, Esq., 27 William St., New York.

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Secretary, EDMOND E. BLAAUW, M.D., Buffalo.

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Chairman, PAUL B. BROOKS, M.D., Albany.
Secretary, ARTHUR D. JAQUES, M.D., Lynbrook.

Neurology and Psychiatry

Chairman, MICHAEL OSNATO, M.D., New York.
Secretary, S. PHILIP GOODHART, M.D., New York.

ANNUAL MEETING.

THE approaching annual meeting of the Medical Society of the State of New York offers an attractive scientific and social program which should be an inducement for a large attendance. It affords the very best means for the interchange of opinions and ideas not only in matters concerning the art of medicine and public health, but also in the personal affairs of life, to say nothing of the renewal of friendships. Medical men owe to the public as well as to themselves and their families the benefits derived from this association with their fellows during temporary absence from home and the responsibilities of practice.

The meeting of the House of Delegates is a most important part of these yearly gatherings and the men selected to represent you should give faithful and conscientious attention to the whole of all the sessions of that body. Experience teaches that this is by no means always the case and it is not difficult to recall a number of instances when actions not in the best interest of the Society would surely have been prevented if every delegate had been in his seat. At the next meeting a number of serious questions of policy must be decided, and for this purpose we need the voice of every representative. There is room for new activities and for improvement in old ones. Let our delegates go to their task in full recognition of their responsibilities, let them meet the issues squarely and let the solution of the problems be for the benefit of the greatest number. These men should earn their prerogatives and deserve our gratitude.

LEGISLATION.

THE annual meeting of the State Legislature has now been in session for two months and is drawing to a close. The bills introduced in the Senate number over twelve hundred and those in the Assembly about sixteen hundred, and about the usual number of these deal with matters in which the members of the medical profession are interested. The establishment by the State Society of a Legislative Bureau has been a great step in the right direction. In this way the rapid and efficient broadcasting of information concerning the proposed laws has been accomplished and the members of the Legislative Committee deserve full credit for the organization they have created as well as for the efficient manner in which it functions. They have kept the County Society Legislative Committees thoroughly posted by sending them bulletins of information as frequently as seemed necessary. If the proper appeals to the legislators in sufficient numbers were not made by the local representatives of the profes-

sion this was a local fault and can no longer be ascribed to the inactivity of the State Society Committee.

While the Legislative Bureau has inaugurated this new service and deserves full credit for it, there is still room for broader and more effective activities. Ways must be found for the Bureau to learn the consensus of opinion of the profession in the State in order that it may truly represent the majority. It is self-evident that the minority must give way to allow the presentation of a unanimous opinion in every matter. Furthermore the Bureau should be in position to command the services directly of all those who can render it the most efficient aid in the fight for the best interests of public health and medical professional standards.

ETHICS

SINCE the publication of the proposed new draft of the Constitution and By-Laws, there have been several inquiries relative to the inclusion of a Code of Ethics. This is a matter which should be presented to the House of Delegates. For the information of the members, a copy of the official action of the Society in this regard, taken in 1905 and which is still in force, is appended.

The agreement entered into between the Medical Society of the State of New York and the New York State Medical Association and dated October 19, 1905, provided in paragraph 7th thereof, as follows:

"7th. It is further covenanted and agreed by the parties hereto that as soon as practicable after the entry of an order for the consolidation of the corporations the following proposition shall be submitted by referendum to the vote of the members of the Society, namely,

"The principles of medical ethics of the American Medical Association being suggestive and advisory, shall be the guide of members in their relations to each other and to the public."

The order authorizing the consolidation of the two Societies was made at a Special Term of the Supreme Court, held at the City of Rochester, on the 9th day of December, 1905, the order being signed by Mr. Justice John M. Davy and entered in the office of the Clerk of Monroe County. The referendum was had upon said proposition and the vote taken on May 10, 1906, which referendum adopted the ethics of the American Medical Association as provided in the above quoted section of the agreement of consolidation.

NEW ORGANISM AKIN TO BOTULINUS

The existence, says the Public Health Service, in a recent report by Ida A. Bengtson, has been demonstrated of an anaerobic organism producing a soluble toxin which affects animals in a manner similar to that of botulism organism but which fails to be neutralized by polyvalent botulinus antitoxin. Study of the organism, as found in the larvæ of the green fly *Lucilia caesar* sent to the Service, indicate that it differs markedly from the botulinus isolated in the United States, and possibly is more nearly related to the European type described by von Ermengem in 1912, though it differs from this in im-

portant respects. Tests on laboratory animals by inoculation and by feeding caused death in from 5 to 71 hours. The most striking pathological result was, as in botulism, the congestion of the blood vessels of the brain and meninges. Efforts are being made to produce an antitoxin. The suggestion that the organism of the disease causes limberneck in chickens has not yet been demonstrated.

LABORATORY WORKERS CONTRACT TULARÆMIA

All six of the laboratory workers of the U. S. Public Health Service who have been studying tularaemia, a disabling sickness of man which has been known, particularly in Utah, for the last five years, have contracted the disease, two of them being infected in the laboratory in Utah and the other four in the Hygienic Laboratory in Washington. Such a record of morbidity among investigators of a disease is probably unique in the history of experimental medicine.

Two of these workers are physicians; one is a highly trained scientist; and the others are experienced laboratory assistants. One of them contracted the disease twice, once in the laboratory in Utah and again, two years and five months later, in the laboratory in Washington.

In these workers the disease began with a high fever, lasting about three weeks, and was followed by two months of convalescence. The disease has few fatalities, its chief interest arising from the long period of illness which it causes in midsummer, when the farmers of Utah are busily engaged in cutting alfalfa and plowing sugar beets.

The studies into the cause and transmission of the disease show it to be due to a germ, *Bacterium tularense*, which is conveyed by six different insects: the blood-sucking fly, *Chrysops distalis*; the stable fly, *Stomox calcitrans*; the bedbug, *Cimex lectularius*; the squirrel flea, *Ceratophyllus acutus*; the rabbit louse, *Haemodipsus ventricosus*; and the mouse louse, *Polyplax serratus*. Only the first four of these are known to bite man. It appears possible that the germ may also enter through unbroken skin; for instance, that of the hands.

Correspondence

February 2, 1922.

To the Editor of the NEW YORK STATE JOURNAL OF MEDICINE:

DEAR SIR: I have been much interested in the quotation from Heywood Broun published in the NEW YORK STATE JOURNAL OF MEDICINE for January. Mr. Broun makes statements that, according to my experience, are not true. It is not true that "Professional Etiquette is the curse of the profession" any more than that social etiquette is the curse of society. Politeness is never a curse.

It is not true that if a patient were being fatally mistreated by one doctor, no fellow practitioner would consider it his affair to interfere. Consultants often advise methods of treatment of a different nature from that employed by the attending physician with good results. And if another physician has not the knowledge of the case furnished by examination and study he is in no position to decide whether the patient is being mistreated or not. Surely, we could not take the statement of the patient's family or friends that he was being mistreated; because they are in no position to have an opinion worth considering.

In my opinion the chief reasons that doctors refuse to answer questions put to them by newspaper reporters are: (1) that the newspaper reporter is likely to ask a question that cannot be answered; he doesn't know

enough to ask a sensible question, and (2) the doctor knows, feels or believes that his answer will not be printed as it was given; but that in the delightfully debonair and nonchalant way many reporters have, his words will be paraphrased and his statements will be garbled.

It is impossible successfully to controvert the statement that Dr. Abraham Jacobi took the stand that professional etiquette prevented him from telling the truth about Dr. Friedman. Dr. Jacobi is dead and cannot make his own defense. But knowing Dr. Jacobi, I am entitled to say that I do not believe that the statement is true. It is fairly well known by some that Dr. Friedman was brought to the United States by a newspaper syndicate; and that that syndicate advertised Dr. Friedman's discovery as the greatest benefit to mankind since the birth of Christ. It has been stated that the value of the news items sold to the subscribing newspapers by that syndicate was close to one million dollars.

Several years ago the writer was chairman of a committee of his County Medical Society charged with the duty of attempting to induce the newspapers in his county to discontinue the advertising of patent medicines. The newspaper publishers were very frank, and said that they published their papers for the purpose of making money. That the advertisements in question paid good money; more money than was to be had by publishing other advertisements. That there was a difference of opinion about the value of the cures advertised. That the opinion of a patent medicine advertiser or of a patient was as good to them as that of an educated physician. When we tried to get information from a neighboring city concerning a woman who had written a testimonial for a patent medicine which was advertised in our county, the physicians we wrote to said that they did not care to try to get us the information, because, on a previous occasion, a physician in that city had sent some information and the patent medicine concern had made a partially successful attempt to ruin his practice.

It might be possible for a newspaper to carry articles about physicians and their work; but so far I do not know of a newspaper in which it is done in a truthful, moderate and sane manner. The best papers do not undertake it, or at least indulge in the practice but seldom.

Medicine is a slowly progressing, complicated science. There is nothing sensational about it. The so-called discoveries are not discoveries in the ordinary sense; but the result of long hours of study, preparation, experiment, critical analysis, and observation. It would be leaning on a weak reed indeed to expect accurate medical information to be disseminated without the controlling influence of a well educated, well balanced medical man. He would probably take all the "news value" out of the medical items that arrive at the editor's desk.

JOHN M. SWAN, M.D.

475 Park Avenue, Rochester.

Brooklyn, Feb. 14th, 1922.

To the Editor of the NEW YORK STATE JOURNAL OF MEDICINE:

The remedy for the apparent lack of understanding between the public and the medical profession, now occupying the attention of Commissioner of Health Copeland and other physicians, is simple if properly applied. It lies in this. Let the public turn its attention from matters medical to matters legislative. The medical profession, through self-abnegation and achievement, has earned the right to public confidence. The legislature has done just the reverse of this. Let the legislature stop authorizing deluded people, fools, and dishonest persons, to professionally care for the sick and the problem is solved.

WILLIAM J. CRUIKSHANK, M.D., F.A.C.P.

NOTES FROM THE NEW YORK STATE DEPARTMENT OF HEALTH

At a meeting of the Public Health Council, held on February 7, 1922, a number of important amendments to the State Sanitary Code were adopted to take effect April 1, 1922. Under the amended regulations, malaria and Vincent's angina are added to the list of reportable communicable diseases. At the same time anthrax, Asiatic cholera, epidemic cerebrospinal meningitis, epidemic or streptococcus (septic) sore throat, malaria, plague, tuberculosis and Vincent's angina were added to the diseases for which specimens for laboratory examination are required to be taken. Another amendment requires that outbreaks of jaundice be reported by local health officers.

OPHTHALMIA NEONATORUM

At the same meeting of the Public Health Council a new regulation was adopted requiring the use of one per cent solution of nitrate of silver or an equally efficient prophylactic in the eyes of new-born children. This duty is imposed upon the physician, midwife or nurse who may be in attendance. Upon application by any physician the State Department of Health will furnish through the regular laboratory supply stations the solution required by this new regulation.

The Council also transferred ophthalmia neonatorum to the group of communicable diseases which must be reported directly by the attending physician, while continuing the requirement that laboratory specimens be submitted for examination.

DIPHTHERIA AND THE SCHICK TEST

The Department has commenced an active campaign in a number of upstate cities for the better control of diphtheria by means of the Schick test and inoculations of toxin antitoxin. Recent analysis of the statistics of diphtheria shows that the bulk of cases and deaths are occurring in the cities rather than in the rural districts. Schick testing and active immunization, therefore, offer the best means of improved control, since the ordinary methods of searching out missed cases and carriers and of bringing them under supervision are less practical in the larger cities. In Syracuse, Schenectady and Auburn large educational meetings have recently been organized with the co-operation of the local medical societies and various civic bodies in order to explain the nature and purpose of the Schick test and to further the preparation for testing and immunizing large numbers of school children. Approximately 3,000 children have thus far been tested in the Auburn schools, and many parents have withdrawn earlier objections to the procedure.

RECENT STAFF APPOINTMENTS

A number of changes in the staff of the State Department of Health have occurred during the last few months. Dr. John A. Smith of Saranac Lake, for several years secretary of the department, was compelled by ill health to resign in December, and the vacancy was filled by the appointment of Curtis E. Lakeman, of Larchmont, formerly Executive Secretary of the American Society for the Control of Cancer, and more recently connected with the public health activities of the American Red Cross and the League of Red Cross Societies in France and Switzerland.

Dr. Florence L. McKay, recently Assistant Director of the Division of Child Hygiene of the Federal Children's Bureau, has been appointed Director of the Division of Child Hygiene of the Department, succeeding Dr. M. Edgar Rose, deceased. Dr. McKay received her degree in medicine at Cornell in 1907, did post-graduate work at Edinburgh, and has an extended

record of hospital service and private practice in pediatrics and obstetrics.

Dr. G. Huntington Williams, a graduate of Harvard College and Johns Hopkins University Medical College, has been appointed a Sanitary Supervisor, and assigned to the district comprising Albany, Columbia, Greene, Rensselaer and Schoharie Counties. Dr. Williams also holds the degree of D.P.H. from Johns Hopkins, has been resident physician of the Royal Victoria Hospital and the Alexandria Hospital for Infectious Diseases, Montreal, and was for a time engaged in malaria control work in Spain for the League of Red Cross Societies.

As a result of the same Civil Service examination Dr. Bertrand E. Roberts has been appointed epidemiologist. Dr. Roberts is also a graduate of Harvard College and the Harvard Medical School, where he specialized in public health under Dr. Rosenau and Professor Whipple. He has had several years of practical experience as a city health officer, as a state district health officer in Massachusetts, and as an assistant surgeon of the United States Public Health Service.

County Societies

SCHUYLER COUNTY MEDICAL SOCIETY

SPECIAL MEETING, WATKINS, FEBRUARY 20, 1922.

The meeting was called to order at The Glen Springs, Dr. Albert Warren Ferris, President, in the chair, Dr. Rollin O. Baker, Secretary.

The meeting was made a reception to Dr. Stephen Smith of New York, tendered to him by the County Society and The Glen Springs, on the first day of the one hundredth year of his age.

Physicians from Detroit; Rochester, N. Y.; Elmira; Sayre, Pa.; Ithaca, Dansville; Syracuse; Oswego; and Nichols; beside members of the Society, to the number of forty-one were present.

After an introductory address by Dr. Ferris, in which he outlined the remarkable activities and successes of Dr. Smith's life, the guest of the evening responded in his happy reminiscent style, discussing anæsthesia and surgery of the days of his early medical youth. Addresses were given by Dr. Arthur W. Booth, of Elmira, on present-day surgery, and by Dr. Martin B. Tinker of Ithaca, on the Longevity of Physicians. An informal reception followed and a collation was served by The Glen Springs.

THE MEDICAL SOCIETY OF THE COUNTY OF TIOGA.

REGULAR MEETING, MARCH 7, 1922, WAVERLY, N. Y. SCIENTIFIC SESSION.

Dr. Walter E. Lundblad, Sayre, Pa., gave an address on Nephritis, in which he described the details of its diagnosis and treatment, aiming to give only such tests as could be carried out by the general practitioner.

Discussion opened by Dr. Guy S. Carpenter of Waverly.

Dr. Arthur W. Booth of Elmira presented a paper on "Tumors of the Female Breast."

Discussion by Dr. Donald Guthrie and Dr. Harry S. Fish, Sayre, Pa.

Following the Scientific Session, the meeting adjourned to a smoker given by the physicians of Waverly.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

PSYCHOANALYSIS: ITS THEORIES AND PRACTICAL APPLICATION, by A. A. BRILL, Ph.B., M.D., Lecturer, Psychoanalysis and Abnormal Psychology, New York University. Third Edition, thoroughly revised. Octavo 468 pages. Phila. and London: W. B. Saunders Co., 1922. Cloth, \$5.00 net.

NEOPLASTIC DISEASES. A treatise on Tumors, by JAMES EWING, M.D., Sc.D., Professor, Pathology, Cornell University Medical College. Second Edition, revised and enlarged. Octavo 1054 pages, 514 illustrations. Phila. and London: W. B. Saunders Co., 1922. Cloth, \$12.00 net.

INFANT FEEDING, by CLIFFORD G. GRULEE, M.D., LL.D., Associate Professor and Acting Head, Department Pediatrics, Rush Medical College. Fourth Edition, thoroughly revised. Octavo 397 pages, illustrated. Phila. and London: W. B. Saunders Co., 1922. Cloth, \$4.50 net.

Papers from the Mayo Foundation for Medical Education and Research and the Graduate School of Medicine, University of Minnesota, covering the period of 1915-1920. Octavo 695 pages, 203 illustrations. Phila. and London: W. B. Saunders Co., 1921. Cloth, \$10.00 net.

CLINICAL ELECTROCARDIOGRAPHY, by FREDERICK A. WILLIAMS, M.D., Section on Clinical Electocardiography, The Mayo Clinic, Rochester, Minn., and The Mayo Foundation, University of Minnesota. Octavo 188 pages, 185 illustrations. Phila. and London: W. B. Saunders Co., 1922. Cloth, \$5.00 net.

DISEASES OF THE EYE. A Handbook of Ophthalmic Practice for Students and Practitioners, by GEORGE E. DESCHWEINITZ, M.D., LL.D., Professor, Ophthalmology, University of Pennsylvania. Ninth Edition, Reset. Octavo 832 pages, 415 text-illustrations, 7 colored plates. Phila. and London: W. B. Saunders Co., 1921. Cloth, \$10.00 net.

ABDOMINAL PAIN, by Prof. Dr. NORBERT ORTNER, Chief Second Medical Clinic, University of Vienna. Authorized translation by WILLIAM A. BRAMS, M.D., formerly Lieutenant-Commander, Medical Corps, U. S. N., and Dr. ALFRED P. LUGER, First Assistant, Second Medical Clinic, University of Vienna. Rebman Company, New York.

A LABORATORY MANUAL FOR COMPARATIVE VERTEBRATE ANATOMY, by L. H. HYMAN, Department of Zoology, University of Chicago. The University of Chicago Press, Chicago, Ill. Net \$2.50; postpaid, \$2.70.

PROTEIN THERAPY AND NONSPECIFIC RESISTANCE, by WILLIAM F. PETERSEN, M.D., Associate in Pathology, University Illinois College of Medicine. With an introduction by JOSEPH L. MILLER, M.D., Professor Medicine, Rush Medical College, University of Chicago. New York: The Macmillan Company, 1922.

DISEASES OF THE DIGESTIVE ORGANS WITH SPECIAL REFERENCE TO THEIR DIAGNOSIS AND TREATMENT, by CHARLES D. AARON, Sc.D., M.D., F. A. C. P. Third Edition, thoroughly revised. Octavo 904 pages, 164 engravings, 48 roentgenograms, 13 colored plates. Phila. and New York: Lea & Febiger, 1921. Cloth, \$10.00.

CLINICAL TUBERCULOSIS, by FRANCIS MARION POTTENGER, A.M., M.D., LL.D. Medical Director, Pottenger Sanatorium Diseases of Lungs and Throat, Monrovia, California. With a Chapter on Laboratory Methods by JOSEPH ELBERT POTTENGER, A.B., M.D., Assistant

Medical Director and Director of Laboratory, Pottenger Sanatorium for Diseases of the Lungs and Throat. Volume I: Pathological Anatomy, Pathological Physiology, Diagnosis and Prognosis. Second Edition. 105 text illustrations and charts, six plates in colors. Volume II: Complications and Treatment. Second Edition. 65 text illustrations and charts, four plates in colors. C. V. Mosby Company, 1922. St. Louis.

BACTERIOLOGY: GENERAL, PATHOLOGICAL AND INTESTINAL. By ARTHUR ISAAC KENDALL, B.S., Ph.D., Dr.P.H. Second Edition, thoroughly revised. Octavo 680 pages, 99 engravings, 8 plates. Phila. and New York: Lea & Febiger, 1921. Cloth, \$6.00.

ESSENTIALS OF LABORATORY DIAGNOSIS, by FRANCIS ASHLEY FAUGHT, M.D. Seventh Revised and Enlarged Edition. Octavo 523 pages, 78 illustrations, 11 plates. Phila.: F. A. Davis Company, 1921. Cloth, \$4.50.

THE VITAMINS, by H. C. SHERMAN, Professor Food Chemistry, Columbia University, and S. L. SMITH, Specialist in Biological and Food Chemistry, United States Department Agriculture. American Chemical Society Monograph Series. The Chemical Catalogue Company, Inc., Book Department, 1 Madison Avenue, New York City, 1922. \$4.00 net.

Book Reviews

OPERATIVE SURGERY, by J. SHELTON HORSLEY, M.D., F.A.C.S., Attending Surgeon, St. Elizabeth's Hospital, Richmond, Va. 613 Original Illustrations, by Miss Helen Lorraine. C. V. Mosby Co., St. Louis, Mo. 1921.

The author has been careful, throughout the text, to particularly emphasize the importance of correlating physiologic and biologic processes with surgery. Intimately woven into the operative details, are pertinent physiological data, the more careful consideration of which (it is now universally conceded) is necessary for a closer approach to the restoration of normal function. On the basis of the latest findings from the biological laboratories, operative procedures are chosen, and as a result of these findings such operative failures as gastroenterostomy for all ulcers, reconstruction failures in gall-duct surgery where fascia, vein strips, or tubes are used, disappointments resulting from the use of foreign bodies in open reduction of fractures, are explained. In a large measure the work reflects the personal experience of the author, which is expressed in no uncertain terms. In the chapter on blood transfusion, for instance, a strong plea is made for direct transfusion by vascular suture, with the description of original technique.

It is a well written, generously illustrated, apparently carefully prepared book, treating its subject from a refreshingly original standpoint, the foundation of which is solid laboratory research. H. KOSTER.

ATLAS FOR ELECTRO-DIAGNOSIS AND THERAPEUTICS, by F. MIRAMOND DE LAROQUETTE, M.D., Medecin Principal, Chef des Services D'Electro-Radiologie de L'Afrique du Nord a Alger. Authorized translation by MARY GREGSON CHEETHAM, Dame Infirmiere Militaire. Foreword by ROBERT KNOX, M.D., Hon. Radiographer King's College Hosp. Paul B. Hoeber, New York. 1921. Price, \$4.50.

This small volume, a translation from the original in French, is of great value to the practitioner, who employs electricity, heat, light, massage and X-rays as an adjuvant to their treatment of disease. It furnishes a precise knowledge of nerve tracts, plexuses, and superficial nerves and muscles, with their motor points.

Also for the Specialist in Physio therapeutics, this book is of extreme importance, because here he has

in a concise way, the most useful anatomical data in nerves, muscles and joints, so that he may apply his physical modalities correctly and also a complete knowledge for the employment of muscle training and re-education. B. KOVEN.

OBSTETRICS AND GYNECOLOGY. Edited by JOHN S. FAIRBAIRN, M.A., B.M., B.Ch. (Oxon.); F.R.C.P. (Lond.); F.R.C.S. (Eng.). Obstetric Physician, St. Thomas's Hosp. Henry Frowde and Hodder & Stoughton, London, 1921.

Strange indeed would it be, if one could review a book of a thousand pages and find agreement with all the statements and deductions found therein. Stranger still would it be if one could agree, where, instead of a single author, the works of numerous authors were under review. Such is the case in reviewing this book, as numerous authors have contributed to its makeup.

Obstetrics and Gynecology, edited by John S. Fairbairn, is a book worthy to be added to the armamentarium of any medical man's library, as it reviews obstetrics and gynecology in a manner clear, explicit and simple. For the student it is invaluable as it gives him, in the shortest possible space, a clear mental guide to the conditions met in this particular field. To the teacher, who, although he may disagree with some of the articles, valuable lessons in explicitness and lucidity of presentation are here afforded. To the specialist, new thoughts or indeed old thoughts expressed in a new manner are always worthy of review.

Some of the articles are iconoclastic; old procedures hallowed by tradition, old theories validated by time, are brushed aside and a conception, more attune to our present scientific outlook, given.

In criticism, one would note that the left lateral position is the method advised, i.e. in delivery, while practically all of the American schools favor the dorsal recumbent position. In the reviewer's opinion, not enough emphasis has been laid on the value of rectal examination and a more thorough preparation of the vulva, and for the most part the indications given for inter-uterine douches we would strongly condemn. The question of endocrines is somewhat in abeyance and the illustrations are not, for the most part, examples of our best anatomical art.

Such criticisms need not detract from the worthiness of this book, for we can honestly recommend it to all interested in these subjects. G. W. P.

AN INTRODUCTION TO THE HISTORY OF MEDICINE. By FIELDING H. GARRISON, A.B., M.D., Lieutenant-Colonel Medical Corps, U. S. Army, Surgeon-General's Office, Washington, D. C. Third Edition, revised and enlarged. Octavo, 942 pages, 257 portraits. Phila. and London, 1921. W. B. Saunders Co. Cloth, \$9.00 net.

One emerges from a reading of Garrison's modestly titled introduction to the History of Medicine with an immense respect for the author's charm and power in the presentation of his fascinating subject. We say fascinating advisedly, for Dr. Garrison has forever dispelled any lingering notion as to the dryness of the theme. At his hands the reader is treated to a moving, dramatic panorama which is comparable with H. G. Wells' "Outline of History" in its breadth of vision, but which, by the way, makes that literary feat seem strikingly defective in that the latter strangely slights due consideration of the influence of medicine upon human progress to which point Garrison does full justice since "It is to the science and art of medicine that the human race must look if it is to perfect and fit itself for the gigantic tasks and problems which are bound up with its future development."

No one has ever brought the requisite equipment for the writing of such a work as this in fuller measure than Dr. Garrison for the book is a veritable mine of cultural allusions illumining every page. Because of his striking genius in this field no chapter is dull.

It would seem that Dr. Garrison can not recite historical facts of any sort without adequately investing them with their true significance in relation to the whole of medicine and of life. What in another book would be tabulation becomes on his page a thing of rich meaning, correlated with the healing and social drama of to-day.

It is a commonplace for a reviewer to say of a given book of merit that it should be in the library of every physician. One can say this of Garrison's book with a sincerity and emphasis not given to other works, for without the perspective afforded by this history in a manner not approached by any other, no physician can be said to be properly oriented in his profession; and should not this consciousness underlie all his endeavors and learning and philosophy of life?

The peculiar charm of Luke's narrative of the Christian revelation is due to the literary genius of that beloved physician and Grecian. The artist was united in the chronicler. This consummation repeats itself once again in the case of Garrison. A great theme, human progress as affected by medicine, has been flawlessly expounded, and a noble classic added to our annals. Best of all, this manner of book proves that the fine tradition and breed of the medical humanists have not, as yet, died out.

A. C. JACOBSON.

HEART DISEASES AND PREGNANCY. By SIR JAMES MACKENZIE, M.D., F.R.C.S., LL.D.; Edinburgh and Aberdeen F.R.S., F.R.C.P.I.; Hon. Director Institute Clinical Research, St. Andrews; Consulting Physician, Victoria, Burnley and London Hosp. Henry Frowde and Hodder & Stoughton. London, 1921.

A correct perspective, clinically at least, of any case of heart disease is something every physician should have but which only a few actually attain. Pregnancy, accompanied by heart disease, presents even greater difficulties, for the reason, as Mackenzie so aptly points out, the average obstetrician, whether he be the occasional obstetrician or a trained obstetric surgeon, does not possess accurate knowledge regarding the diseased or crippled heart. Many hearts are condemned which are perfectly capable under the strain of pregnancy and labor and, conversely, many are labeled O.K. that are notoriously incapable.

In this small volume, Mackenzie, in his very characteristic way, reviews his experience of forty years with "Pregnancy complicated by Heart Disease." In the beginning the normal changes in the maternal circulation during pregnancy, labor and puerperium are considered and then the changes in the diseased heart during these successive stages of the pregnant state are discussed.

Just as in all his cardiologic work, Mackenzie dwells upon the importance of the "Cardiac reserve." Murmurs, extra systoles, venous pulsations, certain arrhythmias, tachycardia, etc., etc., do not necessarily signify grave heart disease. Of far more significance is the "Cardiac reserve," as determined by a careful consideration of the heart at rest as compared with what takes place in the same heart after moderate graduated exercise. Murmurs, generally speaking, have very little significance in determining the "durability" of any given heart. The pre-systolic murmur of mitral stenosis, however, must be remembered as the exception.

The heart affection most frequently causing alarm in the pregnant woman is mitral stenosis following upon rheumatic fever. The sources of danger being due to a narrowing of the mitral office and embarrassment of the heart muscle with all the possibilities for failure that follows upon these deformed states.

The only form of aortic disease complicating pregnancy that need concern us is aortic regurgitation. Very often it becomes extremely difficult to determine the relation of aortic regurgitation to heart fail-

ure but, in general, it may be stated that when there is little or no enlargement and no "Corrigan" pulse with no or very little rise in blood pressure, pregnancy may be allowed. On the other hand, if there is considerable enlargement with a "Corrigan" pulse and "a distinct limitation of the response to effort," pregnancy should be forbidden.

Irregularities of the heart *per se*, in the author's experience, are of little or no clinical significance and hence are no bar to pregnancy and labor. On the other hand, true auricular fibrillation should be considered very dangerous in the presence of pregnancy and if rest and digitalis do not bring the pulse rate down to 70 or below or there are signs of œdema, and particularly of the lungs, or if the liver appears enlarged and there is orthopnea present, the pregnancy should be terminated forthwith.

The last two chapters of the book are well worth its existence. The first of these deals with the management of pregnancy complicated by heart disease, while the second presents in condensed form the crystallized ideas of a great clinician upon this very interesting subject of "Heart Disease and Pregnancy."

H. B. MATTHEWS.

MAYO CLINIC NUMBER. Vol. 5, Number 2, September, 1921. Published Bi-monthly by W. B. Saunders Company, Philadelphia and London.

Among the contributions to this number is an excellent study of primary cancer of the lung from the roentgenologic viewpoint by Russell D. Carman. Thirty-seven cases are presented with symptomatology, physical findings, roentgen and necropsy reports. There are some excellent reproductions of radiographic findings and gross specimens.

Plummer reports on 301 cases of cardiospasm with X-ray findings. He reports about 75 per cent of recoveries after mechanical dilatation. Willius gives an interesting study of atypical pain with angina pectoris. He gives twenty-two short case histories. Rowntree reports on 16 cases of diabetes insipidus with the differential diagnosis of polyuria. Sanford reports on 225 cases of bronchial asthma treated at the clinic in one year. The proportion of positive skin reactions was 1 to 4. Twenty cases reacted positively to food proteins. Magath discusses the various means of diagnosis of echinococcus disease, as complement fixation, cutaneous tests, precipitin tests. He reports in 25 cases from the clinic and on about 300 cases from the literature. Rosenow takes up his well-known work on focal infection and elective localization.

This number will well repay the reader if read from cover to cover.

H. J.

THE MEDICAL CLINICS OF NORTH AMERICA. Volume 5, Number 1, July, 1921. Published Bi-monthly by W. B. Saunders Company, Philadelphia and London.

This issue contains carefully written, instructive articles on various medical topics. It is difficult to choose any special article for comment, for one's judgment would cause a reviewer to speak especially of those articles more closely allied to his own class of practice.

Pericarditis with Effusion, by Williamson, presents a clear exposition with pictures and experimental data of this frequently overlooked condition. This is an unusually interesting and well written article. Bassoe has given a carefully written article on Endocrine Growth Disturbance—Acromegaly, Gigantism, Dwarfism. Culbertson describes the value of the endocrines in the treatment of certain gynecologic disorders, thus covering something of ductless gland therapy in this edition. Byfield presents some of the more practical aids in physical diagnosis by giving his own personal findings in the commoner methods of clinical observation. Each article, as already stated, is of value and this number continues the excellent papers of the former numbers of the Medical Clinics of North America. H. M. M.

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RESECTION OF BARTHOLIN'S GLANDS.

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and

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NEW YORK CITY.

A REPORT OF TWENTY CASES WITH BACTERIOLOGICAL AND SEROLOGICAL FINDINGS.

THE following is a group of cases from the gonorrhoeal wards of the Kingston Avenue Hospital, formerly connected with Riverside Hospital, which have been routinely studied, with a view to establishing, if possible, the value of removal of diseased Bartholin's glands.

We have recommended for a number of months the routine removal of all diseased Bartholin's glands on this service, feeling that they were a source of possible reinfection, and might be considered as latent foci.

Was this point of view justified? Was it desirable to remove all abnormally enlarged glands, subjecting the patient to an operative risk, no matter how small, and ignoring the possible physiological rôle of these glands, even if diseased?

Were the benefits derived from removal sufficient to warrant the procedure?

It was our desire to find out how many of these glands would really show gonococci, either by smear or culture, that led us to undertake the following routine examinations.

The cases that were selected for operation were cases where Bartholin's glands were pathologically enlarged after a sufficient period of time had elapsed to allow an acute process to resolve. Our experience has been that many acute infections of Bartholin's glands resolve entirely with expectant treatment, and it has been our aim in this service to exclude such cases, dealing therefore only with those cases, where, by the fact that the enlargement persists, a continued inflammation may be suspected, and a possible latent focus of gonococci exist.

As the gonococcus is so difficult to grow, and the question of culture media and various stain-

ing methods so important in establishing a correct diagnosis, it seemed scarcely worth while to undertake such an investigation, unless the cases should be subjected to the same uniform bacteriological and serological investigations which have been accomplished in this series.

There were twenty patients examined, eighteen of these were white, two colored; the ages varied from 17 to 30 years, with the majority in the early twenties. During their stay at the hospital 1 showed a positive smear of the cervix; 4 showed positive smears from the urethra; 16 showed the complement fixation. From the standpoint of clinical evidence 12 cases showed urethritis; 6 cases an involvement of Skene's glands; 14 cases showed cervicitis with or without erosions; 3 cases left salpingitis; 3 cases right salpingitis; 1 case double salpingitis; 4 cases had had a previous laparotomy.

All of the cases on the service on admission are classified as acute, subacute, or chronic, according to the intensity of the clinical symptoms, and this clinical diagnosis is forwarded to the pathologist with the first smears, cultures and blood tests.

This seemed a more accurate method of trying to estimate the duration of the infection in these cases, as the histories obtained are so inaccurate. Many of these women will not tell the truth, fearing that it may affect their treatment in some way. Others are utterly indifferent as to the date of their infection, and many are apparently honestly ignorant of when they contracted the disease, as the onset was probably very insidious.

Hence we have come to rely less upon the patient's history, and more on our own findings in classifying the patients. According to this classification we have had in this operative series 1 acute case; 3 subacute cases; 16 chronic cases.

However, as the diagnoses were made on the admission of those cases, it is important to mention that in every instance a period of time elapsed before the operation was performed.

The one acute case in the series did not come to operation until 115 days after admission, and appears in Dr. Williams' chart as subacute.

It may be of interest to mention in passing the reason for keeping this patient so long under expectant non-operative treatment. She was a girl of 17, with a very acute process, with involve-

ment of the right tube. The process was that of an endo-salpingitis, rather than the typical pyosalpinx.

Because of her age, and the nature of her involvement, we gave her the benefit of prolonged expectant treatment. She made an excellent recovery, with apparently little permanent change in the tube.

In regard to the relative frequency of involvement of the right and left Bartholin's glands: In the literature, some authors lay stress on the fact that the left is more frequently involved than the right as, for instance, Neuman reports in his statistics a series of 118 left side involved, 88 right side involved.

This opinion is not shared by all the writers. In our series we had 5 cases right side involved; 8 cases left side involved; 7 cases both sides involved.

As to our operative procedure, this has been somewhat at variance with the one usually described, in that we have used the vaginal route. Various gynecologists, in describing the technique of the operation, lay stress on having the incision through the skin, parallel with the labia majora.

We have found no mention of making the incision through the vaginal wall, and only one reason advanced as to why to avoid the vaginal route, this apparently being a fear that the healing would not be by primary union. (Stevens & Heppner, San Francisco.)

The various writers all emphasize that the operation, while insignificant, is a bloody one, and may call for considerable dissection. It was not until we searched the literature in more detail that further reason was found for this attitude of apprehension in regard to this operation. Sabatier, in his interesting monograph on Bartholinitis, cites the case of Hugier, who had an almost fatal hemorrhage following an excision of Bartholin's glands, and refers to other cases in the experience of his colleagues. The reason for this hemorrhage is due to the vascularity of the anatomical structures surrounding the glands.

Referring for a moment to the anatomy of these parts, it will be remembered that the relations of Bartholin's glands are as follows: Deeply (posteriorly) the gland is in relation with the middle aponeurosis; superficially above, with the superficial fascia, the bulbus vestibuli and constrictor vaginæ muscle, below with the inferior hemorrhoidal veins, externally with a branch of the internal pudic artery and internally with the vagina.

In using the external skin incision, it is necessary to cut down through the superficial fascia, retract or cut the spincter vaginæ, possibly the bulbus vestibuli before reaching Bartholin's glands.

By approaching the gland from the vaginal route, the gland is dissected out from under these structures, without cutting through them, as a



PLATE 1.

rule. In our series we have approached all the glands by the vaginal route, including the larger cysts and abscesses.

The method has been to retract the labia minora on the affected side, thereby opening the vaginal orifice as widely as possible, then with the thumb and index finger the infected gland is grasped and pulled as far as possible out into the vaginal orifice. Still holding the gland firmly, the incision, about 2 cm. in length, is made, over the height of the tumor, and parallel with the edge of the vaginal orifice.

If the gland is of the enlarged fibrous type, it is quite simple to cut down through this original incision, until the gland presents itself, then the gland can be firmly grasped with a tenaculum forceps, and the further dissection around the gland completed with blunt scissor dissection.

If there is either a cyst or abscess of the gland, it calls for much more careful dissecting, as it is most desirable not to rupture the sac.

During the dissection, especially on the deeper aspect of the gland, there is usually a good deal of venous bleeding. Occasionally a small artery will be severed, but this can be quickly controlled by a hemostat. It is the venous bleeding that gives the trouble and obscures the dissection.

We have found it best to try and get the gland out first, and then go to the wound systematically, and endeavor to catch all bleeding points. We wish to emphasize this, as early in our series it did not seem of so much importance, and we believe it was because of this that we had post-operative oozing, with the exception of the hemorrhage in case 4 (Table I), which will be described later.

TABLE I.

No. Case.	Age.	Syphilis.	Classification on Admission.	Completion Fixation Test.	Laboratory Findings		Clinical Findings				History Previous Operation.	Present Operation, Days After Admission.	Gland Removed.	Time of Operation, Minutes.	POST OPERATIVE NOTES.
					Cervix	Urethra.	Skene's Glands.	Urethra.	Tubes.	Cervix.					
1	17	-	A	+	-	+	+	-	Right Endo Salpingitis	-	-	115	Both	25	"Left labia major. Showed considerable Ecchymosis and œdema. Stitch removed from wound. Evidence considerable tension."
2	24	+	C	+	-	-	+	+	Left	+	-	4	Both	20	
3	30	-	S	-	-	-	-	+	-	+	-	27	Left	25	
4	25	-	C	+	-	-	-	+	-	+	-	12	Both	60	Notes, Dr. J. D. Smith: "Called to ward 8 P.M. Evidence, considerable hemorrhage. Patient taken to operating room to find source bleeding. Determined it come from right vulva. Douched hot lysol and tamponed. Hemorrhage checked. Exam. next day, Dr. E. D. Barringer, hemorrhage from wound? Right side? More likely from an area immediately above vulva orifice on right side where mucosa was cut during operation and not sufficiently sutured. No stitches removed, wound packed between sutures. No plug put in vagina. Cervix not bleeding."
5	20	-	C	+	-	-	-	+	-	+	-	51	Both	15	
6	19	-	C	+	-	-	+	+	-	-	-	50	Right	25	
7	21	-	C	+	-	-	?	+	Left	Erosion	-	17	Both	40	Notes, Dr. E. Von Bose: 1-13-21, 2 stitches removed on left side, haematoma; 1-14-21, Some oozing on left side; plug replaced; 1-15-21, Some oozing on left side; plug replaced.
8	21	+	S	As late as 2-19-21 +	-	+	+	-	-	+ Erosion	-	32	Left	10	
9	21	-	C	-	-	-	-	+	+ Both	+	-	39	Right	15	
10	28	-	C	+	-	-	-	-	Left	-	Median scar	23	Both	55	
11	22	-	C	+	-	+	+	+	-	Erosion	-	23	Left	25	
12	20	-	C	-	-	-	-	-	-	Erosion	-	32	Left	20	Nurse's note: "Moderate bleeding." Doctor not sent for.
13	20	-	C	-	+	+	-	-	Right	-	-	20	Right	20	
14	28	-	C	+	-	-	-	+	-	-	-	24	Left	20	Nurse's note: "Slight bleeding." Doctor not sent for.
15	26	-	C	+	-	-	-	-	-	Erosion	Abscess scar	17	Left	20	Nurse's note: "Moderate bleeding." Doctor not sent for.
16	24	-	C	+	-	-	+	+	?	+	Median scar. Appendix and tubes removed?	11	Left	20	
17	17	-	C	+	-	-	-	-	-	Erosion present when discharged. Improved	Both tubes removed?	16	Left	15	
18	22	+	C	+	-	-	+	+	Right	Erosion	-	16	Right	35	
19	21	-	C	+	-	-	-	-	Tubes had been removed? Mass in left fornix	-	Appendix and both tubes	75	Right	-	
20	17	-	S	+	-	-	-	+	-	+	-	27	Both	-	



PLATE 2.

Instead of the ordinary ligature, continuous plain cat-gut sutures were used around the bleeding points, drawing the tissues in the bottom of the wound as closely together as possible, obliterating the space left by the removed gland. It is the careful stopping of the hemorrhage and obliterating of this space that insures the success of this operation, and it is well worth while, in our opinion, to prolong the operation five or ten minutes, to see that it is thoroughly done.

All the cat-gut sutures are cut short, with the exception of one, which is cut 4 to 6 cm. long, and allowed to protrude through the wound, acting as a tiny drainage tube, to allow for any small oozing. The vaginal incision is then sutured, with three or four fine silk sutures, allowing the cat-gut to protrude at the lower portion of the wound. Silk has been used in preference to plain, chromic or silkworm gut, because the former did not last long enough, and the two latter were less comfortable for the patient.

It is important to get close approximation of the vaginal mucosa, and to tie the silk sutures firmly, expressing any possible blood from the wound before doing so.

The most serious hemorrhage in this series (see case 4) was due, apparently, to a small area of vaginal mucosa, which had not been included in the upper silk suture. No drainage, barring the cat-gut suture, has been used at the time of operation in any of these cases, including the larger cysts or abscesses.

One practical point which should be mentioned, is the proximity of the rectum. In dissecting out the larger cysts or abscesses, one may get very near the rectum without realizing it. It is a great help to slip a gloved finger into the rectum during the deeper dissection, if there is any question. This is especially true in cases of relaxed vaginal wall, or lacerated perineum where the normal relation of parts has been disturbed.

At the end of the operation we have made a routine of putting a firm gauze plug in the vaginal outlet. This creates a slight continued pressure over the wound, and has helped in controlling oozing. This plug is usually left in for about twelve hours.

The healing of the cases in this series has been uneventful, barring the cases where there has been post-operative bleeding, and the formation of clots, and in these cases the healing has been somewhat delayed. Our routine treatment is to give a daily douche, carefully cleansing the wound, and keeping on a sterile dressing.

The silk sutures have been removed on the sixth to tenth day. The wounds have healed in the majority of cases by primary union, the final scar in a number of cases being scarcely discernible.

MICROSCOPIC EXAMINATION OF SPREADS FROM THE VAGINAL TRACT

Spreads from urethra and cervix were made at time of admission and subsequently at intervals of one week during the patients' stay in the hospital. The spreads were fixed by heat and stained by a modification of Gram's method. The modified procedure was as follows: Stain for one minute in Stirling's solution of aniline gentian violet. Wash in running water. Place in Lugol's solution for one minute. Wash in running water. Decolorize by washing in acetone alcohol for ten seconds. Wash in running water. Counterstain by placing in a ten per cent solution of carbol fuchsin for ten seconds. Wash in running water. Blot carefully.

Williams' rules for smear diagnoses were followed in making the microscopic examination of our spreads:

1. *Positive spreads.*—Those showing leucocytes filled with morphologically typical gonococci decolorized by Gram's stain.
2. *Suspicious spreads.*—Those showing any suspicious Gram negative intracellular diplococci.
3. *Observation spreads.*—Those showing 50 per cent, or more, polymorphonuclear leucocytes, but no suspicious intracellular diplococci; or, those having the clinical symptoms of discharge and inflammation and showing less than 50 per cent polymorphonuclear leucocytes.
4. *Negative spreads.*—Those showing less than 50 per cent polymorphonuclear leucocytes, no suspicious intracellular cocci and no clinical evidence of the disease.

Table II shows the microscopic findings before and after operation. The operation had no effect upon the number of gonococci in pus, as shown by these spreads.

TABLE II.

Number	Course			Stained Spreads		Comp. Fix.		Size	Bartholin Glands				
	Subacute	Chronic	Tubes Injected	Before	After	Before	After		Con. Tis	Cystic		Cultures	
										Mucus	Pus	Spreads	Gonoc.	Others
1	+		+	+	-	+	+	9 x 16 10 x 7	+	-	-	-	+
2		+	+	-	-	Tr.	+	12 x 8	+	+	-	+	+
3	+		-	-	-	-	-	10 x 8	+	-	-	-	+
4		+	-	-	-	2+	3+	10 x 7 15 x 9	+	-	-	-	-
5		+	-	+	-	+	+	12 x 9 16 x 8	+	-	-	-	+
6		+	-	-	-	Tr.	Tr.	10 x 9	+	-	-	-	+
7		+	+	+	+	+	+	12 x 9	+	-	-	-	-
8	+		-	-	-	-	+	20 x 15 18 x 15	+	+	+	-	-
9		+	+	-	-	-	-	7 x 6	+	-	-	-	-
10		+	+	-	-	Tr.	Tr.	15 x 15 7 x 7	+	-	-	-	-
11		+	-	+	-	+	+	25 x 20	+	+	+++	+	+++
12		+	-	-	-	-	-	18 x 16	+	+	-	-	-
13		+	+	+	+	-	-	7 x 6	+	-	-	-	-
14		+	-	-	-	+	-	7 x 6	+	-	-	-	-
15		+	-	-	-	+	3+	20 x 18	+	+	-	-	-
16		+	+	-	-	+	+	8 x 7	+	-	-	-	-
17		+	+	-	-	Tr.	Tr.	10 x 7	+	-	-	-	-
18		+	+	-	-	4+	+	10 x 6	+	-	+	-	+
19		+	+	+	-	Tr.	Tr.	15 x 8	+	+	-	-	-
20	+		-	+	-	+	Tr.	10 x 7 10 x 6	+	+	-	++	-

COMPLEMENT FIXATION REACTIONS

The bleedings were made at intervals of one week throughout the patient's stay in the hospital. The serums were removed from the clots forty-eight hours after bleeding. This point has no significance and was adhered to merely to fit in with the routine of the hospital and laboratory. The serums were inactivated for thirty minutes at 56 degrees Centigrade before being tested. The tests were made as follows: .02 cc. and .01 cc. of undiluted patient's serum were mixed with the standard dose of gonococcus antigen. To this mixture was added the standard dose of complement*, and enough .9 per cent saline solution to bring the volume of mixture in each test tube up to .3 cc.

All diagnostic tests were made in duplicate.

Controls.—The standard dose of complement plus saline solution.

Gonococcus antigen titration.

Cell control.

A known gonococcus four-plus serum.

A known negative serum.

Fixation.—All tests and controls were placed in the water-bath at 56 degrees Centigrade for one hour to allow for the fixation of complement. Then, to each tube is added .2 cc. of sensitized cells. This dose of sensitized cells contains .1 cc. of five per cent suspension of sheep cells and two hemolytic units of anti-sheep amboceptor. The tests are all replaced in the water-bath until the system and antigen anti-complementary dose controls are hemolyzed. The reactions in all tubes are then read. The Citron method for reading is followed.*

CULTURAL STUDIES

The cultures from the Bartholin glands were made as follows:—Immediately after the removal of the gland by the surgeon, it was dropped into a sterile petri plate and the whole of it, except a small portion which was reserved for embedding, was cut into very small pieces with a sharp sterile scissors. These pieces were then distributed into several small tubes each containing about 2 cc. of vitamin agar† to which has been added a little horse blood (1 part in 80). This medium contained one and a half per cent agar, so, with the addition of the blood, the medium was of the required softness to allow an abundant growth of the gonococcus. These tubes of medium when prepared had been plugged with sterile rubber corks and after the pieces of tissue had been placed in them the top of the tube was slightly heated, then the cork was forced down into the tube, thus helping to create a partial vacuum.

The tubes were carried to the laboratory at body temperature, and plates of the same medium were inoculated with the material from the tubes, by streaking the crushed gland material over them. Spreads were also made from this material and strained by Gram. The plates and tubes were then placed in the incubator at 37 degrees Centigrade and examined in twenty-four and forty-eight hours.

The worth of this medium and this method of carrying have been tested out in two ways. First, some of the more capricious of our stock laboratory cultures were used in dilutions, and it was found that they were transported excellently in this way, giving abundant cultures. Second, cultures were made from a series of acute cases of

* Our method for the making and the interpretation of complement fixation tests and controls is given on pages 260-265. Park and Williams' Pathogenic Micro-organisms, 7th edition, 1920.

† Williams, A. W., Monthly Bull., Department of Health.

cervical urethral gonorrhœa in the Kingston Avenue wards and the results, compared favorably with those obtained by the usual culture medium, that is, glycerine ascitic agar.

Table II gives the results from this cultural study as well as from the complement fixation and direct smears.

CONCLUSIONS

1. With three out of twenty chronic cases showing positive smears and cultures for gonococcus, we feel that this operation is justifiable.

2. We feel that it should be recommended as a matter of routine on a venereal service where there is opportunity to do it under proper surgical conditions.

3. The chief danger is hemorrhage, which should be carefully controlled at the time of operation.

4. We have found no contra-indication for the vaginal route but on the contrary consider it superior to the external one, for the following reasons:

There is probably less hemorrhage, as the bulbous vestibuli is less likely to be injured. There is less dissection, as the vagina is the only structure to sever before reaching the gland. The healing process is as rapid, and we believe superior to the external route. There is no external scar or depression of tissue. In the majority of cases the vaginal wound is scarcely discernible.

5. We believe that this series has brought out the possible value of a persistent positive complement fixation reaction, as indicating that there is still an active focus of gonococci, even if smears and cultures of the discharges are negative. All three of our positive cases had given positive complement fixation reactions.

The remaining thirteen cases with positive complement fixations had had, during their stay in the hospital, involvement of either Skene's glands, urethra, cervix or tubes, any one of which might still be an active focus in a given case.

Further study of groups of cases with special reference to these undetected foci may establish the fact that the complement fixation test is the surest means of estimating when a cure has been effected, and that we are justified in keeping a patient under treatment as long as the test remains positive.

In closing, we desire to express our thanks to Dr. J. D. Smith and Dr. E. Van Bose, resident house physicians, for their fine co-operation and careful scientific aid in working out the details of this series.

EPIDEMIC JAUNDICE.

By HUNTINGTON WILLIAMS, M.D., Dr.P.H.,
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REPORT OF A LOCAL OUTBREAK AT COOPERSTOWN,
N. Y., DURING A STATE-WIDE EPIDEMIC.

THROUGHOUT the year 1921 and continuing in 1922 the New York State Department of Health has received reports and made studies of localized epidemics of jaundice occurring in widely scattered areas of the state, both rural and urban. During the same time similar outbreaks are known to have taken place in Ontario, Connecticut, and Maryland. The disease is fairly mild in character, without fatality in uncomplicated cases. An effort has been made by laboratory studies to identify the disease in New York State as spirochaetosis icterohaemorrhagica, described in 1915 by Inada, Ido and other Japanese investigators.¹ Up to the time of writing this effort has not been successful. Owing to their mildness, many of the cases are seen only once or twice by physicians, and as the disease is not reportable many cases have gone unrecorded. There follows a report of a clear-cut outbreak which took place during the past few months in and about the village of Cooperstown, N. Y.

Between October 1 and December 31, 1921, there occurred fourteen cases of epidemic jaundice among the thirty-six pupils in the Bowers-town school. (District School No. 5, about one mile from Cooperstown). There were also during this time four additional cases in members of the immediate families of these school cases. One of the four cases mentioned immediately above was that of Mrs. C. H., whose date of onset was December 16, 1921, and who was the mother of two of the school cases.

On January 3, 1922, Mrs. C. H., then markedly jaundiced, was taken three miles to the Thanksgiving Hospital, at Cooperstown, and on the following day was delivered of a seven-months child, who died in thirty-six hours. The child, the cord, and placenta were all markedly jaundiced. Strictest "typhoid technique" as regards clean hands, care of excreta, etc., was observed by the nurses throughout Mrs. C. H.'s stay in the hospital. During the month following the admission of Mrs. C. H. to the hospital, there occurred among the nursing staff of sixteen individuals eight cases of an acute infection, presumably epidemic jaundice. Seven of these eight sick nurses had cared either for Mrs. C. H., or for one of the other nurses who was sick with the same disease. The eighth case affected was the superintendent in charge of the nursing staff. There were no other cases of jaundice in the village of Cooperstown or in the surrounding territory during this time.

On January 11, 1922, a week following Mrs.

C. H.'s admission, Miss Wa. and Miss K., who had cared for Mrs. C. H., developed symptoms characteristic of the onset of epidemic jaundice, and on January 12, a third nurse, Miss Bl. who had cared for Mrs. C. H. did likewise. A week following this, on January 18, 1922, a fourth nurse, Miss Bkr. who had cared for Miss K. and Miss Bl. developed similar symptoms. The following day, January 19, Miss N., the superintendent nurse, had an abrupt increase of severity of characteristic symptoms, although she had suffered from vomiting and nausea for the week previous, but had continued to be on duty. Approximately a week after the onset of the last case described, a series of three new cases among the nursing staff made its appearance. On January 26, 1922, Miss Wl., who had nursed Miss Wa. on January 17 and 18 (including care of stools and vomitus) and who had been in slight contact with Mrs. C. H. also, complained of marked prostration and proceeded to develop the disease. Two days later, on January 28, Miss Bk. who had cared for Mrs. C. H. on January 6 and 7 and who had been in contact with Miss Wa. on January 18, had the onset of characteristic symptoms, and on January 30, Miss A. became ill with similar symptoms. She was the eighth and last nurse affected, and had been the nurse in charge of Mrs. C. H. from January 12 until January 30.

SYMPTOMATOLOGY.

The following is a picture of the general symptomatology for the twenty-six cases in this study. Jaundice was a constant feature in the eighteen Bowerstown cases, and in the three earlier nurse cases. The last five nurses to become ill never developed jaundice, but they were considered mild cases of the same disease because they showed the same clinical picture save for the absence of jaundice. The day of disease when jaundice appeared was recorded in ten of the twenty-one jaundiced cases. In six it is said to have been recognized on the third day, and in one case each to have appeared on the second, fifth, eighth, and ninth days. In the severest case, that of Mrs. C. H., the jaundice was still very deep, but fading, a month after its first appearance. It had not cleared up on February 19, 1922, two months after its appearance. More commonly the duration of jaundice varied with the severity of the disease and lasted from two days to a week.

Amongst the twenty-six cases studied, prostration was a very conspicuous symptom during the disease and especially during convalescence. It was recorded in nineteen cases and was very pronounced and lasted over two weeks in at least ten of these. Fever was recorded as an early symptom in thirteen cases. It was present but associated with whooping cough in two other cases, and was probably present in several others

as well as definitely absent in three cases. The febrile period as recorded did not exceed two days, with the exception of Mrs. C. H.'s case which was complicated by pregnancy, and where the fever remained for a month after onset. Characteristic symptoms are given in the order of their frequency as follows:

Vomiting	in 24 cases
Jaundice	in 21 cases
Constipation	in 21 cases
Nausea	in 21 cases
Headache	in 21 cases
Anorexia	in 20 cases
Prostration	in 19 cases
(Very marked in 10 cases)	
Bile stained urine	in 16 cases
(Not recorded in 10 cases)	
Abdominal pains	in 16 cases
Limb pains	in 14 cases
Clay colored stools	in 13 cases
(Not recorded in 12 cases)	
Chills	in 13 cases
Fever	in 13 cases
(Not recorded in 9 cases)	
Herpes	in 7 cases
Nosebleed	in 7 cases
Thirst	in 6 cases
Conjunctival congestion	in 6 cases
Menstruation (six nurses)	in 6 cases
Hiccoughs	in 4 cases
Diarrhoea	in 2 cases
Sore throat	in 2 cases

Other occasional complaints were—fainting and pain in the eyes, feeling sick as with grippe, dizziness, and slight roughening of the skin. One case, Mr. C. H., husband of Mrs. C. H., developed an acute Bright's disease, with edema of face, hands and ankles a month after convalescence. Albumen and cases were present in the urine. He had never had a previous nephritic attack. Among the nine hospital cases only two showed enlargement of the liver. It was normal in the others. The leucocyte count among the hospital cases varied between 7,000 and 16,000. The following differential blood counts were reported by the State Laboratory:

SMEARS TAKEN ON JANUARY 19, 1922:

	Lymphocytes	Large Mono-nuclears and Transitionals	Neutrophils	Basophiles	Eosinophiles	Unclassified
Mrs. C. H. ..	24.6%	1.3%	67.2%	0.0%	0.6%	6.3%
Miss Wa. ...	19.6%	0.6%	78.9%	0.3%	0.6%	...
Miss Bl.	25.7%	0.7%	73.1%	0.0%	0.5%	...
Miss Bkr. ..	31.6%	4.4%	63.2%	0.0%	0.8%	...
Miss N.	24.8%	0.4%	72.4%	0.0%	2.4%	...

SMEARS TAKEN ON FEBRUARY 1, 1922:

Miss Wl. ...	39.3%	2.3%	54.8%	....	3.6%	....
Miss Bk. ...	30.6%	1.6%	66.4%	....	1.4%	....
Miss A.	22.8%	1.0%	74.8%	....	1.4%	....

CLINICAL HISTORIES OF THE NINE HOSPITAL CASES.

Case I.—Mrs. C. H. Onset December 16, 1921. Jaundice from December 19, 1921, to February 19, 1922. Two children and husband had jaundice before she did. These two children attended the Bowerstown school.

Patient was admitted to hospital on January 3, 1922, in labor. Temperature $102^{\circ}.6$, pulse 144, respiration 22. Blood pressure 90 systolic, 30 diastolic. The patient was prepared for delivery by Miss Wa., who gave her an enema at this time, and who was present at the birth. The child was very jaundiced, also the cord and placenta. Between January 4 and January 10 the patient ran a temperature between 103° and 99° , and suffered from nausea, and had occasional bloody expectoration (January 6). Jaundice continued, and the lochia were yellow. The stools were clay-colored, and the urine was bile-stained. On January 10 the patient's temperature was $98^{\circ}.4$, but on the succeeding days until January 17 it rose above normal up to $102^{\circ}.8$. Since January 17 the temperature has been normal except that on January 21 it rose to 99° . The white blood cells were 15,000 on January 19. Jaundice remained deep at this time. The liver was slightly enlarged on January 21.

Case II.—Miss Wa., a nurse, had cared for Mrs. C. H. from her admission on January 3, 1922, until after her delivery the following day. Miss Wa. was admitted as a patient on January 17, although she had suffered from characteristic symptoms (abdominal pains, marked nausea, headache, hiccoughs) since January 11, 1922. On January 17 the patient vomited, and had a temperature of $99^{\circ}.6$, pulse 76, respiration 20. Nausea was very severe, and the patient very restless. On January 18 the temperature reached normal and remained so. Vomiting was severe and continuous. Even water caused nausea. There was no albumen in the urine on January 18 or 19 but it was dark and bile-stained. The stools were clay-colored. The white blood cells on January 19 were 9,000. Jaundice appeared in the sclera on January 20 and became marked and widespread during the following days. On February 2 her sclera still remained jaundiced. On January 21 the liver extended one finger-breadth below and six above the right costal margin. Frequency of urination was noticed during convalescence and prostration continued to be a marked symptom during this period.

Case III.—Miss K., a nurse, had relieved Miss Bl. in caring for Mrs. C. H. On January 11 she became ill with characteristic symptoms, and developed jaundice on January 16 which was marked for several days. She was admitted as a patient to the hospital on January 13, with temperature of $96^{\circ}.4$, pulse 84, respiration 20. Vomiting was a marked symptom. On January

14 the urine was dark color, without albumen. There was nosebleed. On January 15 the temperature was normal, and recovery was rapid, although jaundice persisted for ten days. The stools were clay-colored. The patient was discharged on January 17, and was put in charge of a ward of the other jaundice cases. On January 19 the white blood cells were 8,000.

Case IV.—Miss Bl., a nurse, had been in charge of Mrs. C. H. from January 4 until January 12, 1922, when she became ill with characteristic symptoms of epidemic jaundice. She was admitted as a patient on January 13, with temperature $102^{\circ}.2$, pulse 104, respiration 22, and complained of severe headache, chilliness, backache and pains through abdomen.

On that day the urine was pale amber colored and negative for albumen. For two days the temperature ranged between $103^{\circ}.4$ to 99° and since January 15 has been normal. Jaundice developed on January 20, but was slight during the next three days and then disappeared. The urine was of dark color on January 19 and 20, and was negative for albumen on both days. The stools were clay-colored. The white blood cells on January 19 were 7,000. Convalescence was marked by great weakness for a period of two weeks.

Case V.—Miss Bkr., a nurse, had cared for Miss Bl. and Miss K. during their illness. On January 18, Miss Bkr. had a characteristic onset of symptoms including nausea, vomiting, chills, headache and prostration, with sore throat, and thirst. The white blood cells on January 19 were 12,500; on January 20, 12,000; on January 22, 16,000; on January 23, 12,800; on January 27, 16,000; on February 2, 8,000; the red blood cells on January 22 were 4,760,000. No jaundice appeared in this case at any time but the urine was of dark color on January 20, and the stools were clay-colored. There was no increase or decrease in liver size on January 21. The patient showed no fever since her admission as a patient on January 19. Vomiting continued daily until February 2.

Case VI.—Miss N., the superintendent of nurses, had been in general touch with all the jaundice cases in the hospital but had not been caring personally for any particular case. From January 11 to 19 she had suffered from occasional vomiting, headache, chills, nausea and anorexia, with pains in the limbs—but had continued her nursing duties.

On January 19 there had been a marked increase in the severity of her symptoms. Prostration caused her to give up work and remain in bed and her nausea and vomiting were acutely exaggerated; and were associated with pains in the head, back, limbs and abdomen, so as to give the picture of an abrupt onset were it not for the mild premonitory symptoms of the previous

week. She was admitted as a patient on January 20, very nauseated. Temperature $97^{\circ}.6$, pulse 60, respiration 18. White blood cells were 10,000 on January 19. On January 20 they were 13,500 and on January 22 they were 10,000 with a red blood count of 4,000,000. She was menstruating at this time, which was her normal period. Her afternoon temperature on January 20 was $97^{\circ}.6$. On the following day she vomited greenish fluid, and complained of headache, pain in the back and legs with tingling. Her liver area was of normal dimensions on January 21. No jaundice appeared in this case, but the urine became bile-stained and the stools took on a clay color. Convalescence was marked by frequent urination at night and marked prostration.

Case VII.—Miss Wl., a nurse, had cared for Miss Wa. on January 17 and 18 (including care of stools and vomitus), and had been in slight contact with Mrs. C. H. also. She complained on January 26, 1922, of marked prostration and said that her work made her feel as if she were "lifting a load of bricks." She had had severe headache for three days previous to this and on January 25 had suffered from abdominal pains and herpes. The next day her limbs ached and this was followed by anorexia and nausea, aching in the eyes and on January 29 by vomiting. She vomited twice on February 1. There was constipation. The stools were yellow on January 30 and 31, and brown on February 2. The urine was normal in color and free from albumen on that day but later became bile-stained. The stools also became clay-colored. On February 1 the white blood count was 11,000. There was a faint rash on the arms at this time, a superficial tenderness chiefly where the body was in contact with the bed. There was no rise in temperature recorded at any time, and during the illness it varied between $97^{\circ}.2$ and $98^{\circ}.4$. Jaundice did not develop in this case, which was a mild one with an uneventful convalescence, save for marked prostration and slight nocturnal polyuria.

Case VIII.—Miss Bk., a nurse, had cared for Mrs. C. H. on January 6 and 7 and had been in contact with Miss Wa. on January 18. On January 28, Miss Bk. had the onset of her illness, which was characterized by chilly sensations, headache, anorexia, nausea, vomiting and abdominal pains. There was also dizziness, constipation, hiccoughs, and prostration. The stools and urine remained of normal color at first, and there was no albuminuria on February 2, but later the urine became bile-stained and the stools clay-colored. The white blood count on February 1 was 7,400. There was no fever and the temperature during the patient's stay in the hospital varied between $95^{\circ}.8$ and $98^{\circ}.6$. There was vomiting on January 29, 30 and 31. No jaundice appeared in this case. The urine was reported to be very scanty during convalescence, when there was also marked prostration.

Case IX.—Miss A. was the last nurse affected. She has been in charge of Mrs. C. H. from January 12 to January 30. Her onset of symptoms was abrupt on January 30, with chills, a fever of $100^{\circ}.2$, headache, anorexia, nausea, vomiting (only once), and marked prostration. Up to February 2 the stools and urine were of normal color, but later the urine became bile-stained, although the stools never showed a clay color. There was slight albuminuria on February 2. The patient began menstruation on that day. The white blood count was 13,700 on February 1. Since that day there was no fever. Jaundice did not appear in this case.

EPIDEMIOLOGY

The following facts are of interest in this outbreak:

Sex and Age Incidence.—Among the twenty-six cases studied there were twelve males and fourteen females. The youngest case was four years old and the eldest thirty-seven years of age. Seven cases were recorded as approximately twenty years old (nurses), two cases each at age of six, eight, nine, and ten years of age, and one case each at age of four, seven, eleven, twelve, thirteen, fourteen, sixteen, seventeen, thirty-two, thirty-three and thirty-seven years.

Contact and Incubation Period.—Every case except the original one gave a history of contact with a previous jaundice case. Only three of the eighteen Bowerstown cases failed to show intra-familial as well as school contact exposures. Owing to this multiple exposure to contact it is impossible to assign a definite incubation period to any cases, except the nurses, whose period of incubation appeared to be about one week.

Dates of Onset.—The dates of onset were: October 1, 20, 21, 25 (two cases), 28; November 10, 18, 21, (two cases), 24, 28; December 1, 2, 6, 16, 29 (two cases), and January 11 (two cases), 12, 18, 19, 26, 28, 30. This gives a total of six cases each for the months of October, November and December, 1921, and eight cases in January, 1922. There were no known cases before October 1, and the eight January cases were the Thanksgiving Hospital nurses. The maximum number of cases whose date of onset occurred in any one week was three, other weeks recorded two, one and no case onsets.

Multiple Cases in a Household.—The outbreak consisted of two circumscribed groups of cases. First there were fourteen cases among thirty-six pupils in the one-room Bowerstown school, and four additional cases in members of their immediate families. Later there developed eight cases in a small hospital among a nursing staff of sixteen individuals during the period of a month following the admission of one of the Bowerstown cases to the hospital. It is of interest to note that careful inquiry among the physicians covering both the rural and village populations

revealed no further cases of jaundice in either locality during the five months of the outbreak, with two exceptions. One was a case of chronic cholecystitis of several years' duration in a woman of forty, who had had previous similar attacks. She spent only two days in the hospital in mid-October, 1921, with severe colic and jaundice, but recovered rapidly without prostration, and did not show symptoms characteristic of epidemic jaundice. There were no other jaundice cases in her family. The other was an isolated case of the epidemic type a mile and a quarter north of Cooperstown with onset in mid-February, 1922, and having had no known contact with any of the earlier cases.

Among the eighteen cases of the original Bowerstown school group, who were naturally brought in contact one with another at school, jaundice occurred in single individuals in each of three households, in two members in each of two homes, in three members in one household, and in four members in each of two other homes. In only one case, the earliest one, named O'B., is there a history of a relapse, occurring two months after the initial onset. This boy was very ill and persisted in attending school when prostrated by the disease to the extent of having fainting spells in the school-room.

Among cases in a single household it is of interest to note that the dates of onset were often fairly widely separated, and not simultaneous, as might be expected in the event of a food-borne infection. Thus in the family of Mrs. C. H., there were four members giving the following dates of onset: November 21 and 26, December 6 and 16. In the four sick members of the Cl. family we find the following dates of onset: October 25, November 24, December 1 and December 2. Harry and William C. had their dates of onset on November 10 and 18 respectively, and Ella C., a cousin in a neighboring home, who had been associating with Harry had her onset ten days after his. In the same house with Ella C. her sister Nellie developed the disease five days later than did Ella, and in the two members of the Hy. family the onsets were three weeks apart. It was noted especially by parents and physicians locally that successive cases in a single household were very often just a week apart in developing.

In reply to questioning at Cooperstown as to any unusual prevalence of rats at the homes of cases, one of the eight Bowerstown households reported no rats, but the usual reply was that there were a few rats about the house or in the barn, but not more than in previous years. One rat was caught on the premises of the Cl. family and was sent to the State Laboratory for examination which proved negative. A stream known as Red Creek passes under the road just at the Bowerstown cross roads where school No. 5 and the general store are situated. The teacher in charge of the school said that during the fall of

1921 the children had worn a pathway between the school and the general store where they went very frequently to purchase candy. All the families affected lived within a two-mile radius of this cross roads and purchased their food at the same general store, but so did also an equal number of families living in the neighborhood who did not develop any jaundice cases. A smaller part of their food was also purchased by both these groups from the village stores in Cooperstown, a mile or more away. No satisfactory reply in regard to rats at the general store could be obtained, but it is not unlikely that there are rats in the immediate neighborhood. Dr. F. J. Atwell, the health officer at Cooperstown, states that the school water supply is kept in a large barrel tank which was filled by the children by pails from neighboring wells, due to last summer's drought, but that the drinking device was of the bubble variety and of an approved sanitary model. At the Cooperstown Hospital a rat had been seen on two occasions only during the month of January, 1922, and not during the previous six months. The hospital is situated about fifty yards from the Delaware and Hudson railroad tracks and two freight cars were seen standing a block away at the Dairymen's League creamery plant.

THE LABORATORY

Experimental work has been carried on by the Division of Laboratories and Research of the State Department of Health in connection with the nine hospital cases described above, with the hope of determining if possible the specific etiological agent in this disease. With this in view, blood, urine, feces, and throat cultures have been examined and without exception these different methods of investigation have failed to disclose the leptospira *icterohæmorrhagiæ*² or any other organism of etiological significance.

COMMENT

Epidemic jaundice appears first in the writings ascribed to Hippocrates. An extensive bibliography on the subject up to 1912 was published in that year by E. A. Cockayne.³ During the world war the identity of the jaundice occurring among certain of the troops on the French front with spirochaetosis *icterohæmorrhagica* was established by several investigators.^{4 5 6} It is reasonable, therefore, in a study of epidemic jaundice in the United States at the present time to seek the leptospira described as a definite causative agent by the Japanese workers. The finding of a leptospira in rats caught in Albany, which will produce jaundice in guinea pigs may be of etiological significance in regard to the jaundice cases occurring at the same time in that city. However, other possible etiological factors must be borne in mind. It is possible that every case reported above from Cooperstown might be the result of

rat-borne contamination of human food supplies. However, the picture given by these two isolated groups of cases, the Bowerstown school group and the nursing group, connected as they were by a single jaundiced individual, Mrs. C. H., is one of an infection spread from person to person by contact, and the possibility of some unrecognized organism or virus carried in the nasopharyngeal secretions should be considered, as was pointed out by Herrman.⁷ With this in mind, it is of interest that the laboratory results continue to be negative.

To Dr. F. J. Atwell, Health Officer at Cooperstown, we owe a debt of gratitude for having first recognized the unusual opportunity offered by his cases for an epidemiological study.

SUMMARY

During 1921 and in 1922 jaundice has been epidemic throughout New York State.

In October, November and December, 1921, there occurred, near Cooperstown, N. Y., fourteen cases of epidemic jaundice among thirty-six pupils in a one-room school, and in addition four cases in their immediate families.

The mother of two of these sick school-children, herself ill with jaundice, was taken three miles to a hospital for delivery. Within the following month, three out of a staff of sixteen nurses in this hospital developed jaundice, and in addition five other nurses became ill, but without jaundice.

Seven of the eight nurses affected had cared either for the ill woman or for a nurse ill with jaundice.

There were not other cases of epidemic jaundice in the vicinity during this outbreak.

The clinical picture as it appeared in these cases is similar to that usually reported in other outbreaks of epidemic (or infectious) jaundice in the United States and England.

Laboratory efforts to isolate leptospira icterohaemorrhagiae, or any other specific etiological agent, have so far proven unsuccessful.

It appears that the outbreak of jaundice here described was spread by contact from person to person.

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A PRACTICAL CONSIDERATION OF THE INTESTINAL FLORA IN INFANTS.*

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THE bacteriology of the intestinal canal of the infant has been investigated from different viewpoints for a great many years. This study is instructive, because intestinal flora are the important factors in the functioning of the digestive tract under normal physiological conditions.

More recently, these studies have been directed towards the types of intestinal flora and their influence upon the intestinal function. The correlation of these specific types to the chemical composition of the ingested food has been pretty definitely demonstrated.

It is a résumé of the present understanding of these types, which prompts this paper.

To Kendall, Torrey, Rutger, Porter and others are we greatly indebted for valuable information.

Improved technique and the employment of new culture media have greatly aided their work.

A few basic principles of bacteriology are necessary for a better understanding of the processes going on in the intestinal tract.

Bacteria are living organisms and require food for heat, energy and growth. One type, the saccharolytic, thrives best on a carbohydrate media. Another type, the proteolytic, thrives best on a proteid media. Fats play an unimportant rôle in the determination of the types or the multiplication of the flora. It is claimed that they never initiate fermentation or putrefaction, but may increase either one.

The type which thrives best on the carbohydrate media has acids for its end products of digestion. The type which thrives best on the proteid media tends to produce an alkaline state. But this type may, through proteid digestion, produce proteid end products that are toxic, and if toxic products are produced and absorbed, they can be the cause of marked constitutional symptoms. Both of these can markedly influence the intestinal function.

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The intestinal canal is a perfect incubator. All its conditions are favorable for the rapid growth and multiplication of its contained bacteria. These bacteria not only obtain their food supply from it, but they also excrete their waste products into it.

Intestinal bacteria, as a whole, can adapt themselves in quite a remarkable manner either to a proteid or a carbohydrate media. If grown upon a strict proteid media, their ability to digest proteid is encouraged and gradually intensified, and they become intensely proteolytic. If, on the other hand, they are grown upon a carbohydrate media, their ability to digest carbohydrates is encouraged and intensified, and they become active fermenters.

The most striking example of this adaptability is the colon bacillus. Some strains of colon bacilli have been identified which have lost their power to ferment sugars, but take this same strain and grow it upon a sugar media, and it will regain its lost function sufficiently to become an intense sugar fermenter.

Kendall says we must consider the intestinal flora as a whole, a physiological unit rather than a heterogeneous collection of bacteria.

In the nursing infant, whose food is composed of a relatively high percentage of milk sugar and a relatively low percentage of an easily digested proteid, we have a condition, frequently found, in which the whole intestinal tract is at all times permeated with sugar or its end products.

In this nursing infant we find the ideal flora, aciduric in character, and dominated by the bacillus bifidus. The bacillus bifidus is found predominant only in the breast fed. It is a protecting flora and undoubtedly has a great effect in bringing about the relative freedom, which the breast fed infant enjoys, from gastro-intestinal disturbances.

In an artificially fed infant, whose food is relatively high in proteid and has a variable sugar content, we find a flora, which more nearly approaches the adult type. In the upper bowel, with its more constant sugar content, we find an aciduric flora, dominated by the bacillus acidophylus. In the lower ileum or colon, with its markedly variable sugar content, we find a flora, the colon group, which will adapt itself either to the carbohydrate or the proteid media.

By simple laboratory tests we can identify three types of flora: First, the fermentative flora; second, the proteolytic flora; third, the normal or facultative flora

First. The fermentative flora, grown upon a carbohydrate media, will readily digest the carbohydrates with the formation of acids, but if grown upon a proteid media, will not produce digestion or proteolysis. It is characteristically aciduric. As regards these fermentative flora, there should be a differentiation in the use of the term "aciduric" flora and "fermentative" flora. The for-

mer, the aciduric, never implies an excessive acidity, whereas the latter, the fermentative, does imply an excessive acidity. In the breast fed we find the ideal aciduric flora, dominated by the bacillus bifidus, while in the artificially fed, we have usually a mildly proteolytic flora. The ideal flora in the artificially fed would be an aciduric flora, dominated by the bacillus acidophylus.

The normal acid producing bacteria of the breast fed infant are the bacillus bifidus, especially, and the bacillus acidophylus. These, through cultivation, do not produce abnormal acid states or abnormal fermentative states. Such an abnormal state of acidity or fermentation demands the presence of other bacteria, such as the colon bacilli, or the bacilli Welchii.

Second. The proteolytic flora will produce rapid digestion upon a proteid media, but only a slight change upon a carbohydrate media. The tendency of the bacterial metabolism of this type is strongly putrefactive.

Third. The normal, or facultative flora, are not excessively proteolytic or fermentative. As an example of this group, we have the bacillus coli, which is both fermentative or putrefactive, depending upon the media.

Can we associate clinical symptoms with an altered intestinal flora? Probably the most conspicuous and the most easily recognized condition is the so-called carbohydrate fermentation. Its symptoms, so commonly observed, are sour smelling, loose, acid stools, which excoriate and redden the buttocks. This condition is most commonly associated with a normal flora implanted upon an abundance of sugar. This provides a fertile soil for an excessive acidity, in reality a fermentation, due to the fermenters, the colon bacilli of the lower bowel.

Crystalizable sugars, such as cane, milk, malt sugar and glucose, have a double action. They act as cathartics through irritation and osmosis. Because they act as cathartics, if the dose is sufficiently large, they are hurried into the colon. Here the colonic flora, the colon bacilli, act progressively to ferment the sugars and to form acids. These acids, through irritation, further stimulate peristalsis. As a result of these two causes we have the sour, loose stools.

Having thus built up an excessively fermentative flora, the explanation is clear why a simple carbohydrate starvation for twenty-four hours does not always alleviate the condition.

The more specialized this function has become, the longer it naturally takes to suppress it.

Often this ability to ferment sugar applies to one particular form of sugar. By changing the kind of sugar, we may diminish the fermentation.

As mentioned above, an excessive fermentation may be brought about by anything which will exaggerate peristalsis in the small bowel or interfere with the digestion and absorption of sugar.

That is, the food may not contain an excessive amount, but the sugar, all there is of it, is thrown so rapidly into the colon, where it ferments, that we have the so-called dyspepsia with fermentation.

Dextrine and lactose are most active in increasing the bacillus bifidus and the bacillus acidophilus, particularly the latter. With their multiplication, the bacillus Welchii are apt to decrease.

On a carbohydrate diet, the intestinal flora are fermentative and occupy almost all the levels of the intestinal canal, but, with a mixed diet, the flora at different levels differ markedly.

Given a proper aciduric state, there will be a decrease not only of the bacillus Welchii and the proteolytic flora, but also a decrease in the gas-producing flora, dominated supposedly by the streptococcus.

The symptoms associated with proteolytic flora are now receiving the most attention by investigators. Test tube experiments show that the end products of proteid digestion are often toxic. As an example, it has been shown that a toxic albumose has been identified as the cause of intoxication in bowel obstruction. Further, it has shown, that vaso-motor depressants have been identified as one of the end products of imperfect proteid digestion. This latter explains the vaso-motor symptoms so often prominent in proteid intoxication.

The adult intestinal intoxication, or auto-intoxication, has been debated for years. Metchnikoff recognized the altered flora developed in this condition, and attempted to correct them by implanting a fermentative organism, the bacillus bulgaricus.

The bacillus bulgaricus has been cultivated for years in milk, but has never been isolated from the faecal flora. This is so, because it could not be expected to readily adapt itself to a new media and new surroundings.

In recent years, more was expected from the bacillus acidophilus, a natural habitant of the bowel.

It is generally conceded that little can be accomplished by feeding living cultures, such as the bacillus bulgaricus or bacillus acidophilus. *Results can only be obtained by changing the character of the food to one upon which the intestinal bacteria grow.* An increase of the carbohydrates, sufficient to give a plentiful supply in the colon at all times, is necessary to encourage the acid forming bacteria.

In the adult, it is often a long-drawn-out process to alter the type of the intestinal flora dietetically, because the existing type has become so firmly fixed. Often the effort is doomed to failure.

On the other hand, in the young babe, the type of flora has not become so firmly fixed, and it can therefore readily respond to a change of food.

This fact has been recognized for many years by pediatricians and has been applied by them in gastro-intestinal conditions.

Foods differ in their ability to encourage an aciduric or a proteolytic flora.

Of the carbohydrates, it has been found that dextrine most readily converted a proteolytic to an aciduric flora. Milk sugar stands next. Maltose, saccharose and dextrose have only a moderate ability, while most starches have a very feeble effect.

Wheat bread, because of its dextrine content, has the ability to develop the bacillus acidophilus to 90 per cent, even 95 per cent of the flora of the intestinal tract, and can crowd out all other bacteria except the streptococcus. If, on the other hand, one wishes to use a carbohydrate without particularly increasing the bacillus acidophilus, one can secure this result by using rice. The converse is true, that rice does not inhibit the development of the proteolytic flora as does wheat.

As regards proteids, meat readily establishes a proteolytic flora. Casein and fish establish it with greater difficulty. Vegetable proteids have little or no effect. Because proteolytic or putrefactive processes are most marked in the ileum, explains why carbohydrates are required to produce a combatting flora, and also, why the colon washes are of no avail to influence a process too high up to be reached.

Morse, Porter and others have recently directed attention to conditions associated with proteolytic flora in children. In older children, the symptoms resemble so closely those seen in the auto-intoxication in adults, that they will not be discussed.

To Porter and his co-workers we are indebted for a classification of symptoms due to *proteolytic flora*. We have used this classification at the Children's Hospital for the past year, have followed his technique, have checked up his findings, and have found it most useful in suggesting the line of treatment of our cases.

His classification is as follows: First, a mild type; second, a fulminating type; third, a grave chronic type; fourth, a putrid diarrhoea in infants.

The mild type corresponds to the state Czerny calls "milk injury." Finkelstein calls it "disturbance of balance." Before we knew anything about intestinal flora clinical experience had taught us that these cases very readily and very promptly responded to the addition to the diet of dextrine as present in malt soup or dextrinized starch.

The fulminating type presents symptoms of sudden profound intoxication without diarrhoea. This is a type of case which is most perplexing because of its failure to present a cause of proper ratio to the seriousness of the symptoms, the underlying condition often not being appreciated.

The grave more or less chronic type occurs in older children, ten to twenty months old, there being frequent stools, progressive loss of weight, etc.

All these four types of cases have a flora which is *intensely proteolytic*, as shown by laboratory tests, and are types of cases not infrequently unrecognized. Improvement is most quickly and most surely noted when there is an alteration of the flora from the proteolytic to the fermentative type.

What has interested us most during the past summer has been the type of flora accompanying the infectious diarrhœas. At the outset the flora are usually mildly proteolytic. During the course of the disease we have noted that, if we adhered to a very strict proteid diet, the stools have become foul smelling, that symptoms of proteid intoxication have manifested themselves, and that the flora, upon cultivation, have showed marked proteolytic.

Should we, then, in these cases, use a strict carbohydrate diet, or a strict proteid diet? Both lines of treatment have their advocates and both claim success.

From laboratory tests, and from results of clinical experience, it has been shown that carbohydrates are indicated in such cases. But the amount of sugar must be carefully regulated, because, if too much is given, it is thrown by the exaggerated peristalsis too rapidly into the colon. There the process may be carried too far. Only enough sugar is needed to lessen the proteolysis, but not enough to be acted upon by the colonic flora and produce acids. For, should acids be produced, they will stimulate the existing exaggerated peristalsis, and by increasing the number of stools, increase the water loss. This water loss is already of serious consideration in these cases. On the other hand, by withholding the carbohydrates too long, we favor the development of a proteolysis, which might add to the intoxication.

It would then seem reasonable to expect that the best results could be obtained if we used a mixed diet, from which the irritating or fermenting sugars were omitted. We have used with excellent results skimmed lactic acid milk diluted with dextrinized gruel. In this mixture both the proteid toxic end products and the carbohydrate fermentation are avoided as far as possible. The proteid of the diluted lactic acid milk is not in sufficient amount to encourage proteolysis. The fermentation of the carbohydrates is controlled in two ways, (a) the organisms which exhibit unusual intestinal activity do not, as far as known at the present time, thrive in the presence of lactic acid; and (b) the dextrinized gruels, which are carbohydrates by choice, are non-irritating and are not readily fermentable.

Either of these two elements can be increased or decreased, depending upon the character of

the stools. If the stools become acid, the gruels are decreased and lactic acid milk increased. If, on the other hand, the stools become foul smelling, the lactic acid milk is decreased and the dextrinized gruel is increased.

In this brief paper we have not attempted to discuss in detail all the various phases of intestinal bacteriology. We have attempted to bring to your attention a few pertinent facts, which have aided us greatly in the feeding of infants and in the treatment of their gastrointestinal disturbances.

To summarize:

First. Bacterial end products are either harmless acids, or are split proteid products, which are often toxic in nature.

Second. The infantile flora differ from the adult flora in that the type has not become fixed. Thus it can readily adapt itself to a change of food.

Third. Through improper feeding the type may become either excessively fermentative or excessively proteolytic. These types can be differentiated by culture media, and are often associated with clinical symptoms.

A. CASE OF STREPTOCOCCUS HEMOLYTICUS MENINGITIS AND BACTERIEMIA — OPERATION AND RECOVERY.*

A CASE OF SEVERE MENINGITIS—OPERATION AND RECOVERY.

By WESLEY C. BOWERS, M.D., F.A.C.S.,
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CASE 1.—An Italian laborer, aged 34, was admitted to Bellevue Hospital in December 1920, complaining of headache, dizziness and pain in the left ear.

He stated that the ear began discharging fifteen months previous to admission. Three months after the ear began to discharge, the left side of his face became paralyzed. On the day his face became paralyzed he was admitted to the New York Eye and Ear Infirmary and a mastoid operation was immediately performed. Since the operation, facial paralysis, complete deafness and discharge from the wound had persisted.

Six weeks before his admission to Bellevue, he began again to have pain in the left ear, with headache and dizziness. Swelling and tenderness behind the ear developed several days before admission.

The family and past history were negative. The physical examination showed a somewhat undernourished man about thirty-five years of age mildly, acutely ill.

No rigidity of the neck.

* Read at the Annual Meeting of the Medical Society of the State of New York, at Brooklyn, May 5, 1921.

Eyes: paralysis of left frontalis and orbicularis palpebrarum; is unable to close eye or wrinkle forehead. Pupils react to light and accommodation and are equal. Fundi negative.

Face: draws to right; atrophy of left facial muscles; no motion in muscles of left side of face.

Heart, lungs, abdomen: negative. Reflexes: patellar present and equal; Kernig, negative.

Ear examination: right tympanic membrane normal; left ear-swollen, red and tender over zygoma, above and back of the ear and down into the neck. Sinus leading into old mastoid cavity. Profuse, thick, yellow discharge coming from an edematous meatus. Fundus of meatus filled with granulations and pus. Totally deaf in left ear. No nystagmus; no spontaneous past-pointing; no response to caloric tests on left side. Temperature 101°, pulse 100, respiration 20.

From the examination it was evident that the patient had a large abscess over the old mastoid wound extending well down into the neck; that he had a dead labyrinth; and that the indications were for immediate operation. X-ray showed evidence of resection of the left mastoid; no necrosis in the neighborhood of the resected area. The blood count on admission was: Leucocytes, 16,600; polynuclears, 88 per cent; transitionals, 2 per cent; lymphocytes, 10 per cent.

Operation: a large incision through the edematous tissue which was about $\frac{3}{4}$ inch thick, was made posterior to the original incision over the mastoid, and several ounces of pus were evacuated. The whole mastoid cavity was filled with granulations and pus. All the bone over the middle fossa and all the bone over the posterior fossa, including the sinus, was missing. The dura was covered by granulations. Part of the posterior wall of meatus was missing; the entire floor of the meatus and the remains of the posterior wall of the meatus—including the styloid process—came away in one large sequestrum about one inch in length. No part of the labyrinth could be identified. One large sequestrum, about half an inch in diameter, came away from the region of the labyrinth. In this piece, the groove of two of the canals could be recognized. Beyond this point three or four other sequestra were removed, until there seemed to be nothing left of the petrous bone but the anterior wall. The carotid artery was not felt. Upon removing the last and deepest sequestrum, an opening in the dura was seen, at the apex of a tit-like protrusion of dura, through which the remains of nerves passed and from which spinal fluid flowed. This opening was closed off by iodoform gauze. In this cavity there was no bone except that covering the carotid artery and the glenoid fossa. There was a shelf of bone overlying the sinus which was necrotic. In attempting to remove this, the sinus was opened. The bleeding was controlled by packing gauze under the edge of bone at the

site of the opening into the sinus. The meatus was not enlarged; the wound was packed wide open.

Previous to operation, the temperature had been between 99° and 102°. The day after the operation the temperature came down to 101.1° and then went to 105.3°. The patient complained of very severe headache, but had no rigidity of the neck and no Kernig. Tache cerebral was present. Fundi of the eye showed the veins slightly overfull and very tortuous. Spinal puncture: slightly turbid fluid; moderately increased pressure; cell count, 340 cells to the cm.; 92 per cent polymorphonuclears; 8 per cent transitionals; globulin; (albumin); Fehling not reduced; butyric (precipitate); culture negative.

Second day post-operative, the temperature came down gradually to 101.2° and the patient complained bitterly of headache. He had some rigidity of the neck and a slight Kernig on both sides. Spinal puncture was performed this day but count could not be made because of blood in the fluid.

Third day post-operative, temperature was between 101° and 102.3°.

Fourth day post-operative, the spinal fluid was slightly turbid, under moderate pressure; 840 cells to the cm. (an increase of 500 cells in three days); globulin; culture showed streptococcus hemolyticus. The fundi of the eyes showed slight passive congestion with somewhat overfull veins. The mastoid wound was clean.

The fifth day post-operative, the temperature came down to 100.3° and went up again to 102.2°. The eye grounds were the same. The patient complained of exceedingly bad headache. There was some rigidity of the neck; the Kernig was about the same. The gauze was removed from the sinus; no bleeding followed. There was no spinal fluid in the wound.

The sixth day post-operative, the temperature came down to 99.4° and went up to 104.1°. Spinal puncture showed fluid under increased pressure but count could not be made because of blood in the fluid. There was severe headache, rigidity of the neck but no Kernig.

The seventh day the temperature came down to 101.2°, going up to 103.3°. The spinal fluid was almost clear with moderately increased pressure; the cell count was 140 cells per cm.; globulin; Noguchi, faint precipitate; culture showed streptococcus hemolyticus. The wound was clean and granulating well.

The eighth day post-operative, the temperature came down to 99.1° and the patient seemed much better. The headache and rigidity were improved. On the ninth, tenth and eleventh days, the temperature gradually climbed to 104.4°. The blood count was: leucocytes, 10,800; polynuclears, 80 per cent; transitionals, 2 per cent; lymphocytes, 18 per cent. Blood culture was taken.

The twelfth day post-operative, the temperature ranged from 102.3° to 104.3°. The spinal fluid showed no increase of pressure; count could not be made on account of blood; globulin. The headache was gone; there was no rigidity of neck or limbs.

Thirteenth day, the temperature came down to 100° and went up to 104.2°. The wound was clean—the granulations healthy. The blood culture made five days before was negative.

Fourteenth day, temperature came down to 100.4° and went up to 104°. The fifteenth day, down to 99° and up to 103.1°. Sixteenth day, down to 98.3° and up to 100.3°. The eye-grounds were still normal and the patient felt very well. On the eighteenth and nineteenth days the temperature gradually came down to 99.2°. On the nineteenth day, the blood culture was positive for streptococcus hemolyticus.

The twentieth day post-operative, the temperature was between 100.8° and 102°. The jugular was ligated. The necrotic bone was removed from over the sinus which was entirely obliterated by the thrombus. The clot was curetted out below and above until free bleeding was obtained.

In the next two days the temperature came down to normal, then went to 102°, for six succeeding days, and then to normal.

On the twenty-fifth day post-operative, the temperature went to 101° and the patient complained of pain in the other ear. The right ear drum had ruptured in the night and there was a profuse discharge. The fundus was considerably narrowed down and there was marked mastoid tenderness. Myringotomy was performed. X-ray showed the right mastoid cloudy. Culture showed staphylococcus. The temperature gradually came down and during the six days following the myringotomy all mastoid symptoms gradually disappeared. On the forty-seventh day after the mastoid operation and twenty-two days after myringotomy, the right ear had entirely cleared up.

On the sixty-first day after the mastoid operation and the thirty-first after the sinus operation, the patient was discharged from the hospital. The jugular wound was entirely healed. The mastoid wound was healed with the exception of a perfectly healthy granulating surface about half an inch in diameter and a quarter of an inch deep, the wound having healed from the bottom up. The pulse variations throughout the illness had been in correspondence with the temperature.

The New York Eye and Ear Infirmary report shows the following facts: eleven months previous to his admission to Bellevue, the patient had entered the infirmary with a history of three weeks' loss of hearing, tinnitus, vertigo and discharge; there was no nausea nor vomiting; occasional headaches; no previous ear trouble. There was marked tenderness and profuse discharge.

The operation showed a thick cortex; subcortical cells full of organized granulations and pus; no dura exposed; sinus exposed from knee to jugular bulb; tip removed; jugular bulb cells full of granulations and pus, extending under facial canal and semi-circulars. The antrum and semi-circulars were small. A portion of the posterior and horizontal semi-circulars was gone. The facial nerve was exposed entirely. The patient remained in the hospital for eleven days during which time the temperature was between 98° and 100.2°. The day before he was discharged his temperature was 100.2°. Most of the time his pulse was about 65.

The remarkable facts about this case are; first, that the patient could have so much destruction of bone and still continue at work and feel so well; second, that he could have streptococci in the spinal fluid and blood with such approximately mild symptoms and eventual recovery.

Case 2.—On February 21, 1916, a boy, aged 12, was admitted to St. Luke's Hospital, with the diagnosis of meningitis and acute otitis media.

His history showed that five days previous to admission to the hospital he had developed a pain in the right ear and that the ear began to discharge shortly after the pain began. He also had pain in the right eye and some dizziness. On the day of admission he developed very severe headache. He vomited three or four times the previous three days. There had been no previous trouble with the ears.

Examination showed him to be a poorly nourished boy, anæmic in appearance, with marked rigidity of the neck. The right pupil was larger than the left, but both pupils reacted to light and accommodation. There was spontaneous nystagmus to the right. There was marked Kernig; no Babinski; knee jerks somewhat diminished. The right mastoid was moderately tender; there was slight discharge from the meatus. The tympanic membrane was bulging and reddened throughout; the hearing was normal; caloric normal.

Blood count: Leucocytes, 27,500; polynuclears, 92 per cent; transitionals, 8 per cent. The spinal fluid was very cloudy and under markedly increased pressure. The cell count was 2,600 cells to the cm., polymorphonuclears, 84 per cent; lymphocytes, 16 per cent. The temperature was between 102° and 104°.

Operation showed: a mastoid filled with granulations but very little softening of bone. The sinus was very far forward; the dura very low down. Because of the meningeal symptoms I removed all the bone over the middle fossa but the dura looked healthy. I then removed the bone over the posterior fossa and over the sinus. This, too, looked healthy. I extended my removal of bone backward over the posterior limb of the sinus and opened into an abscess cavity about half an inch in diameter, containing thick pus under considerable pressure. A culture from this pus showed long-chain streptococcus.

For the next two weeks the patient's opisthotonos and Kernig were extreme. His temperature, however, gradually came down to normal during these two weeks and the cell count in the spinal fluid fell to 33 cells per cm., all mononuclears. Spinal puncture was performed every day for five days and then every other day for three weeks after the operation—when the cell count had become normal and the opisthotonos and Kernig had disappeared. The boy was discharged from the hospital thirty-five days after operation. He was seen three years later, at which time he was normal in every way.

These two cases illustrate the fact that not all cases of meningitis, whether organisms are present or not, are hopeless; and, also, the value of repeated spinal puncture.

In the case with streptococci in the spinal fluid, there was considerable constitutional reaction as shown by the temperature; but the rigidity was not great and the cell count was not over 850 cells per cm.

The case with no organisms in the spinal fluid had very little temperature but the opisthotonos was extreme; the Kernig most marked and the cell count high—2,600 per cm. The first was undoubtedly a case of true meningitis, infected through the opening in the dura. The second case was one of so-called serous meningitis in which the infection remained external to the dura, but the inflammatory reaction of the dura caused an exudation of serum and inflammatory products which was so abundant as to cause marked meningeal pressure. In both cases, the repeated spinal puncture undoubtedly had a great part in determining the outcome.

ficially fed babies is a serious indictment of the willingness and efficiency of the medical profession in its campaign to reduce infant mortality—or else statistics are valueless. There is no third conclusion possible. For these show at the lowest a mortality over four times as great for bottle-fed as for breast-fed babies.¹

It has been shown that a large majority of the babies that are weaned prematurely are taken off the breast during the first month of life,—by far the greater proportion during the first two weeks of life.² This puts the responsibility squarely up to the obstetrician and the general practitioner, in the first instance. For while it has been conclusively proved by Moore³ and Sedgwick⁴ that breast-feeding can be reinstated, even after the lapse of weeks of non-nursing, we may as well admit that this consummation may be arrived at only at the expense of the heart's blood of the doctor who sets out to accomplish it, unless he has back of him some such massive crowd psychology as that existing in Minneapolis today. Here the medical college, the social agencies, and the city health department have combined to build up a vogue for breast-feeding that is practically irresistible.⁵ Most pediatricians do not believe firmly enough in the transcending virtues of breast milk over artificial foods in the individual instance (irrespective of their belief in its superiority in the mass), to be willing to put into this task so much of their effort and vital force as is necessary in order to accomplish the reinstatement of a breast-feeding once discontinued. This would probably still be the case, even if they had learned a successful technique,—which, by the way, is quite as difficult to master as is a successful artificial feeding technique;⁶ while its successful carrying out may call for even greater patience and attention to minute detail. Whether these are paid for by the superior results, can be determined only by a study of the statistics referred to a moment ago.

If one is to deal with dysfunction, a familiarity with normal functioning would seem essential. This paper is at once a plea for a more intimate study of the nursing mother herself; and an attempt to record some of the simple, but none too widely recognized, phenomena of lactation, as observed in a study covering some years' time. No attempt will be made here to consider the laboratory findings of breast-milk, which has been done so ably by Talbot,⁷ Holt,⁸ Courtney, and Fales,⁹ and others. The present is a clinical, not a chemical, study of lactation. Neither is it an attempt to preach breast-feeding, nor to set forth a favorite technique. It is rather a homely study of some of the details of lactation, as a help to those who are seriously desirous of prolonging the nursing period; remembering that there is always a powerful urge against this in surrounding circumstances, and that eternal vigi-

THE NURSING MOTHER: A STUDY IN LACTATION.*

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UNLESS one takes the ground that statistics are quite valueless, there is no disputing the contention that breast-feeding is the feeding of choice. This has been demonstrated so many times, and in so many different ways, that it would be piling up needless words to attempt to prove it again. It is not, however, nearly so generally conceded that the maintenance of breast-feeding is practically a matter of choice, in the vast majority of instances; and that it is almost entirely in the hands of the doctor who is attending a case, how long the maternal nursing shall continue, and when weaning shall occur. That this is not usually realized by anyone concerned,—either doctor, patient, or friends,—is the reason for the presentation of the present paper. For either the existence of so many arti-

* Read at the Annual Meeting of the Medical Society of the State of New York, at Brooklyn, May 3, 1921.

lance is not enough without a knowledge of details, if one is to succeed in keeping his babies on the breast until *he* is ready to wean them.

For this purpose, I have used the experiences of a number of mothers, obtained by the use of a simple questionnaire, to check up the results of a more intensive study of a few individual cases. I shall not give these results in detail, as they are to form the basis of a report to be made elsewhere.¹⁰ I have used them here simply as the text upon which to hang a sketch of an average or normal lactation period. For reasons of space I have omitted consideration of the establishment of lactation (with the change from colostrum to true milk), as well as of the retrograde period represented by the weaning time. Only the middle of the nursing period is here taken up.

Perhaps one of the most suggestive facts brought out by this questionnaire, as bearing upon the maintenance of breast-feeding, is the almost universal statement that the months of nursing constitute a period during which the mother is "tired all the time." I have not been able to demonstrate that this is due to the extra call upon the maternal organism for supplying nourishment for two. Rather does it seem to be due to nothing more mysterious than a long-continued insufficiency of sleep in a young adult whose normal demands are not nearly met. Whether the same would be true among mothers of bottle babies might be an interesting point to determine; though of course they, in the very nature of things, are freer from the constant association with their babies than are nursing mothers. It will readily be seen that if a mother stays awake for the ten o'clock feeding, she is probably not in bed before eleven,—certainly is not asleep before then. If the baby wakes at five or six for his first feeding, there is left a maximum of but six or seven hours of sleep, in place of the eight or nine to which she is entitled. If she gives a night feeding, another half hour must be deducted; and as she sleeps in the room with the baby, the slightest sound on his part wakes her,—so that even this greatly reduced total of hours of sleep is far less effective than an equal number of hours of undisturbed slumber would be. A daytime nap for the mother of young children seems almost unattainable; because the time that the baby sleeps is the only time that she has in which to accomplish some of what she considers the essential tasks of the household.

Whether or not the actual nursing act tires the mother, seems to vary with the individual. Some are made "nervous" by the nursing act,—due sometimes to a tenderness of nipples or breast,—and more at first than later on. As a rule, this lessens or disappears before many weeks have passed. More, on the other hand,

do not speak of the act of nursing as being in itself fatiguing.

To a search for causes of diminished supply of milk, almost the sole answers are "tiredness," exhaustion, lack of enough sleep, etc. This fact, taken in connection with the universality of insufficient sleep just noted, is pregnant with suggestion as to the cause of the many premature weanings that we see. The effect of diarrhea and menstruation are not mentioned, in this connection.

The question as to whether the mother gains in weight during this time, and whether this gain is excessive, and permanent, seems to be bound up with the very general idea on the part of profession and laity alike, to the effect that the diet of the nursing mother should differ radically from that of the same woman at other times. It is rare indeed to talk with a nursing mother whose diet is not markedly different from her ordinary food intake. I have tried to show elsewhere that there is a physiological increase in both appetite and thirst in the lactating woman, according to which her desires may be trusted to compensate for the additional drain due to her supplying calories to her child, without the forcing of feeding commonly thought so necessary. Whether or not this is true, the fact remains that the idea is almost universally held that a large increase in the fluid intake must be insisted upon, considerably in excess of what appetite and thirst, left to themselves, would dictate. Hence the accumulation of flesh,— "flabby flesh," some mothers call it,—though this series shows quite as much loss in weight as gain; and perhaps as many or even more cases in which the mother took no notice of any change in weight. Then, too, the developing of matronly form due to increasing age must be considered. One mother increased in weight from 102 pounds at marriage to 148 pounds when the first baby was three months old,—a gain of almost 50 per cent! I may say in passing that the removal of all such directions for forced feeding has almost always met with excellent results, in my cases. Anyone who has ever "been on a diet" will appreciate the relief and the improvement in morale incident to "breaking training." The further help due to the institution of complementary feeding, allowing the baby to fill up on this and so stopping his crying, seems always to relieve the tension, and markedly clear the atmosphere.

Inquiry as to difficulties with nipples and breasts seems to show that even in mothers who carry their nursing well on to nine months, it is quite common for some mild degree of nipple irritation or mastitis to occur, at some time. A consideration of these at this time would lead us too far afield, and into that debatable ground or no-man's land between pediatrics and gynecology. Suffice it to say that in practice we

must not neglect to take account of the fact that at some time or other this complication, in greater or less degree of severity, may be met with and must be combated successfully, if lactation is to be carried on to our liking. And it may further be noted in passing that as a rule the weight of influence of the gynecologist or the family physician, whichever one treats the mother, is usually, although not always, added to the rest of the chorus of voices raised against the continuance of nursing. As a rule, they will give us twenty-four hours' grace, within which time the mastitis must show signs of marked improvement if the nursing is to be allowed to continue. And inasmuch as the pediatricist is not the one who is to treat the mother in case that his favorable prognosis is not quickly verified, he has to give in as gracefully as he may. In these cases, the re-institution of breast feeding can practically never be attempted, as the psychology of the situation is all against it. It is worth observing in passing that most of the trouble with tender nipples occurs very early in the nursing months; and that this usually clears up quite readily, and does not return. One of my cases, however, was bothered for a long time with a "chapping," much the same in character as that of the lips, occurring only in cold weather. Prolonged nursing, in cases in which there was reason to believe that the child did not get all of the milk from the breast in a reasonable length of time, has also appeared to give some trouble, in some of the cases of this series.

The return of the menstrual period during lactation has been quite common in my series but apparently without noticeable effect upon the baby. I usually counsel offering a complementary feeding at this time, however, so as to take care of any possible diminution in amount of milk from fluid loss.

One of the most important points brought out deals with the quantity of milk secreted at different nursings. For records of the amounts secreted by nursing women, I would refer to the work of Abt¹¹ and Hoobler¹², who did considerable work independently along this line. Our norm here is simply the needs of the child, as evidenced by the prompt satisfying of his appetite. This is taken for granted, if at the end of a feeding he does not cry, seems happy and contented, and does not begin to cry again before it is nearly time for the next feeding.

Almost without a dissenting voice, my mothers agree that the early morning feeding is the one at which they have the most milk. Many of those on complementary feedings omit the artificial feeding at this time. The one or two who do not note this superiority of the early feeding over the others, are women who have an overabundance of milk at all times, and hence would not notice the difference so keenly as if they were not so abundantly supplied.

There is a trifle less unanimity in answer to the question as to the poorest feeding. Most say that the ten p. m. is the least satisfactory. One mother, however, couples the ten p. m. with the six a. m. as being the best; and her experience in this respect was the same for a second lactation.

Asked whether anything has been noted as increasing the supply of breast milk, the chorus comes back, with but few dissenting voices, "Increased rest and sleep." Only second to this comes the answer, "milk." No other factors were brought out as affecting quantity production.

Some interesting stories were brought out in answer to the question: Describe a good feeding. A good feeding seems to be dependent primarily upon the mother rather than upon the child; that is, it is the result of the mother's having a breast full of milk. Given this prerequisite, the baby nurses steadily for perhaps a quarter of an hour, sometimes dropping asleep during the process,—in which case, he may then either cease to nurse, or else continue nursing, even though to all appearances sound asleep. After such a nursing, the baby either sleeps through till the next nursing; or, if he wakes, lies quiet and content without crying. Some mothers speak of their breasts as "feeling full" before such a nursing. Another point brought out in this connection is that a "good nursing" is much more apt to occur when there is no one else in the room where the nursing is taking place. I consider this a most suggestive point to be remembered when giving orders to the mother about how to conduct the nursing.

Conversely, a "poor nursing" is described as one where the baby (1) fusses, cries, and lets go of the nipple or refuses it entirely, instead of nursing steadily; (2) if he does take hold, keeps on working away and seems unwilling to stop at all, even after forty or fifty minutes; (3) cries fitfully or is restless all through the period succeeding the feeding, until it is time for the next feeding to begin. All of these phenomena would seem undoubted evidence of the fact that such "poor nursings" are conditioned upon an insufficient supply of milk in the mother's breast. Some mothers comment upon this fact, drawing their own conclusions, and mentioning the fact that at such nursing the breast seems "flat" or empty. I am certain that we have not as yet fully realized the wide deviations from the average offered the nursing child by the same breast on different days or at different periods on the same day. This points to the institution of complementary feeding as being what many of us have found it to be,—namely, a veritable first aid to breast feeding, and perhaps the most efficacious one we possess.

One other fact brought out only less clearly is that a tired, "nervous" state on the mother's

part usually means a fussy, unsatisfactory nursing on the baby's. One sure way to bring about a poor nursing is for the mother to be in a hurry to finish up, so as to get away and do something or go somewhere else. Another factor producing an unsatisfactory nursing is the presence in the room of other persons than the essential actors in the drama.

I have been unable to elicit from a single mother information that would convince me that she had ever overfed her baby, in the sense that is so commonly meant when we are warned in the text-books and in the literature against overfeeding. Three mothers answered that they thought they had overfed their babies,—but, in the next question, which asked on what grounds they based this conclusion, answered "Vomiting," or regurgitation. One of the three answered, "Once in a great while;" and gave as her reason for thinking the baby overfed, "She would spit up a little milk, as if her stomach were overflowing." I shall not discuss this point further at this time, as I have put considerable time upon it elsewhere; but I do want to emphasize the fact, which may seem like rank heresy, that these studies have amply demonstrated to me that it is physically impossible to overfeed a baby on the breast, provided 3 hour or longer intervals are employed. I submit that the return of a small quantity of milk, unaltered in character, in a baby who is in every other respect perfectly well and healthy, cannot be considered a symptom of overfeeding. I have so often done my very best to get a baby to take more at the breast than he wished, and have every time failed so signally, that I am convinced that the bugaboo of overfeeding is a myth, in the case of the normal healthy breast baby. I do know beyond a peradventure that the opposite, underfeeding, is a very real and a very common condition; and that in many cases that have been referred to me with a history and a picture of marked wasting, the only thing required was to have the mother forget the orthodox rule of stopping the nursing at the end of twenty minutes, in order to cure the partial starvation. I feel that the general acceptance and spreading abroad of the hard and fast rule of a twenty minute feeding, irrespective of the individuality of the child and of the mother's breast, has been the cause of more nutritional tragedies than is commonly dreamed of.

The length of time taken by the average child at a feeding has not been taken up in this questionnaire, for the reason that it is realized that such general impressions are practically worthless in determining questions of time in minutes; but from other studies this rather interesting fact has been deduced, which seems worth noting. As the child grows older, the period of nursing becomes very much shorter than it was during the earlier months; although we realize that he

is undoubtedly getting more rather than less bulk at each meal. A Japanese observer has done some work upon what he calls the nursing or swallowing curve in health and in disease, and also in the mentally deficient; but I do not know that any observations have been made of this phenomenon as affected by the age of the babe. I can say definitely that this shorter feeding period is not accompanied by any manifest signs of more rapid nursing; so much so that the mother is sometimes worried for fear that the babe is getting an insufficient amount of nourishment. The knowledge that this shortening in duration is quite physiological, is of value in answering the very natural question of the observant mother who has noted this fact, and is worried about it.

I have by no means here attempted an exhaustive study of all of the phenomena attending a normal nursing. I have merely set down some of the more salient points noted in a study of this highly important function, in the hope that it might stimulate other observers to attack the problem in a more scientific manner; and in the belief that it might answer some of the honest difficulties met with by some of us who have found the maintenance of breast-feeding a task to be attacked and grappled with, rather than an additional burden to be shuffled off upon an already overworked Providence. Perhaps apologies are due for taking the time of this scientific body for the consideration of what may seem like old wives' tales; but as these phenomena occur, not under the eye of the physician or the trained nurse in the hospital or in the sick-room, but rather in the home in the course of the everyday life of the comparatively healthy mother and child, a consideration of old wives' tales seems the only way in which a sufficient mass of details can be gathered to make any general deductions on a very important and practical subject. I feel like sincerely urging those who are genuinely interested in the prolongation of breast-feeding,—and who that deals with babies can help being vitally interested in this?—to help build up a serious literature of breast-feeding, that may compare in value, though not in bulk, with the vast amount that has been written about its concededly inferior rival, bottle-feeding.

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FEEDING SICK CHILDREN.*

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WHEN on Dr. Pisek's death I was requested to act as chairman of this section, my first idea was to omit my own remarks entirely. Inasmuch, however, as the entire program had been arranged by Dr. Pisek, and in view of the cordial manner in which he had received my title, though naturally he did not know what I intended to write, my final conclusion was to leave the program as he had arranged it, but to present the subject intended even more briefly than was originally proposed.

Have you ever been called upon to see a baby whose mother had told you with satisfaction that she had cut out all his food but the milk? Have you been told that the doctor who had preceded you had reduced the strength of the baby's food from 31 to 27 ounces of milk in the mixture? Have you ever read on a chart in the hospital interne order "Fluid Diet" for a baby or an older child?

These illustrations of actual experiences are a few of the incitements to the writing of these remarks. The title, therefore, is far too wide, as a monographic presentation of the subject as denoted would occupy far too much time, to say nothing of the presumption which would be shown in attempting to teach this body on such a trite and ordinary subject.

The object, then, of this paper, is, through you as leaders of pediatric thought, to improve the feeding which we so often see inflicted on the sick little ones, by calling attention whenever you can to follies and errors and leading to the adoption of more rational methods. In your criticism of

what I have to say, both oral and mental, please have in mind the purpose with which these remarks are written.

The illustrations offered above are of actual occurrence. There are certain fundamental errors in the lay mind and unfortunately in the minds of many practitioners of medicine, as to what constitutes the simplest and easiest digested material for children, for the well as well as sick ones. Milk seems to be generally accepted as such, no doubt by reason of the fact that it is the initial diet for children, because it has been called the perfect diet, because it is simplest in its preparation and possibly for other reasons which do not occur to the writer at this moment. Milk seems almost universally to be looked upon as the simplest diet for children and this in spite of the fact that for many years, longer than I have been in practice, it has been taught that milk should be eliminated from the diet of a child who is having an acute digestive disturbance. Of course this does not prove that it is objectionable in other forms of illness, but it suggests it. When I am told by a mother that she has cut out all the child's food but the milk, I have been tempted to say, and I must confess that the temptation has been yielded to more than once, possibly to the offence of the mother, I am tempted to say, "If you had cut out the milk and allowed all the rest, you would have done better."

For years a fairly definite direction has been repeated so many times at the onset of acute diseases that I could almost repeat it backward in my sleep. I am speaking of acute disease of practically any kind diagnosed or undiagnosed, because in many of the cases seen the first day with a temperature of 103 or 104 a definite diagnosis is impossible. In such cases I practically uniformly recommend and of course write somewhat as follows:

Allow "white" cereals or cereal gruel; toast or zwieback; orange juice if well taken; one cupful of clear broth a day; urge nothing but water. To this is added either no milk, most often, or skim milk or milk diluted to a specified degree. Plenty of water or force water.

This written word is reinforced by oral statement urging that at the beginning of any acute febrile condition in a child the digestive capacity is very seriously impaired, as I often say "Goes on strike"; that food during this first day or two or three becomes no longer food but a foreign body. At the same time the child must not be allowed to desiccate, so water is forced. The word is frequently used because it often seems more impressive to use a precise, more or less technical word and define it, than to use the circumlocution at first; the intelligence of the hearers must be considered.

Another illustration I used: Liquid diet. This is especially irritating to me because it is a

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medical error. I have seen this repeatedly; possibly some of the internes that come to you are better trained than those who come to me though I have seen them from various schools and yet this same thing occurs, a liquid diet. Is there any condition in a child where you would seriously, intentionally, definitely prescribe a liquid diet without additional qualifications? In my judgment it is too exclusive and too inclusive. A liquid diet includes broths, it includes literally tea and coffee, it excludes cereals. In their thicker forms at least I do not contend that these latter should always be used, but I am simply making the contention that such an expression is definitely and radically wrong; practically speaking, it leaves the decision of diet to the nurse and it is not the nurse's function to prescribe diet to sick children.

The third illustrative error is the slight reduction in diet usually in a digestive disorder or, as we all repeatedly see, no reduction but the attempt to control the digestive condition by medication. Will we ever learn, as a profession, will we ever teach the members of the profession that the first thing to do in a digestive upset is to omit the milk whatever else we do? Omit the milk!

Feeding sick children; sick children is a very broad term. Whole classes of sick children cannot even be touched upon. The type particularly in mind is the class of acute disorder such as observed in the practice of the general practitioner; the minor disorders, the exanthemata, gripe, etc. How should such sick children be treated, and why?

In the first place, when the child is taken suddenly sick with fever as is the case with many children's diseases it seems to me that the shock of the onset of the disease reduces their digestive capacity almost to nil. If this is true this offers the first indication for dietetic treatment regardless of the name and title of the disease. What food had been taken previously to this sudden onset lies in the digestive tract as a foreign body. This is well illustrated in the cases in which convulsions occur but is also true where this nervous manifestation is absent. Therefore, the first thing to do is to remove this foreign body from the gastro-intestinal tract by using castor oil by mouth, enemas from below, and then to introduce nothing which will do harm. What is embraced in this last statement "which will not do harm"? In the vast majority of cases—of course there are exceptions—plain starch is unobjectionable. The baby form of barley water or barley gruel will usually not be taken by older children and I have neither theoretically nor practically any objection to the other forms of what I speak of as white cereals; farina, cream of wheat or rice; of course as is always emphasized adequately cooked and

the adequate cooking made precise, the former two we say 2 hours and the latter 4 hours, served without milk; (this must also be specified) salted rather freely, children rather like salt and it takes the place of other additions; or we say no addition but salt. It is the most definitely harmless material to be employed, it satisfies the demands of the family for something nutritious, it actually does supply a certain amount of nutrition which is the first kind which will be absorbed and useful. Along with this, if we call it food, water is not only harmless but absolutely and urgently necessary. We are speaking in general; of course in cases of pernicious vomiting exception may have to be made, but generally speaking much water should be introduced and in any case you may use the expression as much as possible.

The next item, toast. This is partly a concession to the food habit of many people who do not eat cereals, but it is usually acceptable and the next most harmless article of diet being closely analogous to the white cereals already mentioned. Emphasis must be laid on and detail given of what constitutes proper toasting.

About the broth, there is some question. I do not disagree with the prevailing opinion of the present age that broth has no food value. I do not even disagree with the fact that the materials contained in it are somewhat harmful to the human economy, but to the young child, the slightly over infantile age, 2, 3, or 5 years old, broth seems to be pretty harmless. Most of them like it, it fills space, it satisfies the child and its mother and in many cases of acute illness we use it, but we use it openly to ourselves as a matter of psychic gratification rather than of physical advantage.

Milk needs to be individualized. If in doubt leave it out. I think we have pretty unanimously agreed at the present time, that the hardest item in milk to digest is the fat, therefore, when we feed our children, we omit milk at first, next we use skim milk, then we dilute it or skim it less as the case may be and gradually resume undiluted whole milk, assuming that the child had previously used it.

The fruit juices; for most of our children this means orange juice. Sometimes pineapple juice and the other forms of fruit juices available are more enjoyed and perhaps in certain cases such as sore throat are more helpful. The orange juice tastes good to the majority of children; it can be used clear or can be diluted thus aiding in the introduction of water, it supplies some of the vitamine elements and a small amount of actual nutriment in the form of sugar, easily utilized in children.

This brings back to mind the fact that starch was recommended as the most harmless and helpful item in diet, starch but not sugar. In my

judgment sugar is very objectionable to a sick child much more than to the well ones, and the amount of sugar that we recommend to well children is exceedingly small.

I have spoken about the increase of milk. What about the other additions to diet? The first which I usually make is the tender fruits, apple sauce, pulp of prunes; next, most likely, very scanty amounts of green vegetables. In some cases instead of this eggs may be given or potato, but I follow the analogy of the feeding of infants and in that case I am far less fond of the early use of many eggs than formerly I was; albumen egg white, I do use, but seldom, Jellies, in the later stages of conditions, particularly where appetite is deficient, may be used but scantily. When we have reached this stage we have restored most of the diet that we recommend for young children.

We are not vegetarians, but meat is the last item, the item of the least importance in the ordinary acute diseases; red beef, beef blood, scraped beef in some cases are very valuable, but in the majority of the acute conditions which we are considering, is one of the last items to be added. Such régime as outlined is very simple; that it will be adequate in 99 cases out of 100 is too much to say but certainly in 90 out of 100, in 9 out of 10 this order of food addition will work. Appetite will return and nutrition will be interfered with as little as the curing of the disorder allows.

A few words about methods: In feeding make intervals never less than three hours or almost never, in certain cases a shorter interval may be employed, but seldom, and often four-hour intervals should be employed. Give a small amount at first, increase later, but remember that just as in health it has been demonstrated, the stomach should have its period of rest between its periods of activity. In short diseases a long night's rest should be given. Appetite to a greater extent than in adults will govern rate of food increase and this is most likely to be the case when a very restricted diet is employed at first.

While a nurse may be successful in the actual administration of food, remember that the child is sick and that unnecessary contentions should be avoided and it will usually be found most desirable to allow mother or other usual attendant actually to administer the food. Many details may or should suggest themselves to the efficient nurse, be she a family or trained one; such as serving in small quantities, in small portions, serving in an attractive way which appeals to children as it does to adults.

Feeding of special individual diseases; it is not intended to treat these to any extent, but two at least must be given some consideration. How friend Coleman can employ his high calorie feeding has always been a mystery to me.

Typhoid fever is a general disease with systemic manifestations, but, from the dietetic standpoint, it may or must be considered as a specific enterocolitis; looked at in this way we find that early at least as the cases occur in these days mostly in the hospital, there is a greater or less tendency to distention, they are toxic and it is necessary to treat them like a fairly acute attack of colitis. Omit milk. Feed them on a nearly pure starchy diet. In the majority of cases this relieves the distention, helps the toxemia and then the skim milk may be cautiously added, toast, fruit juices even apple sauce, but whole milk only cautiously. I find my colleagues with whom I am closely associated deviate somewhat from this method, but the more they employ the whole milk early, the more disturbance, I think, they get in the digestive tract in their typhoid.

Scarlet fever; the pure milk diet should be a thing of the past. Consider if you will that milk is the basis of diet, but if so by all means modify it, simplify it by your cereal addition. Fruit juices may be employed throughout and the other simple additions to diet made as rapidly as the gastro-intestinal capacity may allow. In a general way, the items of cereal, milk, fruit juices and toast need to be adhered to during two weeks in the ordinary mild case which is the dominant one most of the time. By the time three weeks are past I see no reason why the average child should not be back on his standard diet with the exception of meat and eggs. Vegetables and fruits are not disturbing to the kidneys and I see no reason why they should not be used with a reasonable degree of freedom in the third week in scarlet fever or later as the general state of the case makes it necessary.

In conclusion I would repeat that it seems to me that the matter of diet in acute diseases of children is improperly neglected, that they are fed by no means as well as the state of our knowledge justifies. Probably because the proper giving of directions in written detail consumes so much time, but inasmuch as this constitutes a very large portion, possibly in some case the major portion, of treatment this time is deserved. It may be explained as the right of the patient. If these remarks serve to direct attention and thereby secure more careful consideration of this point, the object of the writer will have been attained.

THE PLACE OF DISORDERS OF CONDUCT IN PEDIATRICS.*

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IN its origins medicine was related to the priestly functions. This obviously fixes the beginnings in sources directly concerned with human welfare, even though in relation to many gods or one.

In its growth and development the practice of medicine evolved by a series of leaps and bounds, with marked static intervals. Physical medicine has altered considerable of its emphasis from the therapeutic phase to the prophylactic elements. Mental medicine has grown apace with a mild degree of improvement in treatment, but with a very great advance on the side of hygiene and preventive service. It has been necessary to invade certain domains of human activity with the forces of specialism which, during a period of research and demonstration, have essentially broken down the concept of unity in medicine. The advance of the public health idea has offset, in part, this tendency, and has indicated that the health of individuals or of groups is dependent upon the coincidence and interaction of many complex factors, the beneficent action of any of which may be handicapped by the faulty integration of one or more of the other major elements. It is for this reason that one finds the present-day tendency in social medicine to be directed along educational, hygienic, economic and legal lines, as well as making use of traditional medical science and art.

Pediatrics is in truth a specialty, but it differs from most existent specialties not by reason of the type of diseases treated but because of the fact that it confines its attentions to a span of years. It does not concern itself merely with one physiological system of the body but with all of them. It does not confine its studies and investigations to a single type of morbidity, but aims to counteract all forms of infections. It recognizes the child as a unit being and a complete organism, and seeks to accomplish its welfare. Under these circumstances one may properly ask what place the disorders of conduct should occupy in the domain of pediatrics.

Conduct is the term applied to the way in which a person acts or lives and deals with his behavior and the direction of all his powers to appropriate right living. It is at once the evidence of, and a controlling factor in, the development of character. It may be said that it is folly for pediatricists to busy themselves with problems of character because these are within the purview of moralists. If one considers, however, the determiners and conditioning factors of conduct, one recognizes immediately that at least three ele-

ments are generally considered in connection with the original disposition of the medical problems daily confronting the pediatricist.

Heredity, infection, dysfunction and environment are the fundamental bases of conduct, with their effects expressed in terms of subjective or objective symptoms and their totality of influence focussed in the expression of personality. It is needless to dwell upon congenital idiocy and constitutional inferiority with their concomitant behavior as the expression of heredity. Syphilis as a cause of juvenile paresis and the mild psychoses following some infectious diseases, as typhoid fever, adequately indicate the effects of infections. Dysfunction is manifest in such conditions as cretinism, dyspituitarism, hyperthyroidism, enuresis and various other habits that are based upon functional variations, incident to psychological strains or physiological imperfections not established upon an organic basis.

The environmental elements deserve a greater degree of consideration in pediatrics. They are not so much dependent upon the surrounding objective world as upon the failure of the individual child to make the adjustments essential for efficient living in the world, with a consequent expression of maladjustment in behavior.

These maladjustments may arise from various factors. The effect of purely physical causes such as myopia, deafness and paralysis are varied and understandable. The conduct deformities incidental to such mental causes, as mental conflicts or the inferiority complexes are insufficiently appreciated. Similarly, too little contemplation is afforded moral issues that may involve religious seizures, negativism, or a super-individualism.

Maladjustments arising from these elements, which are merely selected as types, may be manifest in purely physical symptoms or in educational retardation, disobedience, lying, stealing, explosiveness, sullenness, melancholy, night terrors, tics, choreiform movements, hysterical attacks, and that weird conglomeration of misspent energy consecrated by the term "nervousness."

It may be urged that pediatricists are not psychologists or social workers. It may be equally admitted that they are not dietitians or endocrinologists or psychiatrists. The fact remains, however, that physicians all too frequently are asked for advice concerning the bringing up of children with a view to influencing their behavior, their philosophies, and their livableness. Is it sufficient for pediatricists to ignore this opportunity for constructive work? Is it sufficient to attribute irritability to too much candy? Anxiety to going to the circus? Day dreaming to having too much music? Viciousness to being pushed in school? Is it honest for the pediatricist to hide behind the expression that the child will outgrow his particular twist or quirk and to attempt to

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gloss over the importance of the subject because of a lack of understanding of the psychology of behavior or its physical origin? Certainly a fit of temper merits consideration as much as a convulsion. In the realm of pediatrics bad habits and misconduct are treated as though they were of comparative unimportance, with the exception of masturbation, which possibly is over-stressed.

The pediatricist possesses a distinct opportunity in undertaking the management of disorders of conduct. This involves a complete physical examination with a consequent attempt at physical rehabilitation. The establishment of a sound body is a prime requisite in the rectification of difficulties in behavior. It is insufficient to stop at this point and to rest content with the satisfaction of the physical needs of the child. There must be a mental attack upon the problem which at least demands an attempt at understanding the child and the child's point of view. There is a varying need for testing mental potentials and intelligence in terms of intelligence quotients and for utilizing sane psychoanalysis. Then follows guidance to such a sublimation of activities as may be secured either through the re-education or redirection of energies along reconstructive lines. There is, in a sense, a moral attack that is helpful in appreciating the motives underlying behavior and in securing a readjustment of standards as may be required to secure an alteration of emotional trends and their consequent sentiments which help to dominate their physical existence. It is insufficient to establish mere intellectual contacts, nor does a blunt attack in the volitional sphere suffice.

In order to grasp the significance of this phase of pediatrics, the child must be viewed as a social being and his behavior is to be interpreted in the light of conditioning factors which are found in the animate as well as the inanimate powers that exist in the school, the home, recreational groups, Sunday school, and all other major social elements entering into his world. Disorders of conduct may be regarded as the centrifugal manifestations of reflected centripetal forces. The conduct of the child reveals itself as energy cast forth by reason of an emotional metabolism, largely dependent upon the variety of the component parts of life that have constituted his emotional pabulum. He suffers, in a sense, from psychic malnutrition.

It is unnecessary, for our present purpose, to discuss behavioristic psychology in terms of movement. It is sufficient to call attention to the importance of the disorders of conduct in the field of pediatrics. I shall illustrate by a brief reference to typical cases, which are not being discussed in terms of any particular form of psychology, nor are they being classified as neuroses, psychoses, or hysteria. In these few cases I merely desire to indicate some specific forms of

conduct disorder which I have treated during the past year.

Enuresis and Nail-biting.—Enuresis is given pages of consideration in text books, while nail-biting is scarcely discussed. As a rule, enuresis ceases more or less spontaneously, unless dependent upon spina-bifida, whereas nail-biting may enter into adult life as an expression of a lack of nervous control. When the two conditions have been present, I have completely disregarded enuresis and have devoted all attention to the cure of the nail-biting, on the theory that the conscious self-control of one habit affords power to the individual to extend his self-control to the other habit. In practically every instance of the coincidence of these conditions, nocturnal enuresis has ceased within a month following the successful growth of nails.

Timidity.—A six-year-old boy, with a timidity that produced isolation and fear to be in the presence of others, was found to be the victim of repressions caused by older brothers and sisters calling him a fool, stupid, lazy and worthless. Conversations with the mother and with the sisters, some encouragement of the boy, and a stimulation of his interest in his ability to do things resulted in his becoming a perfectly social being. His dullness promptly departed when he was given the opportunity to learn and to demonstrate his ability in school, to which he had not been sent because of the belief in his mental incapacity. Incidentally, I may say, he was referred to me as a mental defective.

Destructiveness.—An eight-year old boy, of border line intelligence, was charged with breaking things up around the house and with being generally unsafe when left alone. Shifting his activities to constructive lines with tools, eliminating corporal punishment by older children, placing him in an ungraded class soon resulted in inhibiting his tendencies to take revenge upon his family for their treatment of him. He was too small and too feeble to return punishment in kind so, with his defective judgment, he had selected destruction in order to satisfy himself that he was getting even with his family.

Lack of Psycho-Motor Control.—A nine-year old boy, born polydactylous, was dismissed from school as being unamenable to school discipline. There was an obvious lack of muscular stability and a general weakness in physical co-ordination, plus a high degree of myopia. He could not dress himself, catch a ball, or hop on one foot. His intelligence quotient was 78, his speech was difficult to understand, but he was possessed of a special musical ability. His difficulties arose from some congenital inferiority, expressed as absolute imbecility in another member of the family and, in general, neurotic characteristics on the part of other brothers and sisters. A system of physical exercises for building up faulty mus-

cular control was instituted; he was given the opportunity of private instruction by his sister; and later was sent to a private school. His voice was changed by correcting the manner of holding his head, and gradually he became able to participate in educational work and to function in a more normal manner. Thus far he has improved greatly, and can perform the ordinary daily tasks of a small boy, though it will take several years before he achieves the high degree of co-ordination necessary for his future needs. His mentality probably will not rise above its present level but it will have an opportunity to secure its maximum potential development, which is decidedly to the advantage of himself and the world in which he must live.

Temper.—A boy, of eleven years old, said to be suffering from an uncontrollable temper, was found to be a moron whose younger brother had outstripped him in education and therefore held him in contempt. His tempers were practically defense mechanisms to assert his personality and to gain a recognition of his identity in the household. Utilizing the bright brother's services as a teacher and giving him an insight into the needs of the older boy, opportunity was provided for more normal self expression and the occasion for tempers decreased. He was encouraged in his school work and was given work with tools. This course of action was further supplemented by the co-operation of the mother in making more use of the services of the child within the limits of his powers.

Cigarette Smoking.—A six-year old boy, addicted to cigarette smoking, was easily weaned from his habit, particularly as he was an exceptionally bright child and an appeal could be made to his desire for school progress. His imitation of and desire to emulate his elders was recognized, and this tendency was offset by an interpretation of the physiological difference between childhood and maturity. The youngster was treated without a suggestion of punishment or threats as to inherent dangers of the habit.

Viciousness.—A fifteen-year-old boy of large size, strictly adolescent in his individualistic opinions, was referred to me as being bent upon a criminal career. The complaints were over-indulgence in cigarette smoking, sexual irregularities, gambling, abuse of his mother, a widow; accompanied by a pernicious tic involving his right shoulder, forearm, arm and hand. He was unable to feed himself or completely dress himself. At times he would fail to return home nights, and in general acted like an irresponsible youth. He was said to have vicious tendencies. His intelligence was normal and he had completed the first year of high school. Physical examination revealed practically nothing save a condition of underweight and the ordinary acne of adolescence. Cure was determined after the revela-

tion of a belief that his mother was discriminating against him in favor of a younger brother. Her pride in family and her constant preachments to good conduct suggested a means of satisfying his antagonisms towards her, with the result that he did everything possible contrary to her advice and suggestion. The tic was a conversion symptom that grew out of a conflict arising from his mother's desire that he should go to work and help the depleted family income, his own desire to enter employment, and his emotional subconscious reaction against doing anything which would gratify his mother. The realization of the basis of the condition, a readjustment and understanding that was brought about between mother and son, a gradual introduction of his own initiative, as a factor of evidencing the manhood which he desired to express, resulted in a proper sublimation of activities. Today he is free from his excesses and has become a self-supporting member of society, and his hatreds have been converted into proper filial expressions of affection for his immediate family.

Uncontrollability.—A four-year old child was said to be uncontrollable. He tore about wildly and home discipline was futile. He had difficulty in speaking and could be understood only partially by his parents. An education of the muscles of the tongue and palate, attention to methods of breathing, and an educational development of his general muscular system, with increasing resting periods and moments of quiet and silence practiced before a mirror, using a clock for time control, resulted in a cure. His gain in vocal expression gave sufficient outlets for his thoughts and ideas to enable the alleged controllability to subside. His entire conduct improved with the growth of ability to speak, to ask questions, to make known his wants, and to indicate his interests and desires. Incidentally, it was necessary to give the mother training in methods of encouraging the development of his stunted mental powers by means of games and plays of a quiet nature which required varying degrees of attention and concentration. This was not a difficult task for the mother, as the child's intelligence was average grade.

Dawdling.—A girl of nine, slow in her movements, taking an hour to dress, spending long periods of time upon any action that required her individual attention, was found to be of normal intelligence but to be overweight and pasty. Her lethargic tendencies were interpreted as due to hyperthyroidism, and under the indicated medication there was a prompt response to normality of function.

Incorrigibility.—An eleven-year old boy, with an intelligence quotient of 78, was referred with an inquiry as to the advisability of placing him in an institution because of an incorrigibility expressed in the form of lying, stealing, running

away from home, and general disobedience. The child had a mitral regurgitation and an aortic regurgitation. He had a general adenopathy, moderately enlarged tonsils and adenoids, and a traumatic ulcer of the cornea. His distinctions of good and evil were excellent. Because of his deficient mentality he was being used as a pawn by a fifteen-year old boy who was teaching him much that was not desirable. He had an ambition to be a cowboy and to do the main things which his cardiac condition made impossible. His Italian parents simply regarded him as "bad" and exercised undue rigidity for this reason, with an increase in his reactions against home discipline. One sister was particularly opposed to him and fought with him constantly. A readjustment of home conditions, placing the boy upon an allowance, securing his sacrifice of the friendly Fagan and making provision for normal recreation was adequate to make life worth living. It secured the cessation of all the characteristics for which his incarceration was requested. The child now lives at home and the community is spared the necessity of supporting him in an institution and possibly lowering his potentials for future service.

Laziness and Headaches.—A five-year old child, referred to me by the late Dr. Pisek, was said to refuse to do anything that he was requested and to be constantly complaining of headaches. The child was intelligent, in fact, too much so. His mother had suffered from headaches and he had recognized her resting and doing nothing when in this condition. As a result he tried to experiment and finding the amount of attention lavished upon him, he appreciated the advantage of complaints of this character, and promptly adopted headaches as part of his mental armamentarium with which to dominate his mother and home. Physical examination was negative, wherefore the neurosis was treated on the basis of refusal to accept the headaches as a reality and the mother was advised to disregard them entirely and to cease her solicitous care at the times when he complained, and rather to substitute an interest in him at the times when he was uncomplaining. She was also directed not to over-fondle him or to make herself his slave, for he was a tyrant who demanded that when he went to bed his mother rest upon the bed until he fell asleep regardless of her other duties or social obligations. The child soon recognized that he was defeated and in three weeks there were no further complaints about the head and he took up his normal child life with a new spontaneous interest in the normal things of a child's world.

Night Terrors.—A bright twelve-year old boy, with night terrors and great irritability during the day time, was found to have commenced a

state of anxiety shortly after the death of a playmate from diphtheria. The fear of death from diphtheria seized him and became an obsession. My reason for mentioning this particular instance is not to dwell upon the causes of night terrors, but to point out, in this particular instance, the simplicity of cure which promptly followed the explanation and institution of the Schick test to which he was found to be negative. The realization of his non-susceptibility to diphtheria effected an immediate release from the night terrors and the rapid amelioration of his so-called daily nervous state.

I have purposely avoided mentioning causes illustrative of phases of misconduct due to physical handicaps or to the influence of infections, nor have I made any effort to report type cases indicative of prolonged endocrine dysfunction. I have sought to suggest a small number of simple disorders of conduct out of the large variety which present themselves to a pediatricist giving particular attention to conduct disorders. Incomplete as the list is it is sufficient to indicate that disorders of conduct merit careful reconsideration and certainly should occupy a larger place in pediatrics than has been the practice in the past.

Pediatrics cannot claim to be the branch of medicine dealing with the health and welfare of children unless it takes cognizance of all of the child. It demands further inquiry into the problems of the instincts, the emotions, the sentiments, the habits, and the psychological trends, as modified by the physical, mental and moral factors which enter into its daily life, and are integrated into the personality of childhood. After all childhood finds itself in the expression of personality, and disorders of conduct are symptoms of interferences with the complete development of the social personality.

A FEW REMARKS ON THE DIAGNOSTIC VALUE OF PUPILLARY SYMPTOMS IN GENERAL DISEASE.*

By MATTHIAS LANCKTON FOSTER, M.D.,
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QUITE recently a lady consulted me to inquire why her pupils were so small, stating of her own volition that she knew they did not react to light, and that she had already consulted two or more doctors without obtaining any further information. Examination revealed typical Argyll-Robertson pupils; both were small, one smaller than the other, neither reacted to light, both reacted to accommodation. After tests of the knee jerks and for Romberg's symp-

*Read at the Annual Meeting of the Medical Society of the State of New York, at Brooklyn, May 4, 1921.

tom, she stated that neither of these tests had ever been made upon her before.

This was not a poor, illiterate patient, but a highly intelligent, well-to-do lady living in New York City, and it is presumable that the doctors she had previously consulted are accustomed to a high-class practice. How they could have failed to appreciate such plain evidence, especially after it had been called specifically to their attention, is beyond my power to tell. One can hardly believe it possible that any doctor at the present time can fail to recognize, or to appreciate, the bearing of an Argyll-Robertson pupil, yet the history of this case seems to show not only the possibility, but the actual occurrence of such a failure at a very recent date.

This incident impelled me to write a very brief and imperfect account of the diagnostic value of certain pupillary symptoms with a view to presenting it to an audience of general practitioners, and it is with much hesitancy that I presume to present it to you, who are all perfectly familiar with the subject. But it seems pertinent for me to raise the question whether we are doing all we can to extend the knowledge of the diagnostic value of symptoms which occur in the domain of our specialty. Right here let me protest against the rather prevalent idea that doctors generally are indifferent to what an ophthalmologist may have to say. A few years ago when called upon to discuss the paper of a colleague before a group of general practitioners, I took the opportunity to urge them to look, to make accurately certain observations which would enable them to make the diagnosis with ease. After the meeting my colleague said to me: "What was the use of telling them that? Not one of them will ever take the trouble to look." That view is wrong, I firmly believe. Some general practitioners know the relations of the eye to the rest of the organism quite as well as we do, many more know them to some extent. Granted that there remains a minority of the careless and self-sufficient whom we cannot reach, are we not in danger of shooting over the heads of those who wish to learn in our discussions of matters of scientific interest to us, so that our words are dry and meaningless to them, and of going to the opposite extreme and dealing out the veriest pap when asked to present papers to general practitioners? My experience has led me to believe that most practitioners earnestly wish to increase their diagnostic powers and eagerly gather up the crumbs of what seems to them wisdom which may fall from our lips. It is therefore in the hope of reaching some of them through you that I present this, which you may consider a morsel of pap.

The pupils are ever changing in size because of the varying conditions of light and accommodation; but we can recognize at a glance whether they are abnormally large or small, and whether

they are equal in size. We can also appreciate the fact when pronounced changes have taken place in them without apparent cause. We must know how to test the reactions of the pupils to light and to convergence or accommodation, and be ever ready to make these tests when attention has been called to the eyes. These tests are very easy to make. Cover the eyes for a few moments to accustom them to the dark and allow the pupils to dilate; then cast a bright light into one eye and observe the contraction of both pupils. The contraction of the pupil through which the light is cast is called the direct, that of the other pupil the consensual or indirect reaction to light. Both must be observed because sometimes the consensual is present when the direct is not. To test the reaction to accommodation or to convergence, either name may be used indifferently, have the patient look far away into the distance, then have him focus his eyes suddenly on a finger held four or five inches away directly in front of them, and watch the pupils contract. No matter whether the pupils are dilated, contracted or unequal, no diagnosis can be drawn from their condition without taking into account these two reactions, together with whatever other symptoms, either local or general, may be present.

Let us suppose that both pupils of a person apparently in fair health, are widely dilated. The cause of this mydriasis may be in the eye itself, in the body at a distance from the eye, or it may be psychic. If he is totally blind, neither pupil will react to light or to accommodation, and some explanatory lesion probably exists in the eyes. This lesion, when found, may prove to be a symptom of some past or present organic trouble in the central nervous system, or it may be purely local. If both pupils respond directly to light, neither eye is totally blind. If vision is good for distance, but bad for near, and there is no reaction to light or to convergence, we first have the patient look in various directions and observe whether any of the muscles which move the eye up, down or inward are paralyzed, for this combination of symptoms would indicate an affection of the oculomotor nerve, quite likely due to a lesion in the brain. Should these muscles function normally, we have to investigate whether the mydriasis dates back to a traumatism which ruptured the sphincters of both irides, whether by some chance a cycloplegic has been instilled into the eyes, and whether the patient has recently recovered from a sore throat. When the last mentioned possibility proves to be the case, a diagnosis of postdiphtheritic paralysis is pretty safe. If the pupils react to accommodation, though poorly or not at all to light, the presence of tabes is suggested very strongly, but we must remember that possibly the patient is suffering intense pain, as from some form of colic, be under the influence of some

strong emotion, like fear or anger, or have psychic trouble, all of which may cause the pupils to behave in this manner. The reflex mydriasis induced by powerful sensory and psychic stimuli may be so strong as to be able to overcome the contraction of the pupils induced by the strongest light we can employ, so an absence of the light reaction in patients thus suffering does not necessarily indicate the presence of an organic change in the central nervous system. When the reactions to both light and accommodation are prompt, we need to question whether the sympathetic nerve may not be irritated by some lesion in the neck, or in the mediastinum. In a child the cause may be intestinal worms. When the patient is very sick or unconscious, the presence of mydriasis is not likely to be of much diagnostic value.

The opposite condition, miosis, may be due to an inflammation or irritation of the eyes, which is usually evident, or to the instillation of some myotic, like eserine or pilocarpine. When the pupils are equally contracted, we are apt to think of chronic poisoning by opium or one of its alkaloids, the patient being supposed to be in fair health, but the contraction may have been caused by a ciliary spasm following prolonged near work, by hysteria, or by a paralysis of the sympathetic nerve. Should the reaction to light be lost and the pupils contract still more in convergence the cerebrospinal system is affected and tabes is the first disease of which to think.

It goes without saying that if one pupil alone is dilated or contracted, the pupils must be unequal. Therefore inequality of the pupils should not lead to a hasty diagnosis of tabes. If one pupil alone is dilated and responds consensually, but not directly, to light, we know that eye to be blind although the reaction to accommodation is normal. If the eye is not blind and the dilated pupil refuses to react to light, either directly or consensually, or to accommodation, we have to investigate with regard to a past traumatism, an instillation of a cycloplegic, and an intracranial lesion. If it reacts to light, we think of a possible lesion that irritates the sympathetic on the same side, or involves the oculomotor nerve. When one pupil is contracted, with no explanatory irritation or inflammation of the eye and when no drops have been instilled, or when both pupils are contracted to an unequal degree, our first thought is of tabes, but this is not present if the pupils respond to light in a normal manner. In the majority of cases the light reaction will be found to be either slow or abolished, and then we know that there is trouble in the central nervous system. In rare instances unequal pupils with normal light reactions are congenital and physiological, but we should not permit ourselves to make this diagnosis until after every possible affection of the sympathetic nerve has been ex-

cluded. Sometimes the cause of such an anisocoria in a child may be found in a swelling of the bronchial glands on the same side with the larger pupil, and, as such swellings are usually tubercular, the anisocoria in those cases may be said to be an early symptom of tuberculosis.

The reactions to light and to accommodation may both be slow or abolished at the same time. The pupils are then usually dilated. Such a condition may be caused by a lesion situated in the sphincter of the iris, in the short ciliary nerves, in the ciliary ganglion or its motor roots, in the trunk of the oculomotor nerve, or in the ganglion cells of the nucleus of the sphincter. We can get some assistance in locating the lesion by the instillation of a drop of eserine into the conjunctival sac; if the drug produces its ordinary effect on the pupil, the lesion lies farther back than the ciliary ganglion, while if its effect is slighter than it should be, the lesion is either in or in front of this ganglion. This absolute immobility of the pupils is met with in cerebral syphilis, occasionally in general paresis, less often in tabes.

More frequently we meet with the reflex immobility of the pupils, in which they react slowly or not at all to light, either directly or consensually, although they respond promptly to accommodation. This is the Argyll-Robertson pupil with which we started. The pupils may be dilated, contracted, or normal in size, equal or unequal. Their predominating peculiarity has just been stated, but they also fail to dilate in response to sensory and psychic stimuli. Such a condition leads us at once to search for other signs of tabes, but it is not absolutely pathognomonic of this disease. It occurs occasionally in general paresis, and is said to have been met with in some other cerebrospinal diseases. The pupils often are irregular, and sometimes the iris becomes atrophic with a consequent weakening of the reaction to accommodation; in such cases the pupils simulate more or less closely the condition of absolute immobility.

Once in a great while our attention may be arrested by very queer behavior on the part of the pupils. First one and then the other will dilate and contract from no apparent cause, or they may dilate and contract together. The first is called alternating mydriasis, the second hippus. Both are indicative of trouble in the central nervous system, but, as this paper is not intended to be exhaustive, they may be passed by along with various other reflexes of the pupil which have been the subject of considerable study, but are as yet of little value in diagnosis.

We must admit that the behavior of the pupils, taken by itself, is an unreliable guide to diagnosis. The pupils may be dilated, contracted, or normal in acute and chronic alcoholism, as well as in other kinds of poisoning, and their reactions may be increased, decreased, or not affected; their

condition depends on the quantity of the poison taken, the nature of its action, the stage of its action when we happen to see the patient, and the latter's susceptibility. The same uncertainty of pupillary behavior exists in meningitis, most intracranial troubles, psychoneuroses, and many other diseases. Nevertheless, observation of the pupils, when taken in conjunction with the other symptoms present, frequently proves a very valuable diagnostic aid.

OPTIC ATROPHY IN A CHILD CAUSED BY LOCALIZED MENINGITIS WITHOUT SYMPTOMS.*

By H. LELAND FIFIELD, M.D.,
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ONE hesitates to read a paper before this section on optic atrophy, well knowing that the subject has been dealt with from many points of view, but as the Cell of Leibsig, in a series of eight hundred cases, mentions only three cases which came from meningitis, and as we have become accustomed to feel that whatever mistake of diagnosis we may make, the autopsy is the final analysis, I ask your consideration of a case in which the diagnosis on the living was fairly positive. However, as you will discover, the autopsy does not in any way correspond with the diagnosis.

The history of the case was as follows:

C.D. A9 FEBRUARY 27, 1920

In February, 1919, this girl was sent home from school and the parents were requested to procure glasses for her which they did. The patient was sent home from school frequently thereafter, with the suggestion that the glasses did not help, but as an oculist had fitted the lenses and was caring for the case, the mother decided that they must be correct. The loss of sight was progressive. The patient had Wassermann done during the summer of 1919, which was negative. Later two Wassermann's were done on the mother, both negative. Patient ceased treatment in October or November. Case came to me on February 27, 1920.

At that time the patient's height was fifty-one and one-half inches; weight, sixty-one pounds; age, nine years; was well nourished, had no tendency toward obesity, or infantilism, the general health of the patient was good, had suffered at times from constipation, but was unable to get about on account of her inability to see. On examination of the vision the right eye was blind the left eye, nasal vision, fingers at three feet. There was a tendency toward spasticity of all the muscles. No history of headache. Lenses pro-

duced no effect whatsoever. (No turning of the eye. No bulging of the eye.)

Child stares straight ahead and does not seem to appreciate any object directly in front of her. Pupils reacted to light slowly with moderate dilation. *Ophthalmoscope*—Both nerve heads show simple optic atrophy. No examination with perimeter was possible.

On March 5, 1920, case was referred to Dr. Ayer for general examination and lumbar puncture. General examination normal. The lumbar puncture gave nothing of interest. Did not show spirochetes. After consultation with Dr. Ayer, we made a tentative diagnosis of pituitary tumor.

A case having the above history would suggest three probable diseases: First, pituitary tumor. Second, brain tumor, and third, syphylitic gumma.

PITUITARY

Symptoms.—These are probably more marked when the gland itself is the seat of hyperplasia or tumor, than when the growth is interpeduncular and intradural, as is the case with the majority of the benign lesions, causing primary hypopituitarism. Only in advanced stages do the latter growths occasion intercranial discomfort of any severity.

Visual disturbances.—The first and most common symptom as a rule is progressive loss of vision. The optic nerves are particularly apt to suffer, either from a hyperplasia of the pituitary body, beyond the sellar-confines or from the effects of a primary infundibular growth. The implication of the chiasm, nerves or tracts, bears no direct relation to the size of the sellar. The atrophy is a so-called primary, and the disc shows no œdema, except in the late stages, when the growth may have reached such a size as to lead to pressure symptoms, with resulting œdema.

Headaches.—Are usually bitemporal, often severe and persistent. When there is considerable glandular hypertrophy, and are due to the distention of the glandular envelope. Where the growth has burst the glandular envelope, we have increased intercranial tension, and we have a choked disc, superimposed on the primary optic atrophy. Occasionally the condition may become stationary, headaches cease and the atrophy may improve.

Photophobia.—Is another frequent source of complaint. It is often associated with deep orbital discomfort, and sensitiveness of the eyes to pressure.

Prismic deviations.—There is always more or less distortion of the visual field. Bitemporal hemianopsia is classical. Homonymous defects or tendencies in this direction are about one-half as frequent as bitemporal ones. In an occasional case, unilateral amblyopia may occur, with but

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little if any perimetric deviations, in the field of the opposite eye. The temporal fields, at least those for form, appear to be lost from above downward. Abnormal pupillary conditions are closely linked with the optic atrophies and perimetric changes. A definite hemopic pupillary reaction, associated with the reaction of Wildbrand (the prism deflection of an image in the blind half of the retina) may be expected only when half blindness is complete. History of periods of double vision associated with palsies have been apparent at the time of remission. Cushing and Walker found that only five per cent of the cases in a series of three hundred showed any tendency to binasal hemeopsia.

Slight nystagmus.—Has been frequently observed, even when the ocular movement has been unaffected by palsies. Anosmia may be complete in advanced cases, associated with the primary atrophy, showing the localized pressure. Very rarely trigeminal neuralgia is a source of complaint.

Nasopharyngeal.—There is a history of troublesome epistaxis. Bleeding may be excessive. It is not unusual for patients to mention an occasional unexpected and intermittent discharge of mucous into the pharynx. This probably explains the prolonged treatment which these cases have undergone for sinus condition.

The symptoms of pituitary tumor may have periods of remission. Months, or years, may intervene between the primary symptoms and the late manifestations. Scarlet fever has been noticed as a causative factor in the further growth of the pituitary.

BRAIN TUMOR

Headache.—May vary in degree and character, persistent and continuous, with increasing severity, in proportion to the growth of the tumor.

Vertigo.—Is mild in form and quite a common symptom. As the attack comes on the patient seeks some support and as the vertigo passes off quickly, he is relieved either for hours, or for several days. Associated with this, we have vomiting, which generally bears no relation to the time of taking food, but may last for hours, or days. Ataxia is present in the majority of cases and spasticity of the muscles is an early symptom. Tinitis and unilateral motor paralysis are attendant symptoms. Vomiting, associated with slow pulse and slow respiration, and a slow mental process are very suggestive symptoms.

Choked disc.—Is marked and usually occurs in both eyes, with increase in the size of the tumor. Youth is more likely to develop choked disc earlier than the adult. Central vision may not be greatly disturbed. The patient may be emotional or hysteric, convulsions, general or

focal. Constitutionally, there is progressive weakness, with loss of appetite, loss of weight and a fixed unequal pupil.

Tumors in the pre-frontal region.—May produce headache, which is not limited to the frontal regions. There is more or less mental impairment and drowsiness, with perhaps a disturbance of the sense of smell.

Syphilis of the brain (Gumma).—Brain tumor and gumma are closely associated as regards symptoms. In place of the choked disc, there is optic neuritis, which develops later, a papillitis. The muscular paralysis is more pronounced and pain along the path of the fifth nerve, with a sluggish irridic reaction to light and a prompt reaction to accommodation. Marked weakness of the muscles of mastication is an early symptom. In late cases retraction of the eyeball. But over and above all a positive Wassermann, either of the blood or of the spinal fluid, is the one diagnostic point.

Therefore, as the family was moving to Boston I suggested that they go to Dr. Cushing and the case was admitted to Peter Bent Brigham Hospital, April 2, 1920. Two days later she developed scarlet fever and was sent to the Boston City Hospital where she remained six weeks and was re-admitted to Brigham, May 14, 1920.

Examination at Hospital.—Positive points: impaired vision, both eyes, headache, nausea, dizziness, and tinitis, primary optic atrophy both sides, resulting homonymous hemianopsia. X-ray shows separation of sutures of the skull, marked drowsiness and torpidity.

Diagnosis, supracellular pituitary tumor.

On May 20th, exploration of pituitary region by the frontal osteoplastic operation by Dr. Cushing. There was some escape of cerebro-spinal fluid. Optic chiasm was exposed. Around the chiasm there were a number of adhesions, otherwise negative findings. Patient did well after operation and was discharged June 10th. Patient was re-admitted June 17th with acute chorea. Was in constant motion all the time and would not take nourishment. This condition continued in spite of all sedative treatment until her death, July 10, 1921.

Autopsy done on July 11th, on the brain, showed nothing on the surface and several transverse sections revealed no tumor.

A letter from Dr. Gilbert Horrax on July 21st says:

"What caused her primary atrophy and field defects, we do not know as yet."

Another letter from Dr. Cushing states:

"In my opinion, there must have been at some time, a local meningitis around the chiasm."

HOMOSEXUALITY.*

By CLARENCE P. OBERNDORF, M.D.,
NEW YORK CITY.

THE term "homosexual," or the misnomer, "degenerate," touches only the surface of the manifold variations of this anomaly and tells little of the psychic difficulties of a person so labelled. It is indeed a problem to make an enlightened presentation of this subject without first studying the physical and psychological homosexual elements which are encountered in the masturbatory stages of sexual development.

Probably a large proportion of people meet with some actual homosexual experience before adolescence. Usually this takes the form of a masturbatory episode in childhood with a playmate of the same sex. In other instances, the child has been utilized homosexually by some older person.¹ Often the individual remembers only a single occurrence of this type. It is my impression that in cases where masturbation has continued persistently, a psychic fixation in a homosexual childhood attraction is apt to be particularly strong, though not necessarily conscious.

"Homosexuality" does not indicate whether the condition is constant or intermittent; whether it is purely psychic or accompanied by physical indulgence; and if the latter, whether it is resorted to "faute de mieux" in those situations where men and boys are deprived of female companionship for long periods of time, as in mining camps, on shipboard and in isolated boarding schools, or whether it exists as a matter of preference, as in the case of the homosexual coteries of large cities; whether finally the individual in question is active or passive.

Most writers on homosexuality fail to investigate sufficiently the psycho-sexual attitude of the

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¹ From a biological point of view, an interesting sidelight on the transitional inter-relationship between masturbation, homosexuality and heterosexuality, has been published by Hamilton, who observed monkeys in his laboratory situated in a live oak forest in California. He states that masturbation does not seem to occur between monkeys under normal conditions. However, when a monkey has been in captivity for some time, he may resort to masturbation.

Hamilton believes that homosexual behavior among monkeys is normally manifested even when opportunities for heterosexual intercourse are present. Hamilton does not use the term active and passive homosexuality, but he states that sexually immature male monkeys appear to be normally impelled by sexual hunger to homosexual behavior with older monkeys. These immature males assume a passive role. He states that "the fact that homosexual tendencies come to less frequent expression in the mature than in the immature males, suggests the possibility that in their native habitat these animals may wholly abandon (passive) homosexual behavior on arriving at sexual maturity."

The assumption of the passive role by the immature male monkey usually occurs when he is in danger and needs the protection and for that reason submits to a more powerful older male. The male who has not yet attained his full sense of power may be alternately either homosexually active or passive. He assumes the passive role less and less as he progresses to full physical maturity and is better able to defend himself.

Among the females the stronger may utilize for sexual purposes a weaker female who needs her protection. Hamilton observed that homosexual behavior on the part of an immature or weak female is a relatively frequent occurrence when she is threatened with injury by another female, but rarely manifested itself in response to sexual hunger.

individual as related to his physical sex characteristics.² These do not always harmonize, for a physically masculine man may be psychologically sexually attracted only by man; a woman with pronounced masculine physical traits may be attracted only by men, etc.

Freud has recently stated, "the mystery of homosexuality is by no means so simple as is commonly depicted in popular expositions; a feminine personality, which therefore has to love a man, unhappily attached to a male body; or a masculine personality, irresistibly attracted by women, unfortunately cemented to a female body. It is a question of three series of characteristics; namely, (1) Somatic sexual characteristics (physical hermaphroditism); (2) Physical sexual characteristics (masculine or feminine attitude); (3) Kind of object choice."³

Persons afflicted with such an incompatibility of normal physique and psychic homosexual inclinations lead a pathetic existence. A man of 74, a veteran of the American Civil War, who consulted me because of a mild depression, confided such a history to me, with the words, "For sixty years I have been leading a double life."

According to ordinary criteria he would be described as a benign appearing, well preserved, alert and active old gentleman. His voice was still brisk and his actions quick and precise. The physical examination showed no trace of secondary sex characteristics. Notwithstanding his masculine appearance he confessed all his manliness to be assumed, and that all his life he had borne the cross of feminine psychic impulses in a man's body.

As a child he would play with the girls—hoop, dolls and house. A constant yearning for affection seemed to be the impelling force of his entire life. Thus, at a very early age, he became a love subject for men and the greater part of his life has been occupied with a struggle to prevent himself from yielding too often to men whom he longed to please. He preferred rough, coarse men, like longshoremen, husky and full of vitality. These he sought at intervals, while his acquaintances knew him as a refined gentleman interested in art and literature.

This man began masturbation at 14 and ceased at about the age of 60, but when he consulted me at 74, still responded to dreams of subjection by men with nocturnal emissions. Although he had succeeded in intercourse with women of the lowest social order on four occasions in his younger

² As an example of the inadequate range in the application of the term homosexuality in a criminal sense, I would refer to "Two (medically) Expert Opinions on the Relationship of Homosexual Women" by Magnus Hirschfeld and E. Burchard. (H. Gross' Archive, Vol. XX.) The two women described in this article are psychologically essentially as different as two individuals can be. American legal opinions in cases of homosexuality, either in conjunction with or without medical testimony, likewise show little appreciation of psychic factors involved.

³ S. Freud, *International Journal of Psycho-Analysis*, Vol 1, No. 2, p. 147.

days, this form of sexual indulgence left him unsatisfied. "In my younger days," he remarked, "I used to grieve because of my affliction, but in later years I have become indifferent."

As a purely schematic though satisfactory working basis—which is by no means absolute—conscious homosexuality may be divided into two classes, subjective and objective. From the prognostic standpoint, these two classes are quite different in their response to psychoanalysis.

SUBJECTIVE (PASSIVE) HOMOSEXUALITY

On the whole I am inclined to agree with Ferenczi,⁴ that subjective (passive) homosexuality in the male, and objective (active) homosexuality in the female are physically determined sexual intermediary states. Such persons show biological anomalies of development which are often coupled with unmistakable physical signs, as the feminine type of torso in the male, or hair on the face and thighs in the female. Magnus Hirschfeld and his assistants have recorded numerous cases of this kind, where pronounced physical characteristics of the opposite sex apparently furnish the dominating influence in the determination of the inversion.

There are notable exceptions to this general classification. I have encountered passive male homosexuals and active female homosexuals with no secondary physical sex anomalies. And on the other hand, individuals in whom secondary sex signs of the opposite sex were present showed little psychic deviation from the normal.

When one probes into the early history of typical subjective male homoerotics, one is likely to find in their rudimentary developmental stages numerous indications of their inversion. Beside their physical anomalies, they show mental characteristics of the opposite sex, and at an early age, become conscious of them. They long for dresses like the mother's, for her ornaments and also for her beauty, and for the caresses they observe she receives from her husband. They prefer to play with dolls and to dress like girls, and continue in these tendencies through adolescence. Through both their demeanor and appearance they are recognized and rebuffed as inverts by other children, even early in their careers.

The analysis of such subjective male inverts does not bring to light many forgotten affects which might be useful in altering the patient's inverted relationship to the masculine sex. Still the condition of subjective homoeroticism in the male need not be regarded as hopeless. Where treatment is undertaken for passive homoeroticism in the male, psychoanalysis may powerfully influence the attitude of the patient toward his malady by removing some of the urgent neurotic fears which accompany the inversion. After analysis

⁴S. Ferenczi, *Zeitschrift für Aertzliche Psycho-Analyse*, Vol. 2, p. 131.

such an invert at least feels himself more reconciled to his passive homoeroticism than previously.

I have had male passive homoerotics seek treatment with just such stipulations—not to be cured but to be made more content with their lives. The question then arises as to whether the physician should undertake to ameliorate the lot of such a person inasmuch as successful treatment would only secure for him contentment in a condition which is socially undesirable and biologically unproductive. However in many conditions of disease the physician encounters similar situations. Certainly the advanced parietic is unproductive economically, socially and biologically. Still we attempt to relieve his painful symptoms even though he is entirely useless. Now the passive male homoerotic is not by any means necessarily an economic liability nor in the widest sense a social loss. It is therefore the function of the physician in these cases to alleviate what he feels that he cannot entirely alter in the present state of our knowledge.

It has not been my fortune, in either hospital or private practice, to have a case of the feminine homologue of this condition (passive male homoerotic) namely an active woman homoerotic, apply for treatment. Female inverts of this physical type of homosexuality are far less likely to seek medical aid than objective male or subjective female homoerotics. My own restricted experience in attempting to alter physical homosexuality through the administration to men of animal organ extracts, such as orchitic substance, adrenin, pituitary extract, and the like, has been uniformly disappointing.⁵

OBJECTIVE (ACTIVE) HOMOEROTICISM

Active homoeroticism in the male and passive homoeroticism in the female stand in sharp con-

⁵In this connection reference must be made to the experimental work of Eugene Steinach in regard to the rejuvenation through experimental revivification of senescent puberty glands. Steinach and others have shown that the stimulating substances which decide specific sexual characteristics are cell groups located between the cell-building structures of the sexual glands—in males, the Leydig interstitial cells, in females, the Lutein cells in the atresic follicles. It is through an internal secretion that these cell groups supply these specific stimulating substances. Steinach calls these constituents of the sexual glands the puberty glands.

Steinach proved that it is possible by the exchange of puberty glands in young adolescent animals, to entirely change their sexual character. He believes that the embryo does not start to develop unisexually or bisexually but is asexual or sexually indifferent at the start and that sexual differentiation occurs only with the development of the puberty glands.

Steinach's operations to rejuvenate senile men by tying off the vas deferens on one side under local anesthesia are not particularly relevant to the immediate subject of homosexuality. However, it was on the basis of Steinach's work inducing sex alterations in lower animals that Lichtenstern operated upon a man who would fall in the class above described as a subjective homosexual. Lichtenstern removed the testicles of this man and implanted the testicles of a sexually normal man into the abdominal wall of the homosexual. After a few weeks an alteration both bodily and physically in the homosexual patient toward heterosexuality, is reported to have occurred and continued permanently.

This operation has been repeated both in Vienna and in Berlin. While no other such striking result with a passive homosexual has been reported, the one case suggests the hope that future work in this field may solve the problem of correcting nature's mistakes in this unfortunate class of persons.

trast to the class of homosexuality described above, therein that they apparently have no physical basis. In physical respects these individuals seem to differ in no visible way from normal men and women. Their anomaly of conduct has all the earmarks of a neurosis and, more specifically, of a compulsion neurosis. The unconscious forces which generate compulsion neurosis and the condition known as active homosexuality in the male are psychologically similar.

Men afflicted with objective homoeroticism possess, in the deepest strata of their minds, traces of primordial memories which indicate a normal period of autoerotic development and a normal attitude in earliest childhood in regard to their love relationship to both parents. However, they swarm with compulsive ideas and compulsive acts and ceremonies which have been elaborated in later life as protective measures against their sex deviation. A penetrating analysis reveals that behind the compulsion exist tantalizing doubts as well as that incompatibility of love and hate which Freud discovered to be the basis of all compulsive mechanisms.

The histories of many objective male homoerotics disclose an intellectual precocity and a premature sexual activity in the direction of aggressive heterosexuality. Their fancies in regard to their parents were the usual ones, at times being elaborated with plans of sadistic sexual assaults against the mother or her substitute, or into barbaric wishes for the death of the father who stood in the way of their desires. Their intellectual precocity often serves to create a mass of infantile sexual theories with which they seek to satisfy their curiosity. These early tendencies form a basis for their subsequent compulsive thinking.

One frequently finds among the objective type of male homoerotics that in earliest childhood they were severely punished by one of their parents (strikingly often the mother) for some heterosexual transgression, such as unchaste attempts at touching some little girl, or infantile attempts at coitus, and that at the time of the occurrence (which they were inclined to repeat in imagination) they were compelled to suppress a violent outburst of resentment at their reprimand.

Following such incidents and throughout the entire latent period of sexuality, which began so early for them, these individuals tended to become especially obedient, servile, and often over-religious. Sometimes one finds that for years after the original rebuke they avoided the society of girls and women and associated exclusively with friends of their own sex.

An analysis of such homoerotics, who are abnormal only in respect to their attention to their love object, reveals that this type of homoeroticism is nothing more nor less than the result of a series of compulsive feelings and compulsive acts which spring from the unconscious as the

result of the repression of normally directed sex impulses.

A history of passive homosexuality in the female is illustrated in a social service worker, aged 39, referred to me for intense nervousness and fear of tuberculosis. For the ten years prior to the onset of her neurosis, she had been living with a Miss X, a social service worker, somewhat older and of a decided masculine personality, in the capacity of a wife. Her consort paid her board, gave her presents, including a ring, and willingly acquiesced in the arrangement of permitting the patient to work spasmodically, while she contributed substantially to her support. However, the patient did not remain loyal to her mate, and had had several minor and one ardent love affair with other women. She had invariably assumed the passive role. During this period of passive homosexuality, she reverted to masturbation begun in girlhood, which she stimulated by fancies of a male or female consort, with herself in the passive role. Here, too, I considered and treated the homosexuality as a compulsion neurosis.

During the investigation of her condition it developed that the patient had somewhat prematurely progressed to the heterosexual stage, and that, following incest with her brother at the age of ten, she thought herself impregnated. She thereupon began masturbation in a mild form. Notwithstanding the keen worry which the idea of impregnation had caused her, she gradually drifted back, after a lapse of six years, to normal social associations with young men. At 25, while seated on the lap of one of her young male acquaintances, penetration unexpectedly occurred, with rupture of the hymen. This so mortified and terrified her that she again avoided companions of the opposite sex and before long came under the sway of objective female homoerotics, finally going to live with Miss X.

After a violent struggle with her conscience and many self reproaches for her infidelity to Miss X., to whom she felt morally obligated, she developed a neurosis. Some of the physical symptoms at the time—gagging, vomiting on arising and abdominal cramps, and the mental symptoms—fear of being alone, fear of insanity, etc.—seem to have been quite overshadowed by a hacking cough and profuse expectoration of phlegm. It is possible that she did have a mild tubercular lesion in the apex of the right lung. At all events, because of suspected tuberculosis, a physician ordered her to an Adirondack resort where she fretted so over her pulmonary condition that the sanitarium physician advised her to return to New York.

This case is cited as an illustration of neurotic homosexuality where retrogression to the homosexual stage unconsciously results from a fear of the social consequences of heterosexuality in an

unmarried woman. While the description given above outlines the salient features in the patient's history, it takes only partial cognizance of a host of impulses and resistances which had tormented her until she found a temporarily satisfactory compromise in passive homosexuality. Following an analysis which lasted a year, the patient has been able to relinquish her homoerotic relationship, has ceased masturbation and is now a proficient worker in her particular field.

As corroboration of the fact that female active homoerotics suffer very little from mental conflicts, I may add that the patient who, through her social service experience, had acquired considerable medical insight, remarked that all of her various lovers seemed to be perfectly well physically and mentally.

UNCONSCIOUS HOMOSEXUALITY

It is probable that unconscious homosexual impulses, remnants of the transitional sexual developmental stage, exert considerable force in the production of many pathological mental symptoms (notably paranoid ideas) and also motivate certain forms of social endeavor, especially politics. But it is beyond the realm of this paper to weigh these theories critically. Unconscious homosexuality, inasmuch as it is unconscious, can never be conclusively demonstrated to any one but the patient. Although, during the course of analysis, the influence of such unconscious homosexual trends upon their actions come to be accepted by patients, we cannot show them with absolute certainty.

Some authors of the psychoanalytic school speak of the masks of homosexuality. They mention a vast number of constructive activities, such as tea parties of the ladies and athletic interests of men as being motivated unconsciously by this component.

Many persons would be disposed to regard the caresses between women—notably those of the adolescent stage, as the "crushes" in colleges and boarding schools—merely as evidence of tenderness. Usually the tender component dominates but often they are undisguisedly sexual. It is only when they become undeniably sexual that custom frowns upon them. In one college I am told they are then designated by the girls as "U. F.s" (unhealthy friendships). The social value of the homosexual component has then perceptibly been lost—it no longer serves the purposeful end of attaching the girls together for fostering a desired "college" or communal spirit.

The so-called platonic love affairs, which occasionally form and endure for some time, depend upon an unconscious (or even conscious) homosexuality in both the man and the woman. In normal individuals of the opposite sex it is impossible, during the period of sex activity, to stifle permanently sex instinct or to confine it to

a relationship which does not tend to find expression in the physical.

At times conscious homosexual impulses remain purely psychic and never come to physical expression. Depending on the degree of repression of such feelings, these psychic homosexual impulses may cause little or considerable difficulty.

SOCIAL CONSIDERATIONS

It has not been my intention to exalt homosexuality, nor in any sense to belittle the grave social consequences which result from it. While homosexual relationships have existed in association with genuine affection and without physical contact, there are others, far more numerous, characterized by obliquities of the most sordid type. Occasionally both these characteristics may exist in the relationships of the same homosexual. Thus one of my patients, a doctor, who had indulged in a promiscuous and gross homosexual life for over twenty years, related that while his physical experiences had been with casual strangers of low social caste, and could only be regarded as most unsavory, nearly all of his intimate personal friends were homosexuals with whom he never indulged physically. They all knew of one another's abnormality but it served merely as a basis for a sympathetic understanding which helped to cement their friendships.

The citation of a few homosexuals who became distinguished in their particular professions is inconsequential as an extenuation of the disease. It merely serves to illustrate that homosexuality does not of necessity interfere with intellectual productivity. It is not argument for the unrestricted exemption of homosexuals from legal restraints which society imposes on its normal members. Yet, if we take it for granted, and I think we must, that most individuals prefer to conform to normal sexual standards rather than deviate from them, it is evident that we must consider homosexuality as a disease (the one form, a compulsion neurosis, the other a biological anomaly), rather than a crime, *per se*.

In cases where the biological manifestations are extreme, as in well-developed eunuchidism, the idea of regarding the condition as criminal never presents itself. Society at large, as a rule, has little sympathy with neurotics. Curiously enough, in the case of homosexuals, it exercises a more lenient judgment on the active (neurotic) than in the passive (physical) male homoerotic. The latter suffers constant taunts and an indirect, but stinging ostracism.

Even if we regard homosexuality as a disease we must not neglect the fact that, like insanity, it may assume criminal aspects. It calls for legal criminal restrictions, principally when it becomes a social menace, the most frequent form of which is some unsolicited attempt upon the person of another. Such assaults, as is well known, are

attempted only upon minors, as a rule. Therefore, they must be stringently handled.

However, as a disease, homosexuality, quite as much as autoeroticism, with which it is so often associated, warrants the attention of physicians dealing with abnormalities of conduct. As a general rule the homosexualist is not so profoundly mentally diseased as a person of the autoerotic type, who is unfortunately prone to lapse into the discouraging dementia præcox states. Yet precisely for this reason, the homosexual is a greater menace to the psychic health of the community, just as the walking typhoid offers greater dangers of infection to others than the bedridden one, and the half intoxicated man has greater possibilities of doing violence than the one who lies benumbed in sodden stupor.

SURGICAL CONSIDERATIONS IN DISEASE OF THE GALL-BLADDER AND BILE DUCTS.*

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DISEASE of the gall-bladder and biliary passages is commonly an affection of middle age, occurs most frequently in women and is closely associated with the incidence of pregnancy. Many cases probably originate during earlier decades and cases are even described as occurring in children. For practical purposes all of the conditions may be divided into two groups in accordance with the presence or absence of stone formation. The various pathological pictures which are seen include the following:

1. Gall-bladders whose walls show a normal histological structure, or some thinning with atrophy of the wall. Stones are present in variable number; in one variety a single stone, becoming impacted in the neck of the gall-bladder, gives rise to a hydrops.

2. Gall-bladders in which infection has taken place and including acute and chronic empyemata. Pericholecystitis may be present in varying degree.

3. The shrunken gall-bladders, being the end-results of all of the previous groups.

4. Acute inflammations of the gall-bladder without stone formation and corresponding to group 2.

5. The end-result of group 4 and corresponding to group 3.

In any case the biologic sequence of events includes (1) the pure infections; (2) the cases due to disturbances of metabolism alone; and (3) the cases in which both of these factors work

together. In any case the various pictures portrayed are stages of one another and the complete development is a matter of time and opportunity.

Some new studies of Graham, of Ogata and of Rouss and Larrimore have shown that secondary changes occur in neighboring organs. In the liver the lesion appears to be principally a pericholangitis with necrosis and fatty degeneration; the end result resembles the picture of cirrhosis. In the pancreas the various forms of chronic pancreatitis develop. These are all due to neglected and long continued foci of disease in the various parts of the biliary apparatus. Besides these, one must not forget the various dangerous complications and emergencies, such as perforation, or acute pancreatitis, which can complicate gall-bladder disease. These are all preventable if the gall-bladder condition be remedied in time.

In making the diagnosis of gall-bladder disease there is unfortunately no method of precision available except in a deplorably small number of cases. The diagnosis is usually based upon the history, the physical examination and upon laboratory data. Of all of these the history is most important. Here one can distinguish two large groups: (1) one in which there is a definite history of gall-stone colic; and (2) those cases in which this history is lacking. When the history of gall-stone colic is obtained it furnishes indubitable evidence of the presence of disease in the gall-bladder. A third distinct group includes those cases with the history and physical findings of an acute infection in the upper right quadrant—the acute empyema cases.

The physical examination may be (1) entirely negative; (2) partially negative; or (3) positive. The positive findings include the presence of a palpably enlarged gall-bladder, the local signs of peritoneal irritation, and jaundice. When these positive evidences are present they furnish conclusive evidence of the presence of gall-bladder disease.

The laboratory evidence that is useful is that obtained by roentgenological methods but, unfortunately, positive results are only obtained in a minority of the cases. The method devised by Lyon of Philadelphia is still *sub judice* and at the present writing certain sources of error must be eliminated before it can become a reliable means for the general practitioner.

In the therapy of disease of the gall-bladder and biliary passages the most important point to have in mind is that these affections are only susceptible to permanent cure by surgical means alone; medical treatment is only palliative. Discussion as to the correct form of surgical treatment naturally centres around the question of cholecystostomy as opposed to cholecystectomy. One can summarize the best present day opinion by saying that whenever possible one should do

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cholecystectomy; one should reserve cholecystectomy for those patients in whom the nature of associated complications or associated disease makes the operation of cholecystectomy too precarious. There will be cases in which cholecystectomy may seem to be unavoidable; under such conditions it is, or should be considered, a palliative operation.

Operation in gall-bladder disease accomplishes a double object. (1) It removes a focus of infection; in cholecystectomy this is actually ablated from the body more or less completely; in cholecystostomy the focus of infection is drained until the infection disappears. (2) Operation, when bile drainage is employed, exerts a beneficial effect upon the metabolic disturbances which are associated with gall-stone formation. The good effect of bile drainage is probably in the nature of a recuperative process, and seems to have similarities to the phenomena of fatigue and rest in muscle tissue. Bile drainage is also imperative to help remove foci of infection in the liver and intrahepatic ducts; under such conditions it should be continued for long periods of time. Lastly bile drainage is important to cover up and rectify any fault in technic in the removal of stones; a wide drainage permits the spontaneous discharge of small intrahepatic concretions as these pass downwards into the extrahepatic ducts; many postoperative recurrences of symptoms will be thereby prevented.

In operating attention should first be directed to the common duct as this carries the greater urgency. Attention is given secondarily to the gall-bladder if the nature of the pathology demands it and if the condition of the patient, and other factors, permits it.

In the surgery of the common bile duct two points are essential to success: (1) that the common duct be well drained; and (2) that the abdomen be drained down to the line of suture. The possibility of closing the incision in the common bile duct, which has been discussed and advocated by Richter, is one which ordinarily should not be considered—and perhaps never—both because of theoretical principles in regard to the nature of the disease, and because of technical criteria discussed previously. These latter have been reviewed by Crile and because of the very nature of things contraindications are continually being presented which preclude the safe employment of this refinement of technic.

A similar desideratum has been discussed in regard to doing cholecystectomy without any form of abdominal drainage. In this regard I am quite sure that surgery is at that stage in which it was many years ago in regard to drainage in appendicitis. An intelligent use of abdominal drainage does not lengthen the time of healing, or of convalescence; it, furthermore, removes such a potent source for evil as to be a highly desirable part of the technic.

In competent hands the mortality of uncomplicated gall-bladder operations is very small—certainly not more than two per cent. With the association of complications, and in late and neglected cases with infection and obstruction, the prognosis is not so favorable. The mortality is highest in common duct obstruction by stone. Most of the patients who die are over 50 years old. The important lesson that one must again point out is that all of this increased risk and mortality can be easily avoided by operating upon the patients at an early—if not the most early—stage of the disease.

The important causes for the recurrence of symptoms include among others the following: (1) the persistence or recurrence of stones in some part of the biliary tract; (2) the persistence of an infectious focus; (3) the persistence of a fistula; (4) adhesions, and (5) the results of complicating disease in associated organs, namely, the liver and, especially, the pancreas. It is important to remember that the extrahepatic dilatation of the ducts, which occurs after cholecystectomy and is a normal postoperative occurrence is also subject to sudden hyperdistensions; these acute hyperdistensions can produce symptoms equally alarming as those due to obstruction of the common duct itself; retrogression occurs, however, spontaneously. Those recurrences of symptoms which are due to continued disturbances of metabolism I hope to discuss at some future time.

The great variance between the number of recurrences after truly radical surgery gives the impression that the latter is, truly, a conservative form of surgery. At the present moment radical surgery, which, perhaps, may fall short of being ideal, is the best means at our command for removing the pathological condition especially when it is practised at an early period of the disease.

INTERMITTENT SPASM OF THE RENAL ARTERY.*

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THE entire arterial tree from aorta to the smallest arteriole, because of its muscle tissue, is capable of contraction. While larger vessels are more elastic, smaller ones having proportionately more muscular elements possess greater contractility. The arterial system is richly endowed by means of the vasomotor centres, sympathetic nerves, ganglia, and nerve endings in the vessel wall, with a vasoconstricting and vasodilating mechanism. It has long been known that normal arteries may undergo spasm (Brunton, Pal.). Hamburger and Oskar Kirsch have even observed states of angeiospasm in children.

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Pal and others have noted arterial spasm in association with chronic lead poisoning, tabes, nephritis, uremia, eclampsia, renal calculus, gall-stones and intestinal toxemia.

An arteriosclerotic vessel is more easily irritated and is therefore predisposed to vascular crises. In the presence of arteriosclerosis, the angeiospasm may occur in arteries not necessarily diseased. An arteriosclerotic or atheromatous vessel whose muscular tissue is being more and more damaged may in time no longer evidence a tendency to spasm.

Spasm of vessels is the result of some direct action on the muscle tissue in the media, or, through a stimulus transmitted by way of the vasomotor centre or sympathetic vasomotor mechanism. Marked irritability of the vasomotor mechanism, generalized or localized to some definite area of the body, will predispose to attacks of angeiospasm. A normal arteriosclerotic or atherosclerotic vessel which during ordinary conditions carries sufficient blood to its vascular bed may, with additional tax and greater requirements, such as occurs during digestion, mental or physical effort, undergo spasm. The blood supply, then, becomes inadequate and ischemia and hypofunction of the tissues supplied results.

While, as noted, arteriosclerosis may lead to angeiospasm, the reverse holds equally true. Repeated adrenalin injections in rabbits cause repeated vasospasms and finally lead to arteriosclerosis (Josue). Arteriosclerosis and atheroma may later be accompanied by local thrombosis. It may be difficult in cases of spasms in diseased vessels to determine how much of the decreased circulation is due to spasm, and how much to narrowing as a result of atheroma, embolism of atheromatous masses, or thrombosis.

Direct evidence of arterial spasm has of necessity only been possible in the retinal artery or arteries of the extremities. Von Wageman, Eischnig, and others, have observed repeated attacks of sudden blindness in one or both eyes, during the height of which the ophthalmoscopy revealed pale discs, contracted retinal arteries, and empty retinal veins, which promptly disappeared with the restoration of vision. In crural, or brachial spasm, signs of local anemia, lowered systolic blood pressure, diminished or absent pulse in the dorsalis pedis or radial artery of the affected limb have been noted to suddenly occur and as suddenly disappear (Erb).

That similar arterial spasm affecting various internal viscera can occur must by analogy be inferred. As such may be mentioned the following: (1) coronary spasm leading to attacks of stenocardia; (2) spasm of the branch of the coronary supplying the a-v bundle producing a Stokes-Adams syndrome; (3) cerebral arteriospasm leading to syncopal attacks, transitory monoplegia, hemiplegia, hemianesthesia, aphasia,

annesia, deafness, vertigo; (4) spinal arteries, producing sudden transitory weakness of both legs without much pain and no peripheral vascular disturbance (Dejerine's syndrome); (5) mesenteric artery, causing Ortner's syndrome of dyspragia intermittens intestinalis and, finally, (6) renal artery spasm as evidenced by the cases of Pal and myself.

The renal artery may undergo spasm as a result of local vascular trouble, or by way of irritation of the splanchnic nerves. Bilateral renal angeiospasm leads to diminished or complete cessation of urine formation. Cohnheim and Roy, Burton-Opitz and Lucas found that while stimulation of the greater splanchnic nerves or renal plexus produced a high systemic pressure, a profound reduction in the renal blood flow occurred. This tonic retention of the renal blood bed was shown to be due to the stimulation of the vasomotor fibres of the kidney, causing constriction of the renal blood vessels. This corroborated the previous work of Vulpeau who, in 1875, by faradization of the splanchnic nerves caused renal angeiospasm, the kidneys becoming anemic, and no urine being secreted. The suppression of urine is also produced by clamping the renal artery, since there is no longer maintained a sufficient blood pressure within the glomeruli to further the secretion of the watery element of the urine. What has been accomplished in the experimentally produced renal block is demonstrable in the clinical case of bilateral renal angeiospasm as seen in Case I. Israel has stated that long duration of anuria does not speak against pure angeiospasm. Clinically, the prompt relief of anuria by means of vasodilators in a case suspected as bilateral renal angeiospasm would go a long way towards affirming the diagnosis.

The symptomatology of intermittent spasm of the renal artery will vary with the intensity, duration and frequency of the attacks, and as to whether one or both sides are involved. The attack may also be associated with localized angeiospasm elsewhere—coronaries, cerebral, or peripheral vessels—or generalized vasospasm. In the latter event increased elevation of the systolic blood pressure due to the generalized arterial spasm will occur (Pal, Huschard, Ascoli). Bilateral spasm leads to oliguria or complete suppression of urine. The pain of unilateral renal arteriospasm may resemble superficially that due to renal colic, except that it is not as severe and the patient does not throw himself restlessly about in order to secure what might be a comfortable posture. Hyperalgesia of the 11th and 12th dorsal spinal segments may be found, particularly in the hypersensitive patients. The urine, if previously negative, will, after the attack, usually show abnormal elements—albumin, casts and red blood cells. If these elements, due to previous arteriosclerotic nephropathy, have already been

present, they may be found increased after the vascular crisis. The presence of new found or increased abnormal elements in the urine after the attack will depend to a great extent on the duration and severity of the renal ischemia produced. The more severe the ischemia the greater renal pathology, such as coagulation necrosis and fatty degeneration, especially of the convoluted tubules, will occur. Direct proof lies in the oncometric experiments of Cohnheim and Roy, who found that with irritation of the vasomotor mechanism the kidneys became smaller and excreted albumin and casts. They also proved that with increased blood pressure alone the kidneys do not yield albumin, but only if associated with circulatory changes in the kidneys themselves. According to Overbeck and Hermann, the excretion of albumin depends on circulatory changes in the glomeruli.

Spasm of the renal artery being but a functional state, post-mortem studies can only be of service in determining etiological factors or in the exclusion of other diagnoses. In Pal's case (*Gefasskrisen*, 1905, page 108), there were attacks of pain in the left lumbar and left hypochondriac areas. These occasionally alternated with definite anginal attacks. The lumbar pains frequently prevented sleep. The patient remained quiet during attacks. Some months later, pains in the right renal area occurred. The urine, which had previously shown no albumin, would reveal it after the attacks. During the attack the renal area was tender and blood pressure was increased. At the post-mortem examination diffuse arteriosclerosis, including the abdominal aorta, was found. The kidneys microscopically were enlarged—right 190 gms., left 260 gms. The capsule was tense and stripped readily. Consistency slightly increased, surface flat and reddish gray. Cut section—cortex, reddish-gray; bases of pyramids, bluish-red; papillae, yellowish-gray; calyces and pelvis, pale; blood vessels thickened. Both renal arteries thickened, intima thickened and rough. Microscopic examination—cortex revealed several areas of increased interstitial tissue between tubules; interstitial tissue infiltrated with round cells. Tubules dilated and epithelium flattened. Occasional glomeruli that showed hyalinization. Some of larger vessels showed typical mixed thrombi. Renal artery itself revealed intima irregularly thickened and hyalinized, media and adventitia presented round cell infiltration, vasa-vasorum narrowed with adventitial thickening. To summarize: sclerosis of the renal artery and attendant focal nephrosclerosis.

Case 1.—Agnes P., widow, aged 63, was first seen December 23, 1918. Two years previously she had an attack of anuria, incomplete for three days and complete the succeeding four days. After that she was well except for occasional abdominal cramps, not attended by distension,

lasting a few hours and relieved by heat. There were no anginal attacks. She occasionally suffered headaches and dizziness. Four days before coming under observation she ceased voiding. There were no pains, no headache, no drowsiness, no twitchings, no vomiting, no excessive sweats or diarrhea. She did not feel weak, and was walking about. She appeared a very pale, aged woman, though very bright and vivacious. There were no evidences of hysteria. Pupils equal, normal, react to light. Eye grounds show slight arteriosclerotic changes. No uremic odor to breath. Tongue moist. No edema eyelids, sacrum or legs. Lungs negative. Heart percusses enlarged to left. Aortic second sound accentuated. Aorta does not percuss enlarged, and is not palpable in the jugular notch. Pulse, 72. Systolic blood pressure 215, diastolic 104. Abdomen negative as to renal tumors, loin tenderness, or pain on lumbar fist percussion. Bladder on catheterization found absolutely empty, corroborating the previous negative catheterizations made by a practical nurse. In view of the previous attacks of otherwise symptomless anuria, her hypertension, evident arteriosclerosis, and absence of symptoms or signs of the common causes of total renal suppression, a diagnosis of bilateral renal artery spasm was made, and a therapeutic test with amyl nitrite decided upon. 5 mm. pearl was broken and inhaled at

9.45 P.M.—systolic 215, diastolic 104, pulse 72

9.50 P.M.—systolic 80, diastolic 54, pulse 54

patient yawning and appears very pale; her systolic pressure had dropped 135 mm. Hg., her diastolic 50 mm. Hg.; her systolic pressure now being 24 mm. Hg. below her previous diastolic pressure.

9.52 P.M.—systolic 120, diastolic 100, pulse 72

9.55 P.M.—systolic 120, diastolic 100, pulse 72

9.57 P.M.—systolic 154, diastolic 100, pulse 72

readings at 10 P.M. and 10.05 P.M., same. Her systolic was now 61 below that previous to the test: diastolic only 4 below previous diastolic, pulse the same. She was now ordered theobromine sod. salicylate 10 grains every two hours. Eighteen hours after being given the amyl nitrite she voided spontaneously 2 oz. of very concentrated urine, highly colored, sp. gr. 1029, trace of albumin, no sugar, increased indican, a very few hyaline casts, very few r.b.c., very few w.b.c., few calcium oxalate crystals. From that time urination was again normal in amount and frequency. On the second day physical findings as previous, except that her blood pressure was systolic 190, diastolic 104, pulse 72. During the attack of anuria there had been a definite rise in the systolic pressures compared to her usual high level—definite evidence of superadded hypertension. She was placed on a reduced salt, reduced protein diet, ordered diuretin gr. 10 every 4 hours, and sodium nitrite $\frac{3}{4}$ gr. t.i.d. Blood

chemistry gave normal figures. X-ray, cystoscopy, and ureteral catheterization were entirely negative as to calculus, or other obstructive lesion. Five months later, May 5, 1919, she was again seen. For three days urination had been very scanty, and there had been complete suppression for the last 18 hours. Catheterization revealed bladder completely empty. Systolic blood pressure 216, diastolic 104, temperature 99.8 F. per rectum, pulse 108. Heart as at previous examination. Liver not enlarged, no ascites, no edema, perspires freely. No headache, no vomiting, no weakness, no uremic manifestations. She was ordered theobromine 10 gr. every 2 hours, and nitroglycerine 1/100 gr. under tongue every 2 hours. She began to void after two doses. Since then she has experienced occasional pains in loins, and has had two attacks of anuria lasting three days each and disappearing promptly on medication. Physical examination today reveals slight left heart hypertrophy, systolic blood pressure of 196, diastolic 106, negative abdomen. Urine sp. gr. 1020, very faint trace albumin, pus cells, moderate epithelial cells, no casts.

Case II. Israel S., male, 53 years old, excessive smoker, was first seen August 29, 1918. Six years ago he suffered a severe attack of angina pectoris which lasted several hours and was accompanied by angor animi. No similar attacks. Five years ago, sudden blindness in left eye while walking, disappearing in an hour. Three years ago an attack of pain in left hypochondrium, again three weeks ago, and again two weeks ago. Urine revealed red blood cells. There had been no radiation of pain to hypogastrium, penis, or testicle. No frequency. Pain was mild and unaccompanied by vomiting. It was aggravated by walking. At different times tinnitus and vertigo. Examination revealed marked arcus senilis, pupils and eye grounds normal. Marked pharyngitis, probably due to smoking. Radial pulse rate 72, left feeble compared to right, systolic of right side 130, left side 100, diastolic 88. Heart not enlarged, sounds good. Urine marked trace of albumin, no sugar, few r.b.c. and w.b.c., occasional hyaline casts, some oxalates, few epithelial cells. Proctoscopy negative. X-ray of genito-urinary tract negative for calculus, enlargement or abnormal position of kidneys. May 25, 1919, pains in left lower abdomen at times, better at rest. Occasional attacks of dizziness. Cramps in legs on walking, left radial pulse not elicited. Right systolic 122, left 80, diastolics 74. Precordial zone and left renal zone of hyperesthesia. No pain to fist percussion over lumbar area. Abdomen negative. Right dorsalis pedis pulsation present, left absent. August 7, 1919, no left-sided abdominal pains; occasional severe precordial attacks of pain, once accompanied by radiation to fingers. Heart sounds feeble, no cardiac enlargement to

percussion. Right radial systolic 132, left 90, diastolics 80; very feeble left pulse. Precordial and left renal hyperalgesic zones. Urine negative. October 31, 1919, occasional precordial pains. At times can undergo great exertion without distress, at times pain with slightest exertion. Frequent attacks of left lumbar pain almost daily. Pains in left knee. At times marked distension of abdomen. Left pulse not elicited, right systolic 120, left 102, diastolics 84. Eye grounds show slight narrowing retinal arteries. Heart not enlarged. No accentuated aortic second sound. Kidneys not palpable. Knee jerks exaggerated. Left knee tender. Feces negative for ova or parasites. December 23, 1919, repeated precordial pains, repeated left lumbar pains. Left radial pulse present. May 2, 1921, precordial attacks, lately severe. Last few weeks again left lumbar pain, lasting three to four hours, almost daily in occurrence, better with rest, and not attended with any urinary disturbances. Right systolic pressure 140, left 94, diastolics 80. Weight 126. Eye grounds practically negative. Heart negative. Pulse 72. Abdomen distended, no masses, kidneys not palpable. No Murphy loin tenderness, no renal zones. Both dorsalis pedis arteries pulsations not elicited. Urine 1008, very faint trace of albumin, no casts.

CO-OPERATION OF SCHOOL AND HEALTH AUTHORITIES.*

By JOHN EDWARD BURKE, M.D.,
SCHENECTADY, N. Y.

IN every community today we have many uplift agencies. They are all striving to make life's burdens less irksome and more endurable. Every one of these agencies emphasizes the importance of physical and mental health. It is true in many cases that laymen direct these activities and in their zeal to attain their ends, much inaccurate information is spread and considerable exaggeration is resorted to. But the very fact that these agencies exist is proof that there is a demand for the service which they attempt to provide.

We hear much criticism of these activities. It is said that we are becoming altogether too paternalistic. Is this criticism justified? To the writer it seems that it is not justified.

In a complicated civilization, such as we enjoy today, a large percentage of the population of every community find it just all they can do to survive the heartless competition necessary to existence. Because people are not more capable is not in most cases due to any reason over which they have control but to inherent physical and

*Read at the Annual Meeting of the Medical Society of the State of New York, at Brooklyn, May 5, 1921.

mental shortcomings. Is it not, therefore, in keeping with present-day ideals to extend the work done by uplift agencies, insofar as health matters are concerned rather than let individuals shift for themselves? It may savor of paternalism, for a community to have some agency looking into the activities and environments of the individual, from a health standpoint but the community as well as the individual will profit by such work.

In times gone by, when communities were not so large and the matter of making a livelihood was more simple, there was not the demand for community help for individuals that there is today, when most people are engaged all their time in trying to solve the economic problem.

By community help here I mean education and advice along lines which make for better health and social conditions rather than financial aid.

As previously stated, there are many agencies engaged in the work of teaching people how their physical and mental health can be improved. Oftentimes these agencies overlap or do not cover much of the ground. Would it not be a better plan to correlate all this work under a community health department? This central organization need not necessarily finance all the activities but it should exercise a guiding hand and be in touch with the work done by all.

A plan of this kind is gradually being evolved in Schenectady. As yet we have not attained to the degree of perfection that we hope for, but we are making progress.

Each month a meeting is held in our health center, which is attended by all doctors, nurses and lay workers engaged in public health work. This meeting is presided over by the health officer. In addition to a discussion of local health problems and ways and means of solving them, we are addressed by a speaker on some phase of health work. These meetings make for co-operation and always clear up misunderstandings. Every attendant knows what the other workers are attempting and this knowledge makes possible the elimination of repetition of work.

In Schenectady the school health department is conspicuous in the city's health program. This organization is employed by the board of education in accordance with the State medical inspection law. It consists of a chief medical inspector, six associate medical inspectors, four dentists, fifteen nurses and an orthopedic worker. This group, together with the local municipal health department, takes care of most of Schenectady's public health work.

In addition to the municipal health department and the school health department, we have, as in other communities, various health organizations connected with industries, insurance companies and privately operated dispensaries.

The school health department does not lose sight of the fact that the city health department is responsible for community health and sanitation and it therefore functions as a part of the municipal health department rather than as an independent group. That the supervision of health work in the schools is under the Department of Education is as it should be. The state makes education compulsory and it is therefore a duty of the Education Department to determine who are educable and who are not. This work then is the function of the school health department.

Obviously, a child who has contracted an infectious or a contagious disease should be promptly cared for, not only for his own protection but for the protection of those about him. This is an important duty of the school health workers. On suspicion children are isolated until the suspicion is found to be unwarranted. The municipal health department is promptly advised by the school health doctors of all contagious disease in the schools and the health department in turn looks after the home quarantine and instructions. Daily exchange between the municipal health authorities and the school health authorities, of all reports coming to the attention of either office is a practice that has been carried on for the past two years and this results in the health authorities knowing at all times just where communicable disease is to be found.

It is not the practice of the school health department to treat other than in emergencies. The school doctors and nurses are occupied in pointing out physical and mental defects and taking steps to have these corrected. In all cases, children who are able to pay for medical attention are referred to their own doctors. In cases where they are unable to pay for this service, they are sent to the city clinics. These clinics provide both medical and surgical attention. Follow-up work is taken care of by both departments.

About two years ago, as a result of the joint interest of the city health department, the tuberculosis committee and the school health department, a school for tubercular children was opened in Schenectady under the supervision of the Education Department. This school is operated much as a sanatorium; is during the daytime. Careful attention is given to diet, rest and fresh air. The children are fed on a calorie basis and the menus consist of well-balanced meals prepared under the direction of a dietitian. Daily temperatures are taken in the afternoon and dependent on the appearance of the child's chart is the length of rest periods and amount of exercise which is prescribed.

While this school is operated by the School Health Department, the City Health Department plays a large part in its success. Each week the children are examined by the chest specialist at

the city clinic and his suggestions and advice are acted upon by the school health authorities.

In the homes of these children, instruction is given by the municipal health department nurses and these workers keep the schools at all times in touch with home conditions.

I have mentioned a few of the health activities in Schenectady in which the municipal health workers and the school health workers co-operate, particularly stressing school work, since that is the particular health work in which I am interested. These are not the only places where the paths of these organizations meet. Not a day goes by that personal or telephone discussion does not go on between workers in these two departments as to who can best handle certain problems.

To say that differences do not occasionally arise would be describing a utopia which we have not realized. However, it can be said that when troubles do arise, they are quickly adjusted to the satisfaction of all. Usually differences are due to misunderstandings by new workers, and not to any jealousies as to what this department or that department should do.

It may be interesting to note that many of the doctors and nurses both in the municipal health department and in the school health department have been engaged in their health work in some cases as long as ten or twelve years. Such periods of service not only make for efficiency and understanding but indicate that the workers are interested in their work or they would not continue on.

It has been Schenectady's good fortune in the past ten years to have had health officers who were very much interested in the public health. In the writer's short experience of four years in school work, there has never been one serious difference between municipal health authorities and school health authorities. This condition has not prevailed because of any indifference to trouble by either department but to an honest effort by all concerned to do their very best for the community good.

In village and country school districts it would seem desirable that the health officer act as school physician also, since the amount of work would not be anything like so great for obvious reasons.

When, however, a country district employs a school physician other than the health officer, it would seem to the writer that the duties of each are so clearly defined that if both officials are interested in the community good there should be no friction. It goes without saying that a school physician should ever keep in mind that the health officer in his community is responsible for community health and he (the school physician) should not disregard this fact.

Public health work is just being born. The

surface has just been touched. There is no end to the amount of work to be done and if this twentieth century development is to go on and it will, all those engaged in it must set aside any personal animosities and work for the common good.

The School Health Department is the first offspring of the municipal or district health department. The child has made good. Other offsprings will come. They must not disregard the parent organization nor be disregarded by it. There is an abundance of work for all.

EFFICIENCY IN CORRECTIVE TREATMENT IN SCHOOL MEDICAL INSPECTION.*

By JAMES W. DIMON, M.D.,
UTICA, N. Y.

I HAVE been asked to talk to you this afternoon for a few minutes on "Efficiency in School Medical Inspection." It has been rather hard to decide just what should be said and what left unsaid in the limited time assigned to me. I have been in the habit of thinking of our work as being in general divided into three parts: First, the control of contagious disease in the schools; second, the physical examination of the pupils and correction of defects found; third, general educational work in hygiene and prophylaxis. It has seemed advisable to confine my talk principally to the work of physical examination and correction of defects, touching only incidentally on the problems of hygiene and prophylaxis, and passing over our duties in the prevention of contagious disease with their consequent interrelations with the Department of Health. The problems met in different localities are so various that it would seem profitable to speak only of a few general principles in accordance with which I believe this work should be carried out, and not to go very deeply into the particular methods to be employed.

It is probably needless for me to emphasize the necessity for a definite system. Be the community large or small, it goes without saying that the best results will not be obtained unless the work is done with regularity, and unless the most practical routine has been determined for the daily problems which confront us. That this system should be as simple as is consistent with effective work, however, does not always appear to have been realized. It seems to me that there is sometimes a tendency to multiply reports and blanks even at the expense of their usefulness, and to complicate our relations with other co-ordinating agencies. This tendency should be strongly combated. Our nurses are employed to get results rather than to act as record clerks. To be

*Read at the Annual Meeting of the Medical Society of the State of New York, at Brooklyn, May 4, 1921.

sure it is very satisfactory to have a well-rounded report of statistics at the end of the year, but let us remember that this will be read by few and soon filed away in obscurity, while the children with corrected vision and removed adenoids are living advertisements of what we have accomplished. In the school system with which I am connected we have gotten down to four forms which seem to be fundamental. They are:

1. A weekly report from the doctors.
2. A weekly report from the nurses.
3. A monthly report from the schools, summarizing the work done in each school.
4. An individual medical record card for each child.

These four forms are supplemented by the following printed matter only:

1. A working note book for the convenience of the nurses.
2. A notice of defects to be sent to the parents.
3. A card giving the treatment for pediculosis.

These various forms were designed with the object of entailing as little clerical work as possible. The idea of our individual record card originally came from Cleveland. This card goes with each child through his whole school life. With each physical examination that the child undergoes the following information is entered: Date, age, height, weight, record of vaccination and contagious disease, record of any defects found, with space for the subsequent entry of follow-up work. The part which I wish to emphasize is that this card is composed almost entirely of blank lines, thus obviating the necessity of noting any negative information, and allowing the examiner to put down all facts exactly as seems most desirable.

Fully as important as having our records in the simplest form, is the principle of confining our efforts to aims few enough in number so that we may accomplish definite and satisfactory results. It is very easy to over extend our activities and thus lose our effectiveness. There is hardly a month goes by but what I hear of some new line of health work among school children. While I do not mean to belittle the value of much of this work, we must remember that our resources are limited, school taxes are mounting, and the average school board is at present striving to curtail every expenditure. The enthusiasts for first aid, social hygiene, little mothers' classes, and a host of other things, must not be allowed to encroach upon our primary field. The law which established our present system of medical school inspection had for its object the detection and correction of physical defects, and it behooves us to see that this work is thoroughly carried out. If it is decided to enter into other fields of activity, it must be insisted upon that our organization

and budget be substantially enlarged so as to allow of undertaking such additional work in a satisfactory manner. Just at present we are hearing a great deal about nutritional work in the schools. There is no doubt that this work is of the utmost value in many regards, but there are several points that I wish to bring out in this connection. Tables of weights have been worked out in detail, based on the average taken from a large number of children. Now it is important to remember that these weights, from the very method by which they are obtained, are not normal weights, but average weights. Disregarding the small percentage who will exactly hit the average, there will of necessity be approximately 50 per cent of the children underweight, and that these children are below the average, by no means indicates that they are abnormal. We will leave the overweight child in the neglected obscurity to which our present tendencies have consigned him, and turn our attention to those under the average, who are now receiving most of our efforts. It has been assumed that any child who is 10 per cent under this average is to be considered pathological. It seems to me that this assumption is not warranted by the facts. For a child whose average is 50 pounds this allows a variation of only 5 pounds, and for one whose average is 100 pounds a variation of 10 pounds only. Insurance companies in general allow a much wider limit to their normal estimations, although the percentage in adults amounts to considerably more in actual pounds. Family tendency is entirely disregarded, as is also the normal development of the child, which leads first to an increase in length, following this to a corresponding increase in weight, and finally to a period of quiescence. During this constant readjustment of the growing body the relation of weight, height and age is very apt to be temporarily deranged, and these temporary variations should be considered as entirely physiological. Finally, the fact that statistics show that 20 per cent of children have a variation of 10 per cent or more below the average weight is the most conclusive argument to my mind that the defect is not in the nutrition of the child, but in the logic of our over zealous nutritional workers. However, there is no doubt that a certain proportion of our children are definitely undernourished, some to only a slight degree, and a few extreme cases to such an extent that unless they can be given special attention they cannot remain in school. For these extreme cases I think that our Boards of Education are justified in maintaining open air rooms, in which may be employed, under medical supervision, rest, fresh air, increased nourishment, and whatever other medical measures are indicated. By these means the schooling of the child can be continued and eventually he can be put back into the grades. By thus increasing the time which the child is able

to spend in school, the expense may justly be considered as along the lines of education.

Probably the largest factor in undernutrition is ignorance or carelessness of the families in regard to the simple hygienic rules of the growing child. I believe that room for the teaching of prophylaxis and hygiene should be made in our school program, and this teaching should be stressed especially with those children that show the need for it. This tendency has lately been growing in our schools, and it is to be encouraged by all means. The more elaborate schemes for nutritional classes, however, which entail extra feeding, are going to be very costly, they are distinctly outside the true scope of our educational department, and are decidedly paternalistic in their conception. A certain element of our population have come from countries whose governments were highly autocratic and paternalistic, and it is our duty to discourage ideas of reliance on the government for care in the personal and individual necessities of life.

As to the general routine of our work, I wish to say that the plan which we have found to be most advisable is briefly as follows: that the making of physical examinations shall devolve upon physicians, while the follow-up work in the obtaining of corrections shall be assigned to nurses, who shall act under the general supervision of the examining doctors. It seems to me the importance of having these examinations and recommendations made entirely by physicians and delegated in no particular to the nurses is sometimes not sufficiently recognized. This should be done for the following reasons: first, the nurse's training does not qualify her to give a sound medical opinion on the questions involved, and, second, the recommendations to have sufficient authority, should come from a duly qualified medical practitioner. The practice of having nurses give medical advice, even in minor conditions, would appear to be inherently wrong.

The attitude which the school nurses take in their work of getting corrections, is another matter of which I wish to speak. The fundamental idea we should have is the education of the community to the advantages of attention to the physical condition of the children. It has been my experience that people do not realize the benefits of this corrective work unless they themselves assume the responsibilities and sacrifices necessary to have it done. It is our principle to use compulsion only in extreme cases. For while a defect corrected under compulsion may have a salutary influence on the health of the child, I believe that the good is more than counterbalanced by the feeling of ill-will and discontent engendered. If, on the other hand, a parent can be made to see the advisability of a certain line of treatment and to assume the responsibility for the carrying out of this treatment, he will be quick to recognize its beneficial results and to become an advocate

of the system whose advice he has followed. While, on the one hand, we must not resort to compulsion, on the other hand, we must carefully avoid any tendency toward needless charity. A certain small proportion of the population, especially in our cities, is sometimes unable to assume the financial responsibilities necessary. Let us direct these people by all means as to how they may accomplish what is necessary in a manner within their means, but let us insist that it is the family that takes the initiative in the matter, and that they meet their financial obligation to the fullest extent possible. It is very easy to make use of our various charitable institutions in a thoroughly pernicious manner. As I said before, many of our citizens of foreign extraction are used to paternalism in government, and they lend themselves only too readily to the idea that our government has a responsibility in taking care of these matters for them. How often do we refer a child to a free clinic only to find out later that the family own their dwelling or have a substantial bank balance? Let it be our object to teach our people that they have a very real and personal duty in the proper upbringing of their children. They should think of the school doctors and nurses as their advisers in health matters, and not as a means of obtaining free medical attention. They must be taught that this country is not a supervising and protecting autocracy, but that in America it is the privilege and duty of every citizen to self-reliantly look out for himself.

Gentlemen, in this brief paper I have tried to bring out a few simple principles which I believe are essential to the best carrying out of our school medical work. If I have said little that is new, my only excuse is that in the preoccupation and distractions of our every-day life we sometimes lose sight of the underlying aims that should govern us, and it behooves us occasionally to pause a moment and observe whither we are drifting.

I have mentioned the necessity of spending our time in constructive work rather than in the keeping of too elaborate records, and of limiting our fields of endeavor to a few things that we can accomplish well rather than over-extending ourselves in the attempt to do more than we are fully equipped for. I have emphasized the importance of teaching the rules of health and hygiene, especially to those children who are undernourished, but I have tried to caution against a policy which will tend to take the responsibility for corrective measures and feeding from the place where it belongs—the home. I have spoken of my belief that the real value of this work lies in its educative possibilities—that we should avoid the use of force on the one hand and paternalism on the other, striving to teach our citizens their personal and individual responsibility in the health and physical welfare of their children.

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ST. LOUIS MEETING OF THE AMERICAN MEDICAL ASSOCIATION

The arrangements of the St. Louis profession for the meeting places for the session of the A. M. A., which is to be held in their city May 22 to 26 next, are singularly fortunate and convenient; never has the association been so well favored in this respect. The district in which the meeting is to take place is at the west edge of the business section of the city, easily accessible from all directions by street car or otherwise and not more than fifteen minutes street car ride from the most distant hotel. The grouping of the meeting places is so compact that should one walk from the Registration Building (Moolah Temple) to the farthest hall it can be done in ten minutes or less; from section to section is a matter of from one to five minutes. The convenience of the location and arrangements of the different halls is more outstanding than in any other city in which the association has met, and a decided improvement over the accommodations which were had at the meeting in St. Louis, 1910.

The Registration Office, Post Office and Commercial Exhibit is to be in the Moolah Temple (Shrine), a beautiful and commodious building on Lindell Boulevard, two blocks west of Grand Avenue. At the other extremity of the group is the Odean, the home of the St. Louis Symphony Orchestra, with a main hall which seats over 2,000, and several lesser halls. The main hall will be used for the opening session. Its acoustics are particularly good and suited to our purpose. The Sections on Practice of Medicine and of Diseases of Children meet here. In the assembly hall of the same building the Sections on Pharmacology and Therapeutics, and on Pathology and Physiology will meet. (It will be noted that there has been an aim to foregather closely allied sections.) The Sheldon Memorial, a very beautiful new hall on Washington Avenue one-half block west of Grand Avenue, which most admirably meets all requirements, will be the meeting place of the Sections on Ophthalmology, and Laryngology, Otology and Rhinology. The Section on Surgery, General and Abdominal, and on Obstetrics, Gynecology and Abdominal Surgery, will be held in the Third Baptist Church on Grand Avenue, a situation well suited to the demands. The Sections on Orthopedics and Nervous and Mental Diseases will meet in the Law School of the St. Louis University, on Lindell Avenue, a few steps west of Grand. The hall easily seats 500 and is both comfortable and convenient. Dermatology and Syphilis and Urology will use the large Union Methodist Church, on Delmar Avenue just west of Grand, which meets every requirement. The Sections on Gastro-Enterology, Proctology and on Preventive Medicine will use the large hall in the Musicians' Club on Pine Street, east of Grand Avenue, and next to the building of the St. Louis Medical Society, where the House of Delegates will hold its sessions. The Section on Stomatology is assigned to the assembly hall of St. Peter's Parish House, one block west of Grand on Lindell. Immediately in this district will be found three of St. Louis's most important clubs, the St. Louis, University and the Columbian. Restaurants catering to every grade of patronage are numerous in the district and precautions have been taken to insure that normal rates continue during the meeting.

The St. Louis profession is preparing for an unusual attendance; hotel reservations are coming in rapidly, but it is purposed that even the late comer shall be comfortably housed. The wise traveler, however, makes his reservation as early as he finds it possible. Dr. M. B. Clopton, 3525 Pine Street, St. Louis, is chairman of the Committee on Sections and Section Work.

NOTES FROM THE STATE DEPARTMENT OF HEALTH

MATERNITY AND CHILD HYGIENE

Among the important measures adopted by the Legislature on the last day of the 1922 session was the Davenport Bill, which makes an appropriation of \$130,000 and establishes a new Division of Maternity, Infancy and Child Hygiene in the State Department of Health. If the Governor approves this bill as is anticipated, New York will thereby take its stand among the states which have rejected the Federal Sheppard-Towner Act offering subsidies to state activities for the reduction of the mortality associated with childbirth. The Davenport Bill, however, together with the regular annual budget of the State Department of Health which carries an appropriation of \$30,000 for the existing Division of Child Hygiene, provides a total fund as large as would have been available if the state had accepted the Federal Law. It will be recalled that the New York State Medical Society supported the Davenport Bill, but opposed the Duell Bill which would have committed the state to the acceptance of the Federal Act. The State Commissioner of Health has refrained from participating in the discussion as to which plan should be adopted, believing that this was a matter of state policy to be determined by the Governor and Legislature, while the Department of Health should stand ready to carry out to the best of its ability any well considered program for the extension of the state's activities for the protection of mothers and children. Plans are now being made for the organization of the new work in anticipation of favorable action by the Governor.

SMALLPOX THREATENS NEW YORK

Eleven cases of smallpox have been reported in the state since the first of the year; four of these occurred in New York City, five near the Canadian border in Niagara and St. Lawrence counties and two in Suffolk County, Long Island. A threatening outbreak has occurred in Connecticut where there have been 257 cases since January 1st, many of them in Bridgeport, Bethel and other communities near the New York border. In this region active measures of protection have been instituted by the district Sanitary Supervisor and local boards of health in Putnam and Westchester counties, and it is gratifying that no cases have so far been reported from this part of New York State. It will be surprising, however, if the state escapes a more serious visitation, threatened as it is, not only from Connecticut, but from Canada where the disease has been prevalent for nearly a year. While smallpox has prevailed generally in mild form of recent years, it is to be noted that the virulent type has lately appeared in the west and that two fatal cases have occurred during the recent outbreak in Connecticut. It is never safe to assume that New York State will not experience a recurrence of the disease which will entail serious consequences. The department hopes that physicians generally will appreciate the present situation and advise their patients of the importance of vaccination.

A SIGNIFICANT LOCAL OUTBREAK OF INFLUENZA

A circumscribed outbreak of influenza in a sparsely settled farming district was recently reported by Dr. Frank Overton, Sanitary Supervisor for Long Island, under special conditions of restricted communication in winter weather which facilitated exact determination of the mode of infection. An eleven-year-old school boy came home ill on the day when a church sociable was to be held in his home. That evening 51 guests were crowded into the small house and the boy, unable to resist the attraction of the party, dressed and mingled with the company all the evening and then went back to bed with a typical attack of influenza. This was Friday evening and on Monday morning forty of those who had been present were ill with the disease. Of the

eleven who escaped several were old people who had had influenza previously. Dr. Overton points out how clearly this outbreak emphasizes the highly infectious nature of influenza at the onset, defines its incubation period, and warns us of the importance of trying to isolate the common cold, which may be due to any one of several known or unknown organisms, and may be the beginning of any one of a number of diseases varying from a slight cold to the severest form of pneumonia.

STATE ANTITOXIN IS FREE

In the course of a recent health survey in a rural county a physician who was asked whether he used the free antitoxin provided by the State Department of Health appeared suspicious of the investigator and was loath to answer any questions. It presently developed that this practitioner was suffering from the curious misconception that he was liable to prosecution and a fine if he used the state antitoxin in the case of any except an indigent patient. Probably such a mistaken notion is not widely held. In the effort to control diphtheria, which is clearly a proper function of the state, the earliest possible use of antitoxin is promoted by every available means, and to this end the department supplies free its own product made at the State Laboratory in Albany to anyone to whom it would be a hardship to purchase the remedy, and for any emergency, whatever the circumstances. It cannot be doubted that the state antitoxin is put to effective use and many lives undoubtedly saved by early administration of a preliminary dose when diphtheria is suspected. If the diagnosis is confirmed by the culture, patients whose financial circumstances permit it are expected to pay for any extra antitoxin that may be required.

HEALTH TALKS BY WIRELESS TELEPHONE

On Friday evening, March 24th, the Department began a series of popular health talks to be given weekly through the courtesy of the General Electric Company from the great radio station, "W G Y" at Schenectady. This is one of the most powerful wireless stations in the country, a part of the program on the evening referred to having been picked up on the Pacific Coast. Those who hear the department's health messages are asked to send in postal cards, and already it has been learned that the first address was heard in Maine, Pennsylvania, Massachusetts, Ohio, Michigan and Canada as well as in New York State. The recent development of interest in the wireless telephone has been so enormous that the manufacturers can scarcely meet the demand for sets of the receiving apparatus for amateur use. It is impossible to estimate the number of stations in New York State which will regularly pick up the department's health lectures. Moving picture theatres are beginning to install apparatus so that the whole audience can hear the radio programs, and it is obvious that a new channel of public health education has been opened up. The United States Public Health Service began a series of health talks by radio last December, but so far as is known New York is the first state to institute an official service of this kind as a function of the State Health Department.

NATIONAL BOARD OF MEDICAL EXAMINERS.

The dates for the next two examinations of the National Board of Medical Examiners are as follows:

Part I and II, June 19, 20, 21, 22, and 23, 1922.

Part I and II, September 25, 26, 27, 28, and 29, 1922.

Applications for the June examinations should be in the Secretary's Office not later than May 15th, and for the September examination not later than June 1st. Application blanks and Circulars of Information may be had by writing to the Secretary, Dr. J. S. Rodman, 1310 Medical Arts Building, Philadelphia, Pa.

OPPORTUNITIES FOR SERVICE IN VENEREAL DISEASE CLINICS

Many applications for assistants in venereal disease clinics have been received by the Associated Out-Patient Clinics. These positions are both for men and women, graduates and students. In most instances physicians with no special training in venereal disease will be considered. Any physicians who desire an opportunity to learn this specialty, should communicate with Dr. Alec N. Thomson, 15 West 43rd Street, New York City.

The Section on Venereal Diseases of the Associated Out-Patient Clinics, of which Dr. Thomson is Secretary, has offered to act as a clearing house for information regarding opportunities for dispensary assistants in the venereal clinics in New York City.

The above applications for assistants came in reply to a letter and questionnaire recently sent to the directors of the various venereal disease clinics, inviting them to state their needs for assistants and to specify not only the qualifications desired, but the clinical and professional opportunities offered.

SOME PSYCHOLOGISTS

To the Editor of the NEW YORK STATE JOURNAL OF
MEDICINE:

The meaning of this title depends altogether upon whether you place the accent upon the first or second word. Take your choice.

For some time a group of lecturers, who speak of themselves as "we applied psychologists," have been attracting crowds of people to the churches which have opened their hospitable doors to the free course of instruction on how to live, which is followed by a private course for a fee, during which the "esoteric formulae" are imparted. It is a matter of great satisfaction to be told by them that there *is* such a thing as a physical body, and one wonders if this statement is made to show one of the differences between their work and Christian Science.

The whole course is the story of the subconscious mind. There is much of good in these talks in spite of the fact that you are frequently reminded of the late Elbert Hubbard, who was not altogether a safe guide for physicians. The talks on personal hygiene are good and for the most part safe—subject to some qualification for the individual. The message of optimism is one always to be welcomed. The possibility of giving relief to functional neuroses by psychotherapeutic measures, and of increasing the helpfulness of physical remedies by "calling upon the subconscious mind" has been recognized and employed for years by most progressive physicians who were also competent psychologists,—only they do not announce it in great red, white, and blue signs.

One should approach every subject with an open mind—certainly never with either malice or ridicule. If one is disposed to smile at the statement that gray hair may be restored to its normal color by the power of the subconscious mind, at least one can be willing to be shown.

Are there any objections to this work? Well,—yes. Here are a few of them.

The air of mystery thrown about the statement of certain secrets to wonderful *power* attracts the masses. Perhaps some of them get the *power*; they seem to get a certain assurance. But psychology has no secrets when once theories have become known facts.

It is always a mistake to attempt to teach people—including physicians—"to become your own physician," although it is always a good thing to teach people the laws of health. The lawyers have a saying regarding the attorney who conducts his own law case; it might be applied with a slight change to the physician who attempts to treat himself when sick.

It is an absolute wrong to lead one's followers to believe that by following the instruction given in the private class he may cure himself of cancer and certain other organic diseases. If true it has not yet been demonstrated and should be before being placed before the public. Will any psychologist take the responsibility of three months' delay in a case of malignant disease because of such teaching?

And what will be said of the intimation that application to certain rules may be followed by the development of "clairvoyance, clairaudience, and telepathy"? If true is it desirable that people generally seek such power?

To some people this work may seem to have a commercial aspect. So far as a lecturer on psychology is giving the public helpful instruction no money value can be placed upon his services—he should be welcome to all he can make. But to just the extent that he is inferring or suggesting "get rich quick" methods his work is vicious.

It is nothing that the chief lecturer is said to be a contributor to a magazine devoted chiefly to what is called "Chiropractic." Are not members of the State Society said to be among the teachers in a local chiropractic school—and, so far as known, with no loss of self-respect?

"Have you ever found out the actual cause of disease?"—ask the psychologists. If not consult them and learn that disease is a "state of mind"—the subconscious mind.

Because an idea contains an important truth it must not, therefore, be concluded that it contains all the truth.

EDWARD S. STEVENS, M.D.

Deaths.

BIRD, JAMES R., Brooklyn; College of Physicians and Surgeons of New York, 1858; Member State Society; Consulting Physician St. John's Hospital. Died March 27, 1922.

CHAMBERS, PORTER FLEWELLEN, New York City; Bellevue, 1876; Fellow American Medical Association; Fellow American College of Surgeons; Member State Society; Academy of Medicine; New York Obstetrical Society; Alumni Presbyterian and Woman's Hospitals; Consulting Surgeon Woman's, French and Southampton Hospitals. Died March 26, 1922.

CLOTHIER, WILLIAM P., Buffalo; University of Buffalo, 1875; Member State Society. Died February 5, 1922.

FAIRBANK, ALEXANDER W., Chazy; Albany Medical College, 1874; Fellow American Medical Association; Member State Society. Died February 18, 1922.

RAPP, SAMUEL, New York City; Bellevue, 1875; Fellow American Medical Association; Member State Society. Died March 20, 1922.

RUSSELL, YORK, New York City; Howard, 1898; Member State Society. Died March 11, 1922.

SAUER, CHARLES THEODORE, Brooklyn; Long Island College Hospital, 1885; Fellow American Medical Association; Member State Society; Assistant Laryngologist Methodist Hospital. Died March 28, 1922.

WICKER, FREDERICK A., Livonia; Buffalo Medical College, 1888; Fellow American Medical Association; Member State Society. Died February 25, 1922.

Medical Society of the State of New York

ANNOUNCEMENT

The luncheon of the "Associated Secretaries of the State of New York" will be held at Albany, Wednesday, April 19th, at the Adelphi Club, at 1 o'clock.

AMENDMENTS TO THE CONSTITUTION WHICH WILL BE PRESENTED FOR ACTION AT THE NEXT ANNUAL MEETING OF THE HOUSE OF DELEGATES

Amend the Constitution, Article IV, by striking out the words, "each county society shall be entitled to elect to the House of Delegates as many delegates as there shall be State Assembly districts in that county at the time of election, except that each county society shall be entitled to elect at least one delegate, and except that whenever at the time of election the membership of a county society shall include members from an adjoining county or counties in which there shall be no county society in affiliation with this society, such county society shall be entitled to elect from among such members, as many additional delegates as there are assembly districts in the county or counties so represented in its membership."

And inserting the words: "The delegates shall be apportioned among the constituent societies in proportion to their actual active membership, except that each constituent society shall be entitled to elect at least one delegate. The House of Delegates may from time to time fix the ratio of apportionment."

County Societies

TOMPKINS COUNTY MEDICAL SOCIETY,

REGULAR MEETING, ITHACA, N. Y.,

MARCH 11, 1922.

The March meeting was called to order in the rooms of the Zonta Club. The President, Dr. J. E. Wattenberg in the chair.

The minutes of the February meeting were read and approved as read. The report of the Comitia Minora was presented by reading the minutes of the Comitia.

The application of Dr. Abram Chase of Ithaca was received and having been approved by the Board of Censors he was elected to membership in the State and County Societies.

The following resolutions upon the death of Dr. Elma C. Griggs were presented, read and ordered spread upon the minutes:

"In the death of Dr. Elma Griggs, on February 24, 1922, the Tompkins County Medical Society has lost a valued member, a zealous colleague of high standing in her profession and one who was tireless in her efforts in behalf of the sick and afflicted.

"Dr. Griggs was graduated from the Hahnemann Medical College of Chicago in 1889 and came to Ithaca to engage in practice in 1890. She was a member of the American Medical Association, the State and County Medical Society, and The American Association of Homeopathy. For many years she was medical examiner of the students at Sage College. She had a large number of personal friends, and there has probably never been a physician in Ithaca more beloved by their clientele.

"Dr. Griggs was a typical 'family physician' of the old school. She had a strong personality, and controlled her patients to a remarkable degree. She was not only the physician, but usually the firm family friend and advisor. She had always the courage of her conviction and upon occasion expressed her opinion of what was right and wrong in no uncertain terms. To those she liked, she was a warm friend.

"Now, therefore, the Tompkins County Medical Society deeply sensible of its loss, in sorrow for the passing of Dr. Griggs, honoring her for her talents and services and with profound sympathy for her family and friends, adopts these resolutions and orders them spread on the minutes of the Society as a permanent record of regret and respect.

"Committee for the Tompkins County Medical Society."

R. M. VOSE,
J. W. JUDD,
H. P. DENNISTON.

A communication was read from Prof. G. W. Cavanaugh, Professor of Chemistry in Cornell University, extending an invitation to the members of the Society to attend a lecture on "Vitamines," by Prof. R. Adams Dutcher, Professor of Chemistry at the State College of Pennsylvania, to be given in Rockefeller Hall, Friday evening, the 24th.

SCIENTIFIC SESSION.

"Asthma and Hay Fever, Their Diagnosis and Treatment," by William C. Thro, M.D., Professor of Clinical Pathology at Cornell University Medical College, New York City.

The Doctor presented the subject very interestingly and in much detail, especially from its scientific aspect and was listened to with marked attention.

The paper was ably discussed by Drs. E. E. Parkcr, J. W. Judd, A. G. Gould and E. L. Bull.

"Some Surgical Treatments of Mental Conditions," by R. M. Vose, M.D., of Ithaca, N. Y.

This paper took up the treatment of cases of psychoses in which no organic brain lesion was present and showed how many cures had been accomplished by the surgical removal of sources of focal infection.

The paper was discussed by Drs. Wilber G. Fish, J. S. Kirkendall and E. E. Cary.

THE MEDICAL SOCIETY OF THE COUNTY OF GENESEE.

The meeting of the Genesee County Medical Society convened at the Holland Club, Batavia, N. Y., on March 15, 1922, at 4 P. M.

Business Meeting—Dr. J. W. Le Seur gave a short résumé of the condition of the Medical Legislation pending at Albany.

The Membership Committee reported favorably on the name of Dr. Stanley R. Hare of Batavia for election to membership. Election of officers: President, Dr. Van S. Laughlin, Darien, N. Y.; Vice-President, Dr. August H. Stein, Oakfield, N. Y.; Secretary-Treasurer, Dr. C. L. Davis, Batavia, N. Y. Present Board of Censors, Dr. J. W. Le Seur, Dr. H. M. Spofford, were continued.

The name of Dr. Cole of Le Roy was proposed for membership and referred to membership committee.

SCIENTIFIC PROGRAM.

Dr. Harry R. Trick, of Buffalo, read a paper on "Pancreatitis." Discussed by Dr. W. D. Johnson and Dr. Aaron of Buffalo.

Dr. Henry Adsit, of Buffalo, read a paper on "Pyelitis and its treatment by local irrigation of Agno and Mercurochrome and internal administration of Urotropin." Discussed by Dr. W. D. Johnson, Dr. H. M. Spofford and Dr. Aaron.

Dr. Loren Manchester reported a case of hand infection with amputation of finger and presented the case for examination.

Dr. August Stein, of Oakfield, reported a case of complete inversion of the uterus in a primipara with a method of manual dilation of the cervix through the abdominal wall with replacement.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

BOOK ON THE PHYSICIAN HIMSELF FROM GRADUATION TO OLD AGE, by D. W. CATHELL, M.D. This is the vastly improved Crowning Edition. Published by the Author, Emerson Hotel, Baltimore, Md. 1922.

THE PSYCHIC HEALTH OF JESUS, by WALTER E. BUNDY, Ph.D., Associate Professor of English Bible in De Pauw University. The Macmillan Company, New York. 1922.

SEX SEARCHLIGHTS AND SANE SEX ETHICS, An Anthology of Sex Knowledge, edited by Dr. LEE ALEXANDER STONE, Chief of Bureau of Hospital Control, Social and Industrial Hygiene, Chicago Health Department, etc. With special drawings by Don Chilcote. Price \$7.00. Science Publishing Company, Chicago, Ill. 1922.

NUTRITION AND GROWTH IN CHILDREN, by WILLIAM R. P. EMERSON, A.B., M.D., Professor of Pediatrics, Tufts College Medical School; President, Nutrition Clinics for Delicate Children, incorporated; Medical Adviser, Elizabeth McCormick Memorial Fund, Chicago; Visiting Physician (in charge of Nutrition Clinic), Children's Out-Patient Department, Massachusetts General Hospital, Boston. Illustrated. D. Appleton and Company, New York. 1922.

CANCER AND ITS NON-SURGICAL TREATMENT. By L. DUNCAN BULKLEY, A.M., M.D., Senior Physician to the New York Skin and Cancer Hospital, Member of the American Association for Cancer Research. William Wood and Company, New York, 1921. Price, \$6.00.

AN ESSAY ON THE PHYSIOLOGY OF MIND. By FRANCIS X. DERGUM, M.D., Ph.D., Professor Nervous and Mental Diseases, Jefferson Medical College, Philadelphia. 12mo. 150 pages. Phila. and London: W. B. Saunders Co., 1922. Cloth, \$1.75 net.

PRACTICAL INFANT FEEDING. By LEWIS WEBB HILL, M.D., Junior Assistant Physician, Children's Hospital, Boston; Assistant in Pediatrics, Harvard Medical School. Octavo 483 pages, illustrated. Philadelphia and London: W. B. Saunders Co., 1922. Cloth, \$5.00 net.

THE SURGICAL TREATMENT OF NON-MALIGNANT AFFECTIONS OF THE STOMACH. By CHARLES GREENE CUMSTON and GEORGES PATRY, M.D., Lecturers University of Geneva and Members Surgical Society of Switzerland. Introduction by Sir BERKELEY G. A. MOYNIHAN, K.C.M.G., C.B., M.S., Professor Clinical Surgery, University of Leeds. J. B. Lippincott Co., Philadelphia, Pa. \$5.00.

TUBERCULOSIS IN INFANCY AND CHILDHOOD. Lectures delivered at the Children's Hospital, Philadelphia, under the auspices of the Philadelphia Pediatric Society by J. CLAXTON GITTINGS, M.D., Professor Pediatrics, Graduate School of Medicine, University of Pennsylvania, and FRANK CROZER KNOWLES, M.D., Professor Dermatology, Jefferson Medical College and Astley P. C. Ashhurst, M.D., Associate Professor Surgery, School of Medicine, University of Pennsylvania. 23 illustrations. J. B. Lippincott Co., Philadelphia, Pa. \$5.00.

OPiate ADDICTION, ITS HANDLING AND TREATMENT. By EDWARD HUNTINGTON WILLIAMS, M.D., formerly Associate Professor of Pathology, State University of Iowa; Assistant Physician, New York State Hospital System. The Macmillan Co., New York. 1922.

Book Reviews

THE ANATOMY OF THE HUMAN ORBIT AND ACCESSORY ORGANS OF VISION. By S. ERNEST WHITNALL, M.A., M.D., B.Ch. (Oxon); M.R.C.S., L.R.C.P. (Lond.); Prof. of Anatomy, McGill University, Montreal. Illustrated largely by photographs of actual dissections. Henry Frowde and Hodder & Stoughton, London. 1921.

This is a well written book of over four hundred pages, and is of the greatest interest and importance not only to ophthalmologists but to rhinologists as well. For the accessory sinuses and nasal cavity itself are briefly described, while their relations to the orbit and its structures are told in detail. One should almost know this book by heart.

It is divided into four parts: Osteology. Eyelids, Contents of the orbit and appendix, the latter describing the cerebral connections of the nerves. There are 195 excellent illustrations, many borrowed from other writers, but a great number from original dissections and preparations. The material has been collected from a wide variety of sources, and due credit is given to an extensive bibliography at the end of the book. The subject is covered in the greatest detail, and it is safe to say that every reader will find something in these pages which he did not know before.

E. CLIFFORD PLACE.

READINGS IN EVOLUTION, GENETICS, AND EUGENICS. By HORATIO HACKETT NEWMAN. The University of Chicago Press, Chicago, Ill. 1921. Price, \$3.75.

The author is Professor of Zoology in the University of Chicago, and for the past sixteen years has lectured on the subject of this book. He has met a long felt want by so well combining the three correlated subjects into harmonious complements, and exemplifying in his method the very development of which he writes. To many, each of these subjects is a complete study—but evolution without genetics is headless, and genetics without eugenics is heartless. So when the reader finally reaches the last part, dealing with the human aspect, he is ready to go over the earlier chapters again to appreciate that the what and how merely is the scaffolding which has given him the ability to see far, think high, and feel deeply as a man about the other man.

Besides, in a judiciously comprehensive fashion, the author looks around, about, above, below, and even askance at the popular ideas of evolution. He reminds the reader that there are many misconceptions of the content, and differences between the earlier and the later theories, as well as limitations, uncertainties, disagreements, dogmatic assumptions, bigotry and shortsightedness commingled in the discussions of the theory. He takes issue with the atheistic position of many of its expounders, holding and teaching that it can be readily harmonized with theistic sympathies.

The work is in five parts—introductory and historical, evidential, critical, and the latter half, in almost equal portions, genetics and eugenics. Much is original work, summaries of lectures; many of the chapters are excerpts from other writers. The whole is really a fine example of how one man has welded others' and his own thoughts into a clear exposition. The teacher's clarity is manifest, and his teaching method. While the author distinctly claims only editorship, he is justified in feeling that he has given to both the ordinary and the special reader a compendium of the salient facts of the subjects, and has been conspicuously successful in presenting them from such angles that one may feel that the work is a résumé of the modern conceptions of evolution directed to practical evaluation.

A. F. E.

THE INTESTINAL PROTOZOA OF MAN. By CLIFFORD DOBELL, M.A., F.R.S., and F. W. O'CONNOR, M.R.C.S., L.R.C.P., D.T.M., & H. Eight colored plates. Published on the Medical Research Council, John Bale, Sons & Danielson, Ltd., London, W. I., 1921. Price, 15 shillings.

This small book is a complete yet concise review of the entire subject of which it treats and is particularly valuable and authoritative because its authors are a zoologist (Dobell) and a clinician (O'Connor), both of whom have had extensive experience in the tropics. The illustrations are excellent and in combination with the text give the reader a clear conception of the distinguishing characteristics of the various amoebæ, coccidia, flagellates and ciliates which grow in the human intestine.

A very valuable chapter on diagnosis goes fully into the details necessary to obtain satisfactory specimens for examination and the methods of preparation, staining and preservation of slides.

The chapter on treatment reviews the literature to date of publication, and reveals the fact that there is much need for improvement in methods of treatment.

The final chapter, on the "Coprozoic Protozoa of Human Feces," based on Dobell's original researches, is of value in calling attention to the importance of differentiating between protozoa which have been growing within the intestine and those which have developed in the feces after expulsion.

It would be well if all authors writing on the subject of intestinal protozoa would use the nomenclature recommended in this book.

A. F. R. A.

TWELVE ESSAYS ON SEX AND PSYCHOANALYSIS. By WILHELM STEKEL, M.D., Vienna. Translated and edited by S. A. TANNENBAUM, M.D., New York. Critic and Guide Company, 1922, New York.

One can only say that these essays are of very doubtful value. For the trained psychoanalyst will hardly be enriched by them; and one would hesitate to recommend them to the average reader, who merely wishes to glean something of psychoanalytic principles.

Inasmuch as we continually emphasize that the aim of psychoanalysis is sublimation (a refining), the general reader would be rather disappointed by some of the strange routes to sublimation suggested in these essays.

The teachings of White, Jelliffe and similar writers are safer to follow. They always tread on safe ground. In dealing with a neurotic patient's difficulties, I think it was Kempf who said, in giving advice the physician must always keep in mind the social obligations and also the dignity of the profession, and especially that he must not recommend anything which would be out of harmony with the ethical and moral standards of the environment. The majority of physicians would be greatly opposed to many of the suggestions given in this book. Stekel's radicalism, as shown by these writings, is pronounced. So, in spite of the fact that he knows his theory well, his therapeutic recommendations would make him a bad teacher to follow.

J. F. W. MEAGHER.

THE LIFE OF JACOB HENLE. By VICTOR ROBINSON, M.D., Editor of *Medical Life*. The first biography in the English language of one of the makers of modern medicine. Medical Life Company, 12 Mount Morris Park West, New York, N. Y., 1921. Price, \$3.00.

The life of Henle as told by Dr. Robinson is as fascinating reading as one of the "best seller" novels.

The literary style, sentiment and the humanity makes it a book that should be read and owned by all medical men. It is stated on the cover that this is the first biography in the English language of one of the makers of modern medicine. If this is true, the reviewer hopes that there will be many more biographies of the makers of modern medicine from the versatile pen of the author.

J.

PITFALLS. By A. J. CAFFREY, M.D., Instructor in Physiology at Milwaukee Medical College from 1901 to 1910. Assistant Professor of Medicine at Marquette University School of Medicine from 1913 to 1920. The Gorham Press, Richard G. Badger, Boston, Mass., 1921.

This book is a collection of experiences and stories taken from the professional life of a physician.

The author has evidently attempted to imitate Conan Doyle's book of medical stories, "Around the Red Lamp," but unfortunately the writer has not the facility of pen or English as has Doyle. The pitfalls mentioned are neither unusual nor instructive, consequently it is feared the book will not have a great vogue among medical readers.

J.

BACTERIOLOGY: GENERAL, PATHOLOGICAL AND INTESTINAL. By ARTHUR ISAAC KENDALL, B.S., Ph.D., Dr.P.H. Second Edition, thoroughly revised. Octavo of 680 pages, illustrated with 99 engravings and 8 plates. Philadelphia and New York, Lea & Febiger, 1921. Cloth, \$6.00.

The Reviewer finds this a really excellent text-book on bacteriology. It is as thoroughly up to date as it is possible to bring such a work. It is arranged in the usual manner, first chapters on general characteristics and methods, then descriptions of the various groups of bacteria, finally chapters on intestinal bacteria and examination of water, milk and soil.

E. B. SMITH.

RINGWORM AND ITS SUCCESSFUL TREATMENT. By JOHN P. TURNER, M.D., 12mo. of 62 pages with 8 illustrations. Philadelphia, F. A. Davis Company, 1921. \$1.00.

The history, diagnosis, differential diagnosis, pathology and treatment of the common variety of ringworm, *trichophyton tonsurans*, is discussed at considerable length in this little book. The differential diagnosis is of little value because it differentiates between diseases that should never be mistaken for ringworm and fails entirely to call attention to *favus*, a disease that is often mistaken for *tinea*, even by the expert.

The value of the book lies in the intensive method of treatment recommended by the author.

W.

PRINCIPLES OF MEDICAL TREATMENT. By GEORGE CHEEVER SHATTUCK, M.D., A.M., Assistant Professor Tropical Medicine, Harvard Medical School. Fifth Revised Edition. With contributions on Tuberculosis, JOHN B. HAWES, 2nd, M.D.; Acute Infectious Diseases Most Common in Childhood, EDWIN H. PLACE, M.D.; Influenza, GERALD BLAKE, M.D.; Diabetes Mellitus, BENJAMIN H. RAGLE, M.D.; Serum Treatment of Pneumonia, HENRY M. THOMAS, JR., M.D. W. M. Leonard, Inc., Boston, Mass., 1921.

The fact that this book has gone through five editions is sufficient proof that it has a decided value. The scope of the volume has been enlarged and this edition contains, in addition to other changes the following contributions, "Tuberculosis," by John B. Hawes, 2nd, M.D.; "Acute Infectious Diseases Most Common in Childhood," by Edwin H. Place, M.D.; "Influenza," by Gerald Blake, M.D.; "Diabetes Mellitus," by Benjamin H. Ragle, M.D.; "Serum Treatment of Pneumonia," by Henry M. Thomas, Jr., M.D. The value in this book is in its summaries of treatment of the various conditions. The experience of the reader will enable him to use what is tabulated in this book in connection with his own personal treatment of the case under treatment. Printing on one side of the page leaves a clear page which may be made valuable by filling in one's own preferences of treatment. This work is a concise, carefully written, accurate summary of treatment and its use can be recommended. It is well printed on good paper and easy to read.

H. M. M.

THE WASSERMAN TEST. By CHARLES F. CRAIG, M.D., M.A., F.A.C.S. Second edition, revised and enlarged. Illustrated with colored plates, halftone plates, and sixty-one tables. C. V. Mosby Co., St. Louis, 1921. Price, \$4.25.

The reviewer believes that the second edition of this work deserves somewhat more than the usual routine notice. It is insufficient simply to state that this edition has been brought up to date and merits careful reading. The reviewer believes it contains a message of importance to the practising physician as well as to the serologist. It has become fashionable, of late, to deprecate the value of the Wasserman test. It is, therefore, refreshing to read Col. Craig's simply-worded, sane and logical exposition of the value and limitations of this test. The first half of the volume deals with details of technic, including the newest devices and methods, which would interest only the serologist; but the latter half, containing a discussion of the interpretation of the test, should be read by everyone. Col. Craig's experience and reputation are such as to give weight to all he says. His sane and temperate discussion is most impressive. We venture to state that some of the facts and figures will be startling to many of the medical public.

E. B. SMITH.

THE SHIBBOLETHS OF TUBERCULOSIS. By MARCUS PATERSON, M.D., Medical Superintendent of the Brompton Hospital Sanatorium, Frimley; Resident Medical Officer, Brompton Hospital, London. Published by E. P. Dutton & Company, New York City. 1920. Price, \$5.00.

This book, the product of a man who has devoted many years of his life to the subject of tuberculosis in a most practical way, should commend itself to every practitioner of medicine regardless of what branch of the subject he may be especially interested in. The text consists of fifty-nine rather brief chapters each dealing with what the author believes to be a misconceived or distorted idea concerning tuberculosis, together with a preface and a chapter given to conclusions. In nearly every instance he has hit the nail on the head. We know of no other book in which this task has been accomplished so thoroughly and fearlessly.

In a book abounding in so much that is good, it is perhaps inevitable that there appear a few views stated in a manner too radical for universal acceptance. Exception may be very well taken to his contention that "it is futile to sterilize milk for children, whilst feeding them on butter and cheese, both equally capable of spreading disease." Such an argument reduced to final analysis, means, if it means anything, that it is futile to take any step in the direction of the control of infection. Nor do all workers accept without very definite reservations the author's views upon the application of auto-inoculation by graduated labor as exemplified by him. To put it mildly, they are regarded by many phthisiographers as being very extreme.

Apart from these few instances, the author is most convincing and always entertaining. His style is an attractive one. It is a highly readable tome.

FOSTER MURRAY.

PRACTICAL MASSAGE AND CORRECTIVE EXERCISES. WITH APPLIED ANATOMY. By HARTVIG NISSEN. Fourth Revised Edition. 68 Original Illustrations. Several Full-Page Halftone Plates. \$2.00. F. A. Davis Co., Philadelphia, Pa. 1920.

Mr. Nissen is an authority of long experience and widespread reputation, and his book is based upon forty-five years of study and practice of the so-called Swedish Movements.

A short history is included in the text, which recalls that the Swedish system was evolved early in the nineteenth century by Pehr Henrik Ling, who was

the first president of the Royal Gymnastic Central Institute established in Stockholm in 1813.

The indications and technic of this system of massage are gone into in detail and illustrated so as to render easy an understanding of the reading matter.

A manual of this kind is of the greatest practical value in the actual treatment of cases, and provides very little interesting reading on the theory of the subject.

Consequently, its value is limited to its use as a guide to the practical application of this form of massage to actual cases.

W. H. DONNELLY.

PHYSIOLOGY AND NATIONAL NEEDS. Edited by W. D. HALLIBURTON, M.D., LL.D., F.R.C.P., F.R.S., Professor of Physiology, King's College, London. Published by E. P. Dutton & Co., New York. 1919. Price, \$4.00.

This little volume is made up of six articles which are the outcome of a series of public lectures recently delivered under the auspices of the Imperial Studies Committee of the University of London, and having for their object stimulation of interest, on the part of the public, especially the political public in the real value of physiologic science to the people of a nation, alike in peace and in war.

The subjects dealt with are food and feeding problems, some of the contributions of physiology to practical medicine and hygiene, grain conservation, and, finally, the outdoor life. These subjects are discussed in simple unequivocal language, on the basis of broad scientific principles, but from a distinctly utilitarian viewpoint, by men who have detailed knowledge of them, the authors represented being sufficient guarantee of this statement. W. D. Halliburton, F. Gowland Hopkins, A. Harden, D. Noël Paton, Arthur Dendy, and M. S. Pembrey have each contributed an article.

Authors and publishers alike are really serving the people by publishing a book such as this.

J. C. C.

PHYSICAL DIAGNOSIS. By W. D. ROSE, M.D., Second Edition. 309 illustrations. C. V. Mosby Co., St. Louis, 1921. \$8.50.

This volume has been largely rewritten and supplemented with recent advances. It is divided into four parts: Thorax; Abdomen; Head, Neck and Extremities; and Nervous System. Each part affiliates the anatomy, pathology, and the physical signs, together with a short description of the physical principles involved, aiding the interpretation of these signs. The accompanying illustrations are both diagrammatic, and representations of pathological specimens. A brief chapter is devoted to radiographic examinations. The book is conservative, and it is well printed throughout, with admirable paragraphing in larger type print of the various physical conditions. Both the physician and the under-graduate desiring a quick review or reference, either of the normal or abnormal, will find it here, treated in a satisfactory, complete and condensed form.

A. T. MAYS.

VICE AND HEALTH, PROBLEMS—SOLUTIONS. By JOHN CLARENCE FUNK, M.A., LL.B., Director, Bureau of Protective Social Measures, Pennsylvania State Health Department; Scientific Assistant, U. S. Public Health Service; Supervising Inspector, U. S. Office of Naval Intelligence. Philadelphia and London, 1921. J. B. Lippincott Co.

One of the most sane, brief, and encouraging books by a well-balanced man of large experience that it has been our good fortune to read in a long time. We have ordered a copy for permanent use.

STURDIVANT READ.

DISEASES OF THE SKIN. By HENRY W. STELWAGON, M.D. Ninth Edition, revised. Assisted by HENRY K. GASKILL, M.D., attending dermatologist Philadelphia General Hospital; 401 pages, illustrations and half-tone plates. Phila. and London. W. B. Saunders Co., 1921. Cloth, \$10.00 net.

The ninth edition of this book which is a revision of the former edition, was completed by Dr. Gaskell after Dr. Stelwagon's death. He has clung tenaciously to the same principles which made the author's original text so valuable to students of dermatology.

In this edition there has been a great deal of superfluous wording left out, leaving only essential facts. This has been done so as to keep the volume as small as possible in spite of the addition of a few new diseases, numerous new plates, and also some revisions and additions in the general text made necessary by the advances of dermatology since the last revision.

The book is entirely commendable as a work from one of our best dermatologists, and revised by one thoroughly imbued with the ideas of the author. E. A. G.

PRACTICE OF MEDICINE. By HUGHES DAYTON, M.D. Fourth Revised Edition. 12mo of 328 pages. Philadelphia and New York, Lea and Febiger, 1921. \$2.25.

The fourth edition of Dayton's well known manual has been revised to keep abreast of the progress of our knowledge of certain infections and the newer description of certain cardiac disturbances.

The arrangement of subject matter and the typographic work make the book easy to consult and the careful, concise statements satisfy the mind in search for information. W. S. H.

FASTING AND MAN'S CORRECT DIET. By R. B. PEARSON, Construction Engineer. 12mo of 153 pages. Chicago, Illinois. Published by the Author, 1921.

This book gives the experiences of the author in his experiments upon himself during his search after health, or as he expresses it, in his attempt to cure his catarrh by his own methods. His experiences and his various attempts at fasting as recorded give an interesting insight into the mental processes of the author. He feels that, as his years of experiment upon himself have not injured his health, this method of procedure will cure much of the so-called and unnecessary disease. The author quotes much from certain literature to uphold his theory, but his mind seems not to be receptive to any writing contrary to his beliefs, and instead of pointing out the errors of others by proof of his own theories, he resorts to what is commonly known as Billingsgate. The reviewer does not wish to be unjust in his reviews of this book and therefore, will quote from it and leave the reader to decide the mental attitude of the author. From the introduction, "The writer's experience has satisfied him most thoroughly that germs are scavengers, that they never caused any disease whatever, and that all germs in the body, as scavengers, will die out and be eliminated as fast as the decomposed tissue or food that they live on is consumed or removed, and he has also become convinced that the quickest and safest way to cleanse the system is by fasting and using enemas. In fact, it seems almost unbelievable to the writer that, in view of the large amount of evidence that now exists that germs are scavengers, that anyone should at this late date believe otherwise. In the writer's opinion it is utterly astonishing that the so-called "Regular" School of Allopathic Physicians, as represented by the American Medical Association, should be so profoundly ignorant of the laws of Nature with which they have to deal as they are at present. The whole structure of the Allopathic (A.M.A.) treatment of disease is built on absolutely false grounds." Then follows a series of erroneous statements, with the following statement: "He has not so much hope

of converting the Allopaths, but wishes to reach the general public instead, and believes the treatment of disease should be confined to such drugless schools of medicine (?) as the Naprapaths, Osteopaths, Chiropractors, etc.; those Allopaths who believe in the germ theory and surgery as a cure of disease, being barred from practice entirely." This also in the Introduction, "He also begs the reader's indulgence as to any inaccuracies that may be found, the book written largely in evenings and spare moments, in hope it might serve merely as a stepping stone to better health to many who like himself have suffered for years from ill health without getting aid from the so-called regular "physicians." It would be of interest to quote some statements from this book, but too much useful space would be needed; a few more quotations will best illustrate the medical or scientific value of this book. On pages 16 and 17 we find, "During the later intervals between the fasts he found that an enema and a little fasting would entirely cure the toothache, due to lack of attention to cavities in teeth, and toward the end of the complete fast the mouth, which had been very foul for some time, had some remarkable changes. Teeth with black cavities became white and clear, all decay seemed to be arrested by the fast, and there were no more toothaches, until he had overeaten for a considerable length of time." "Another strange thing that occurred was that during the first week or two after this fast it was absolutely impossible to catch cold. Mosquito bites, which had always caused large swellings and severe itching in the past, entirely lost their power to do so. Even hornet stings, which in the past had caused severe inflammation lasting for a considerable length of time, did not cause any inflammation, swelling or itch." On page 37 we find, "However, we find in that germ-swatter's Bible:—The Journal of the American Medical Association." The author's statement on chest conditions, page 49, needs no comment: "The present writer believes that all lung diseases, from catarrh and plain colds to pneumonia and consumption, are merely an effort of the body to throw off through the lungs decayed material or body refuse, that should naturally be eliminated through the bowels, but because of these being clogged by prolonged overloading, the body makes a last desperate effort to eliminate these poisons through whatever other route is available, and as the blood naturally flows to the lungs for oxygen after supposedly depositing all its refuse material in the natural organs of elimination, it would naturally carry poisons along if it were unable to clear itself of them because of the foulness of the bowels." His treatment of these conditions, given on page 51, continues in the same general line. It would be a waste of valuable space to quote many of the author's theories. Following the plan of many of this kind of writer, an infallible cure for tumors and cancer is suggested.

In reviewing this book on diet, the expression about giving one "enough rope, etc." comes to the mind of the reviewer, because on page 86, we find "the writer believes enemas comprise about 60 per cent. of the treatment in fasting, the real object at all times being to clean out the system, and the use of enemas in any case of disease is of more importance than the fast itself, hence those who, for any reason at all, fear a fast, can get most of the benefit due to cleaning the system by a liberal use of the enemas with baking soda."

In order that the author may not claim unfairness from one of the "germ-swatters" (so-called) fraternity, the reviewer has given much more time and consideration than the book deserves, and yet he does not feel that the time has been entirely wasted, for it is over such writings that the neurologists and alienists spend considerable time.

HENRY MONROE MOSES.

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ADDRESS ON SURGERY.

By JOHN B. DEEVER, M.D.,

PHILADELPHIA, PA.

THE art of surgery is as old as history itself. Certainly Hippocrates recognized surgery as a branch of the profession of healing. The remains of individuals who we are told belong to the Neolithic period show that the art of surgery was practiced upon them. It was left to Hippocrates however to give accurate "form and spirit to the practice of surgery." As Dr. John Tweedy says, "The directions which Hippocrates gives concerning the arrangements of the operating room, the placing of the patient, the position of the assistants, the disposition of the lighting, the care to be taken of the surgeon's hands, the need of ambidexterity all indicate a careful and experienced practitioner." He did not sanction the too prevalent attitude of modern times that the surgeon is a mere mechanic, but rightly considered him as a healer, skilled in the use of instruments. It was Galen, however, who was the father of experimental medicine and surgery. It was he who first discovered and described the cranial nerves and the sympathetic system. Thus while Hippocrates is the father of the inductive method in medicine, Galen holds the same relation to the deductive method.

Vesalius, one of the greatest of all anatomists, who lived in the sixteenth century, gives us an idea of a surgeon's preparation when he writes, "My study of anatomy would never have succeeded had I, when working in Paris, been willing that the viscera should be merely shown to me and to my fellow students at one or another public dissection, by wholly unskilled barbers, and that in the most superficial way."

It would take too much time to recount the long array of names associated with surgery which illuminated the 16th, 17th and 18th centuries. It will suffice to say that the works of Paré, Wiseman, Morgani, Harvey, Hunter and Malpighi are among the greatest contributions to medical and surgical literature of all ages.

When we consider the education of the average surgeon before the middle of the 18th century it was not unjust that he should have occupied a

lower social and professional status than the physician, who was equipped with all the academic knowledge of the time, while the former was an apprentice of the barber. In the German universities, when chairs of surgery were first created, it was considered beneath the dignity of the physician who taught the art of surgery to practice it.

The great change in the status of the surgeon came with the dawn of the 19th century, which may rightly be called the new era of surgery, since the brilliant and epoch-making discoveries of surgical anæsthesia, of bacteriology and antiseptic surgery belong to this period. Pain, hemorrhage, and infection were the three apparently inseparable difficulties which with their dire consequences had always frustrated the attempts of the surgeon.

The new era began with the spring of 1842 when Crawford W. Long, a graduate of the University of Pennsylvania, in Jefferson, Jackson County, Ga., first intentionally produced ether anæsthesia to permit of a surgical operation. It was not, however, until October 16, 1846, that William Morton, in the surgical amphitheater of the Massachusetts General Hospital, gave the first public demonstration before an audience of surgeons. In 1865 Pasteur began his experiments which marked the beginning of modern bacteriology. Then Lister, who had been working on the problem of inflammation, read of the work of this provincial French chemist and interpreted its importance to surgery and thus we obtained one of the most important benefactions of all ages to mankind. It was Lister who laid down the two essential principles of the antiseptic system, the prophylactic and the therapeutic, when he wrote, "Admitting then, the truth of the germ theory, and proceeding in accordance with it, we must, when dealing with any case, destroy in the first instance, once for all, any septic organisms which may exist within the parts concerned and after this is done, our efforts must be directed to the prevention of the entrance of others into it."

In 1873, Esmarch, at the German Congress of Surgeons, demonstrated his method of producing artificial bloodlessness. Thus in the brief span of a quarter of a century we find that an art which had previously been confined to emergency surgical procedures had blossomed into an art which

* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 18, 1922.

has been robbed of its terrors, and which has been the means of diminishing or even abolishing much of the suffering of mankind.

Today the allied branches of surgery, such as bacteriology, experimental physiology, biochemistry, serology and radiology, are gradually lifting our profession out of the "sloughs of empiricism" and lending a greater degree of certainty to results to be expected from our methods. Formerly, practically all our knowledge of the diseased processes was derived from their terminal aspects as seen in the post-mortem chamber. Today our practical knowledge of the mysteries of the human organism is being continually enriched by the information revealed at the operating table itself, where we are able to study processes in their courses, rather than in their termination for which the term living pathology serves as the best designation. By constantly multiplying these observations, we are continually gaining a better insight into the nature of surgical diseases and are receiving useful indications as to the possible means of their prevention and in a gratifying number of instances of obtaining a cure. Thus by a comparison of earlier changes and earlier symptoms we have improved diagnosis, treatment and prognosis.

It is interesting in this connection to bear in mind that many of our modern methods represent a change only in method, not in the basic principles of surgery. In the treatment of wounds, for example, the monks of the middle ages smeared the wounds of their patients with pitch and strong wines with not unsatisfactory results. The difference is that today with our knowledge of infection, of antiseptics and asepsis, we are better able to cope with the problems which confront us.

Nature, then, as it is today, was a great aid in wound healing, and Paré was not far wrong, when, on being asked the condition of his patient, replied, "I dress the wound, God heals it." Today, however, a much greater responsibility rests on the work of human hands and lack of success cannot so conveniently as formerly be shifted or attributed to a visitation of God.

Modern surgical methods, however, though their progress has been most dramatic, were not developed in a day. A survey of the early history immediately following the introduction of anaesthesia and the antiseptic treatment of wounds, gives the impression of a mighty chaos, in which ambitious invention and boldness sought to drown the voices that were raised in opposition to Lister's theories. None better than Lister himself was aware of the shortcomings of his method, and none more than he was continually striving to improve the mode of its application. His collected papers give us an idea of the painstaking manner in which he endeavored to modify and improve the details of his system as their faults gradually became recognized. The first

item that commanded attention was the strength of the antiseptic solutions. It was soon found that carbolic acid was too irritating to delicate living tissues, so the solutions were diluted and also less irritating substances introduced, such as iodoform, oil of eucalyptus, etc. Non-absorbent dressings soon were discarded for absorbent ones. Owing to the imperfect knowledge of bacteriology in those days, Lister erroneously believed that the decomposing organisms in the air militated against antiseptic principles. In order to counteract these influences he introduced the carbolic spray as part of the system, so that the work might be carried on in a perfectly antiseptic atmosphere. It was this special feature of the method that provided his opponents with their most powerful argument against the innovation. Further knowledge and experience, however, soon demonstrated not only that the organisms in the air are usually not pathogenic, and furthermore that the body has within itself natural defences which, in the absence of irritation to the tissues, serves as a protective agent. The spray, therefore, was discarded comparatively early in the game.

As time went on the dominant note in Lister's entire method was recognized to be cleanliness; and although the spirit of antiseptics still remained as the keynote of modern surgery, by being shorn of three of its letters it became asepsis, and was translated from chemical to physical disinfection by means of heat.

An indispensable factor in the development of the surgery of our day is, of course, animal experimentation. It is impossible to over-estimate its effects not only on surgical advance but on the progress of medicine in general. It has probably done more than anything else to "widen the boundaries of our knowledge," by substituting for vague theories more exact knowledge and refined methods of procedure. One of the many contributions of Lister to antiseptic surgery is the application of absorbable catgut thread for tying arteries and vessels. Before this time the theory prevailed that the thread with which an artery was tied during an operation was a foreign body to be gotten rid of as it rotted through the walls of a blood vessel not occluded by a blood clot. The method consisted of applying ordinary silk threads to the large and small arteries, as many as twenty or thirty being used in an amputation, for example, and allowing one end of each thread to hang out of the wound. Those on the smaller blood vessels would probably rot through in a few days and could be pulled out one by one. Those on the larger vessels did not usually come away until much later, one, two or three weeks perhaps after operation; profuse hemorrhage usually resulted if pulled out too early and generally proved fatal, also general infection took place by opening avenues of communication between the healthy and the infected tis-

sues. That this post-operative catastrophe has been eliminated from the ken of the surgeon of today is entirely due to animal experiments conducted by Lister himself. He first experimented on a horse by tying the carotid artery in the neck with antiseptic silk thread. The wound healed without inflammation. Subsequent dissection showed that the antiseptic precaution undoubtedly prevented secondary hemorrhage. Lister then applied the method to a human subject, a woman suffering from a large aneurism on the large artery of the thigh and leg. Recovery in this case also took place without inflammation. The woman's death ten months later gave Lister the opportunity of studying his principle. He found that in spite of his careful antiseptics an abscess was developing at the point at which the artery had been tied, and that this was evidently due to the thread, and more especially to the knot. He then experimented on a calf, this time using antiseptic catgut for tying the carotid artery. The wound healed without any disturbances. The animal was killed thirty days later, and dissection of the parts showed a band of living tissue at the point at which the artery had been tied. The catgut had been absorbed and had become part of the tissue, thus actually strengthening the artery, while the knot had entirely disappeared. The animals experimented upon were, of course, then as they are now, treated with the utmost consideration and with the same precautions in use in every operating room. The use of sterile suture material has undergone only slight modification, and Lister's principle is universally employed today. Prepared silk or catgut is used to tie the arteries, the threads are cut short and the wound closed. Healing takes place in ten days, as a rule, sometimes in less time, and secondary hemorrhage is a most unusual occurrence. It is true that we might have arrived at this particular method by occasional post-mortem observations, but "art is long and time is fleeting" and surgery is impatient to prevent those "funeral marches to the grave," the poet sings of. How many such processions have been avoided since the advent of this era cannot be estimated. The achievements of clinical and experimental research have been innumerable since the time of Lister. This consummation surely is worth the sacrifice of all the animals that have ever been used for experimental work.

Our entire method of study and investigation has its basis in experimental work. It is incomprehensible to me how any right-minded individual can spend time, effort, and money in furthering propaganda against this indispensable adjunct to the progress of medicine. This spirit of investigation should be encouraged instead of being hindered. It should be subsidized, instead of taxed. The research worker spending long hours, often for a pittance, is an earnest seeker for the truth. His aims are of the highest and

his results are for the benefit of all. He knows not nor cares whether the mantle of recognition shall fall upon him. What would the early opponents of animal experimentation have said could we have told them that by its aid smallpox, diphtheria, tetanus and rabies would be controlled? What would they say could they look back on the researches which are at last opening the way for a victory over the great social scourge? I trust that all those within the reach of my voice will do all in their power by word and deed to encourage and stimulate every legitimate endeavor in research work that has for its aim the cure and the prevention of disease, and to discredit any propaganda which interferes with these endeavors, for "Where there is no vision the people shall perish." As a result of Lister's work the way also was opened for a rapid advance in clinical surgery. Regions which were previously closed to the operator were now opened. The triumphs of clinical surgery stand beside those of hygiene and preventive medicine as the important medical achievements of the present century. Clinical research in surgery has revolutionized our knowledge of gallbladder and bile duct surgery, of gastric, intestinal and renal surgery. Thus it is the instrument which has given us the problems for experimental surgery. By this clinical research the surgeon and the internist will be drawn together as they have not been since the 13th century when the clinical physicians were forbidden to undertake any procedure involving the shedding of blood. Clinical research implies the fullest inquiry into the present symptoms and the correlation of the manifestations of a pathologic physiology with the minutest changes observed in all related organs during our operation upon them.

Progress in surgery, however, is not dependent on clinical or animal experimentation alone. Equally essential for surgical diagnosis and treatment are the researches in the fields of bacteriology, chemistry, physics, physico and bio-chemistry. While with these aids at our disposal, we are in danger of losing the advantage of the highly trained senses which our ancestors developed and which to a surprising degree enabled them to detect obscure signs, we are to some extent compensated for this loss by the more exact and mainly the confirmatory evidence furnished by means of these adjuncts to diagnosis and therapeutics. I cannot help, however, reiterating a contention which I have made on several occasions, that there is too great a tendency on the part of the youthful diagnostician to neglect the development of the god-given gifts of the five senses and to rely too exclusively on more or less mechanical methods of diagnosis.

Another one of the principles of surgery which modern methods have developed to a remarkable degree is that of the least amount of tissue injury with the conservation of maximal function. It is

here that it is essential to know not only the pathological factors producing the lesions, but also the physiological processes and the bio-chemical principles involved. The science of biological chemistry has been aptly described as the "why" of function and physiology as the "how." The cells of the body may be compared to different departments of a chemical factory, each one of which has its definite purpose and each of which is dependent on certain laws of chemical reaction. Life being maintained by a constant supply of material to these cells and the throwing off of the waste products of combustion of the substances thus supplied, a proper understanding of the chemical changes that take place during this process of metabolism is most essential to an understanding of bodily functions in health and in disease. The knowledge of the excretions and secretions of the human organism thus obtained furnish valuable data in diagnosis and treatment. The understanding of this mechanism of life is important for the physician and surgeon alike. They must ever remember that promise for the future entails closer contact with the anatomist, the physiologist, the pathologist, the pharmacologist and the bio-chemist.

With all these refinements, or rather let me say with the constantly deeper penetration of science into the realms of the art of surgery, we of today enjoy a degree of certainty with regard to immediate results that would truly astonish the operator of a former period. Operative mortality has been reduced to a minimum in many kinds of cases. In cancer of the breast, for example, it is almost negligible, less than one per cent. in the hands of the experienced surgeon. In uncomplicated chronic appendicitis it is practically *nil*. Indeed, appendectomy is now considered so safe an operation that much of the recent literature on the subject omits the item of operative mortality in uncomplicated chronic appendicitis. And for other abdominal operations the death-rate is constantly decreasing. This is all the more interesting and gratifying in view of the fact that most of the abdominal operations commonly practiced today are comparatively late arrivals in the surgical arena. This victory, however, has not been accepted as the final result of our efforts. Improvement in the end-results of our labors, that is prompt and permanent restoration of function, is what we are striving for with ever-increasing enthusiasm and zeal.

Not a little of the satisfactory reduction of operative mortality is due to the improvement in methods of administering general anesthetics, by which not alone shock is reduced and to a large extent avoided, but many of the unpleasant after-effects eliminated. Local anesthesia also has come to occupy an important place in operative surgery, particularly in certain types of cases where circumstances either prevent the use of a general anesthetic or where it would be attended

with too great a risk. The method of anoci association, as developed by Crile, is designed to reduce the shock to the nervous system produced by the anesthetic as well as by the operation itself. It is proving particularly useful in the "bad risk patients," such as the cases of exophthalmic goitre. These cases are now brought into the operating room with the factor of fear and anxiety which add so much to the mortality, eliminated.

Another factor in the improvement of operative mortality is rapidity of operation. A prime necessity in pre-anesthesia days, it was followed by leisurely and protracted operation in the years after the introduction of ether narcosis and in the early period of antisepsis. Modern surgical treatment today has again reverted to rapid surgery, and not the record-breaking surgical gymnastics that appeal to the gallery, but the quickest manœuvres and minimum of manipulation consistent with exact and careful work. Simplicity also is an important item in surgery of today and as in every act it is the virtue that reigns supreme. The personal equation of the operator, or rather the surgeon—for there is a vast difference between the two—is therefore a very vital factor in successful surgery today, more so than in the days when there prevailed a more or less complete confidence in the protective influence of antisepsis.

Post-operative methods also have undergone a change in our days. An erroneous impression that is rapidly being corrected is that functional rest is an essential factor in post-operative treatment. While this may be true with regard to the wound itself, it does not always apply to the organ or organs involved. In contrast with the practice of other days, where the almost inevitable occurrence of complication, was to be expected, we today allow the wound to heal with the minimum of interference and the maximum of rest. But with regard to function our efforts take the opposite course. The functions of certain organs, for example the heart, the blood-vessels, and also the gastro-intestinal tract must be kept up, and we see that in spite of this or perhaps because of it, operative wounds of these parts heal without difficulty and as promptly, if not more so, than in other regions. In fact, observation seems to show that wounds of those parts of the body subject to the most constant and unavoidable activity heal more smoothly and more rapidly than elsewhere. Inaction reduces the functional and resisting powers of the organs, and spells atrophy, a word we all abhor. The complete reversal that has taken place in the treatment of sprains, dislocations and fractures of the long bones is based on this principle. Instead of prolonged bandaging and rest, we encourage wherever possible, early activity of the muscles, and passive and active movement of operated joints so that by the time the union of

the bone has taken place the muscle and joints are in a more or less normal condition.

Free respiration is essential not only after all operations on the thoracic region, but after abdominal operations as well. The temperature of the operating room and the temperature of the sick room are carefully regulated so as to avoid post-operative respiratory complications. In addition to the various mechanical and physical measures in vogue to protect the abdominal wound and strengthen the parts, and in order to avoid the development of post-operative adhesions and to obtain the necessary freedom of respiration, we make our patients assume a semi-sitting position in or out of bed as early as the second day after operation. Although the primary object of these post-operative measures is the early restoration of physiological activity, the psychological effect on the patient is not an unimportant consideration. It encourages him and adds greatly to his general well-being to know that the usual functions of the bowels and kidneys are being resumed.

Unfortunately there are still some diseases and injuries in which operation leaves defects of shape as well as of function. It is here that plastic surgery is coming into its own. Still in its formative period before the world cataclysm burst upon us, it received a tremendous impetus in the experiences of the war, and forms an important and interesting chapter in the surgical history of the war and after.

In this desultory survey of surgical endeavor we have seen how essential is a knowledge of the allied sciences for the successful surgeon. But since his expectation of life numbers but the palmist's three score and ten, and since in spite of daylight-saving and numerous time-saving devices we have not yet succeeded in adding one minute to the hour or one hour to the day, no one can hope to become proficient in all of the sciences. He therefore chooses the wise course of becoming familiar with the essential features of each of them and specializing in one, relies on other equally if not more proficient specialists in other branches to give him the detailed information which he desires; in other words, team work or co-operation. I would like to caution you in regard to the specialties. It is said that the "specialist should be a trained physician, a skilled surgeon, and something more, but he is often something else and something less"—The existence of the operating specialist is only justified as long as he contributes to the field in which he works. The error should not be made of allowing men to take up a restricted operative field in general medicine and surgery. They must ever co-operate with the parent stem, if their productivity is to increase and their maintenance be justified.

Co-operation and prevention, these are the slogans of modern science, and the general public for whom all our energies are being expended, must play a large part in the spreading of the

propaganda. We need your hearty co-operation in our battle against disease and your sincere, earnest and enthusiastic aid in applying the principles which the profession is trying to spread broadcast. We need your moral and material encouragement for our research work, support unhampered by conditions that prevent the free and untrammelled course toward our ideal of *mens sana in corpore sano*, which is our aim in life.

ADDRESS OF THE PRESIDENT.*

By JAMES F. ROONEY, M.D.,
ALBANY, N. Y.

PANACEAS.

MONTAIGNE says, somewhere in his essays, "Health is a precious thing, and the only one, in truth, meriting that a man should lay out, not only his time, sweat, labor and goods, but also his life itself to obtain it; forasmuch as, without it, life itself is wearisome and injurious to us; pleasure, wisdom, learning, and virtue, without it, wither away and vanish; and to the most labored and solid discourses that philosophy would imprint in use to the contrary, we need no more but oppose the image of Plato being struck with an epilepsy or apoplexy; and in presupposition, to defy him to call the rich faculties of his soul to his assistance."

The triteness of this observation must be apparent to everyone; and still its very triteness is astounding in its implications! To lay down life itself in the desire to gain or regain health because without it life is burdensome and injurious! Wrapt up in this philosophic apothegm there is a wealth of commentary upon and explanation of the vagaries and searchings of today.

It must be apparent even to the most indifferent that the ferment of unrest has leavened and quickened in the body politic these last twenty years and that this yeast of discontent has accelerated its reactions immeasurably within the crowded and terrible times through which we have so recently lived and the memories of which are a nightmare so poignant that none would wish to live them over; indeed, many could not live them over.

The wake of all great disasters leave strewn upon the shoals of life the flotsam and jetsam of physically and mentally crippled humanity; the strings of the lute of life have been stripped and torn by the fingers of a malign fate and the instrument gives but incoherent and disordered harmonies even when plucked by the fingers of a master hand. The human race the world over is sick and is willing to sacrifice life itself to obtain health; and in similar case Plato himself could not call the rich faculties of his soul to his assistance.

The profession of medicine as a part of the body politic, that part which has more than any

* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 18, 1922.

other been brought into contact with the miseries of humanity, needs now more than ever to summon all its coolness and clear reasoning, its altruism and its compassion, to do its utmost in the work of healing the wounds of the world. But, I ask, will the world listen and heed the words of the profession? Let us see.

The cycles of history repeat themselves. A tribe becomes a nation, the nation lives close to the soil, is hardy, thrifty, hard headed and cautious. Gradually there accrues to it power and wealth, ships and commerce, trade and industry. As it grows there develops in it inevitably the decay that is implanted in everything living at birth; the men who compose it come to love power for its own sake; wealth for the power it gives, pleasure for the thoughts of evil it kills, and luxury for the narcotism it induces. Gone is frugality, gone hardihood, gone is thrift, and lost is reason. Now comes the debacle; with the cry of "Weltmacht oder Niedergang" the nation sets its foot on the chute that leads to the buried empires of Babylon and Carthage, of Egypt and of Rome, of Austria and Spain. Shall we escape? God knows!

The symptoms of the mortal disease of nations are beginning to show themselves in us, despite our youth. Our course has been that of an athlete who after great stress, great deeds, and great glory, leaves the course to rest upon his laurels; with his rest his fiber passes, his great heart becomes lax, his powerful muscles no longer swell his frame; he languishes with the rest of the swine before the Circe of luxury and dies with them.

The beginning of the disasters of the people of Israel was their running after strange gods. Are we not running after strange gods? Are we as a people holding to the principles that made us a nation? Are we in our strivings to prove wrong the Evangel "the poor ye will always have with you" by our chase after the panacea of socialism running after strange gods? Is the Great German God of compulsory health insurance the deity of the founders of this country? Is State medicine which began in Russian zemstvos thirty years ago the religion of the American politics and policies, which developed and fostered the growth of this country? Is the idol of centralization of government at Washington and its delegation to bureaucracies with summary, inquisitorial and practically irresponsible power that we now make obeisance to, the deity that "made and preserved us a nation"; or can we find their parallels in the "panem et circenses" of the dying Roman Empire; in the slave physicians of Carthage and Rome; the centralization of power in the hands of the Cæsars who as Gibbons says "long maintained the name and image of a free republic"?

In all the olden empires with their growth in wealth there grew up a parasite class who were fostered and pampered in their desire by their patron. The great foundations of today may not

inaptly be compared, I think, as may perhaps many of the multifarious organizations with great resources ministering in one way or another to real or cultivated needs, to the development of classes in the Roman Republic by the evolution of the "clients." The derivation of the word is of great significance; clients were "listeners"; they were neither citizens nor slaves; were neither bond nor free; they had by law neither voice nor vote in the tribunitial assembly, but by their mass effect enforced their will upon it; were entirely dependent on the will of the father of the family and were protected and supported by him. This apparently beneficent provision of Roman custom was the seed sowed to the reaping of the harvest of disaster; out of the clients grew the plebs and out of the plebs emerged the germ of destruction. "But as the aristocracy became converted into a special class concentrating not only power but wealth, the clients became parasites and beggars; and these new partisans of the rich undermined outwardly and inwardly the burgess class—the free citizens. . . . But not only did these natural causes operate to produce a metropolitan rabble; neither the nobility nor the demagogues, moreover, can be acquitted from the reproach of having systematically nursed its growth, and of having undermined so far as in them lay the old public spirit by flattery of the people and things still worse. . . . The old obligation of the ædiles to see that corn could be procured at a moderate price and to superintend the games, began to degenerate into the state of things which at length gave rise to the horrible cry of the populace under the empire, 'Bread for nothing and games forever! . . . ! It was no wonder,' Cato considered, 'that the burgesses no longer listened to good advice—the belly has no ears.'" Thus Mommsen. Could not one believe that he were describing certain of the phenomena of today instead of those of twenty-two hundred years ago? This was just the beginning; the Empire endured for five hundred years more but the seeds of death were implanted; they wanted but the slow ripening to the perfect fruit, the destruction of that great hegemony that was Rome.

Man will not work but when he must; the Adamic malediction, "Thou shalt earn thy bread by the sweat of thy brow" is deemed a curse, not a blessing. The splinting of an arm atrophies its muscles; how then will improvidence cultivate thrift? Man will not provide for tomorrow if the need of that day be forestalled by an agency other than his own. Man will not think if his thinking be done for him by proposers of the accelerated induction of the millennium.

As citizens we must set our face against this Lethæan doctrine; as physicians we must with all the might that is in us prevent, if possible, the infection of the body politic with this dread and fatal disease, for, failing in this, there is only one cure and that an horrendous one—the surgery of God.

Medical Society of the State of New York

ANNUAL REPORTS

1921

REPORT OF THE PRESIDENT.

To the House of Delegates:

The general reorganization of society which has been occurring since 1916 is having of necessity its effects upon the medical profession. The year just past has witnessed a slowing down of the processes of radicalism and a tendency toward the re-establishment of conservatism in Government. That this movement toward conservatism is a permanent one is dubious, but it has furnished the medical profession with at least a breathing spell during which it should regain control of its powers, and be better enabled to sustain the assaults which may be made upon it in the future.

MEMBERSHIP

There has been a satisfactory and normal increase in membership in the State Society although it is lamentable that nearly one-half of the profession of the State are as yet outside of the pales of the organized profession. There are several reasons it appears for this state of affairs: 1, General dissatisfaction with what organized medicine has done for the profession; 2, Loss of the professional and predominance of the commercial spirit; 3, Apathy.

It would seem that some definite effort must be made by the Society to remove the sources for the dissatisfaction of a large minority of the profession and to stimulate them to the recognition of the fact that an organization of democracy is effective largely in direct proportion to its numbers, and to eliminate any causes within the Society that give justification for suspicion on the part of the minority.

ORGANIZATION

It is an undeniable fact that the organization of the Medical Society is on the whole a very loose and to a large degree an unco-ordinated one. More effective means must be taken within the district branches, and more especially within the County Societies to organize the profession more solidly, more representatively, more energetically, and thus more effectively than at present. This can not be done without money. It can not be done by devoted and capable practitioners of medicine, who have sacrificed and do now sacrifice their own personal interest and those of their family, at a great loss of their time to the interests of the profession; efforts which are in large part repaid by criticism if they fail, by good-natured tolerance if they succeed, by gratitude

rarely. It is suggested that the House of Delegates should properly consider some means for bettering the present deficiencies in organization.

COMMITTEES

The work of the various Committees of the Society is to a large degree unco-ordinated, and must, unless some changes are made in methods, remain so. It would seem that a conference of the Chairmen of all the various standing Committees might be arranged to take place shortly after the formation of the Committees in conjunction with a meeting of the Council or of the Executive Committee, in order that a definite policy for the ensuing year might be developed, and the work of these Committees be co-ordinated. The same suggestion is made as regards Special Committees also.

POLICIES

It is an undeniable fact that there has been a steady loss of influence of the organized medical profession upon the public. This has been especially notable within the past ten years, and has occurred *pari passu* with the growth of the various welfare organizations and the extension of public health agencies, the former dominated by lay groups and the latter by members of the profession, who are to a greater or less degree out of touch with the general practitioners. Because of this, the medical profession has been assailed both from within and without, and has been placed upon the defensive.

This infiltration of the profession has, through the active and vigorous work of salaried medical employees of the Federal and State Governments and of the various welfare organizations, practically secured the dominance of the medical organizations, by a very highly organized and vigorous minority through a very subtle and capable propaganda which is many times false and misleading in character. The organized medical profession because of its lack of control of the press and its inability to secure therein the continuous and straightforward, honest expression of its views has been placed before the public in the apparent position of opposing the wonderful schemes proposed for the prevention of disease, the lessening of sickness and the amelioration of the condition of the poor.

These conditions are responsible for the propaganda on the subject of Compulsory Health Insurance, Medicine, the centralization of powers in Federal and State Bureaus; the oppressive

regulations that have been placed upon the medical profession by the Departments of the Federal Government relating to the prescribing of alcohol and narcotic drugs, and if continued will lead not only to the administrative control of the medical profession, but to what will be eventually worse perhaps for the public, legislative dictation as to therapeutics. The situation is pitiful and ridiculous, not to say tragic. It is the height of silliness to pillory the medical profession before the public as has been done, practically damning it as the chief source of provision of narcotic drugs and alcohol, when as a matter of fact it has been proven that so far as narcotics are concerned the medical profession is responsible for the supply of less than $\frac{1}{4}$ of 1% of drugs of addiction, and so far as alcohol is concerned probably for less than 1/100 of 1%. The regulations as relates to both remedies, undoubtedly, cause unnecessary suffering and perhaps death. The recent requirement of the Federal Narcotic Bureau imposing upon the physician the necessity where opiates are prescribed over a period longer than ten days, of writing the diagnosis upon the prescribing blank, in all probability is a violation of the law of this State as relates to privileged communications; so that the physician of this State is placed in the anomalous position of complying with the Federal Law by violation of the State Law. The usurpation by Congress of the therapeutic rights of the medical profession as evidenced in the recent amendment of the Volsted Act is indicative of what is coming to the profession. The reason for this appears to be largely due to dereliction of duty on the part of the officers of the organized profession of the Nation, or, of their inability to properly represent the profession. In either instance, or in both, it demands a complete national reorganization, in order that the medical profession of the country be properly and adequately represented at Washington. An instance, in point is the weak shilly-shally resolution relating to State Medicine passed by the last House of Delegates of the A.M.A. at Boston, which was construed by the congressional committee having consideration of the Sheppard-Towner bill as placing the A.M.A. in the attitude of favoring this legislation. This should not be permitted to occur again and it is recommended that the House of Delegates of this Society consider what action may be deemed proper, that this condition may be prevented from occurring again.

The danger of all organized democratic bodies is their control by a small, alert, and effective group, similar to the domination of the Japanese Government by the Genro, the "older statesmen." Under these conditions, all officers are chosen not necessarily because of their fitness, but because of their pliability to the domination of the group. Irrespective of the motives of the

group, whether they be the love of power, glory, or self interest, their dictation must finally inure to the sacrifice of the bulk of the profession. It is against human nature to wield power for long periods of time and not develop a complaisant belief in one's own infallibility. It is especially essential therefore, that great care be exercised, in the choice of officers and delegates to be sure that they will be truly representatives not of the opinions of the Genro, but of the best interests of the public and the profession.

For five years the medical profession has attempted to secure the passage of legislation raising the standards of admission to the practice of medicine and procuring the vigorous enforcement of the Medical Practice Act and for five years has failed. This year the two bills providing for this purpose were passed by the Senate, one was passed by the Assembly and that one was vetoed by the Governor. The memorandum attached giving his reasons for this veto will give great comfort and satisfaction to all the violators of the present Medical Practice Act and, unfortunately, will apparently give them reason for the continuance of their efforts to be licensed.

It is a remarkable phenomenon that a group of not more than 1,500 Chiropractors, who practically acknowledge that they are practicing in violation of the law are able to defeat legislation proposed by the Medical Society of the State of New York in conjunction with the Departments of Education and Health of this State.

The lobby conducted by the Chiropractors was disgraceful and continuous. During the consideration of their bills in the Assembly they were carrying on their work inside the rail of the Assembly Chamber with impunity. The funds at their disposal are apparently unlimited. Their paid professional agent can be found in the Capitol during the whole time of the legislative session.

It would seem that the people of this state do not wish any protection from quackery. If this be the case, it might be well for the Society to, at least, not oppose the repeal of the entire Medical Practice Act as it today exists and to permit a reversion to the status that existed before 1885; that there shall be no state license, no examination, no registration, and that only holders of the degree of M.D., conferred by a medical school recognized by the Regents of the State shall be eligible to sign birth or death certificates or to make returns for infectious or communicable diseases. This will make no change in the present status, in so far as concerns the validity of vital statistics. The law should provide that all of those who practice medicine or attempt to treat in any way any person, shall be amenable to the Civil Law for damages. Under the present law the quack is immune from this provision in the Civil Law.

It is not without deep and full consideration that this recommendation is made, but it is time that the medical profession as a whole cease to carry the onus of the protection of the public health alone. It is time that it ceases to carry the onus of the accusations which are constantly made that it is a "medical trust." The sole demand that it has made has been that all persons who wish to treat in any way any person in the State shall show their capability to do so, and shall show that they have received adequate training both preliminary and professional to this end. The public have been protected so far as the profession could protect them and apparently do not desire to be protected further. Perhaps three or four years of living under the conditions which they apparently desire will cause a demand upon their part of proper law and re-establishment of their belief in the honesty and good intentions of the medical profession.

It must again be brought to the attention of the House of Delegates that there is a great desire to have a concerted program for the education of the public by the organized profession. If the public can ever be brought to learn the real motives and purposes of the organized profession of medicine, the day of the quack will be no more.

DISCIPLINE

It is lamentable but true that neither the State Society nor the majority of the County Societies have any effective means for the expulsion of unworthy members. The Counsel of the State Society will readily give instances in his report, or otherwise, to the House of the discredit and odium that is being brought upon the profession by persons within the Society, of men who are unfit for membership because of gross unprofessional conduct or of gross neglect, who under the present conditions can not be expelled from membership. Even the code of ethics of the American Medical Association is merely "suggestive and advisory," not monitive or binding. This state of affairs should exist no longer. It seems right and proper to take definite action now providing for causes which will subject a member to trial and expulsion and to embody that action in the new Constitution and By-Laws, which are about to be considered.

LEGISLATION

The report of the Chairman of this Committee will cover this subject very largely and concretely. One fact should however be borne in mind and that is a means for the co-ordination of the legislative efforts of all State Societies,

which may be carried on in accordance with certain proposals that have been suggested at the last meeting of the State Secretaries under the auspices of the American Medical Association. It may be recalled that four years ago this proposal was made to this House of Delegates by your President, then the Chairman of the Committee on Legislation. This co-ordination should be carried on by a bureau similar to that of our present Legislative Bureau with proper safeguards for the maintenance of State Home Rule and the prevention of undue centralization of power.

OFFICERS

The American Medical Association has just inaugurated a policy of providing that all past presidents of the Association shall be life members of the House of Delegates with voice but without vote, and furthermore that this provision shall not prevent or disbar them from election as delegates, officers, or members of Committees. It would seem that this is a good way of utilizing the experience gained in the conduct of office, which would be valuable in an advisory way and which is now lost. The provision giving them voice without vote would prevent the unwise accretion of power consolidated in the hands of a few able men which might be dangerous to the Society. This recommendation is presented for your earnest consideration.

CONCLUSION

In conclusion it is desired to express my deepest gratitude for the great honor which has been conferred upon me in my election. My thanks are extended to those devoted members of the profession who have so ably assisted me in carrying out the responsibilities of the office and most especially to the Executive Committee and the Chairman of the Committee on Legislation, whose ability, indefatigability and devotion to the Society are above all praise.

My own wish has been to earnestly and faithfully serve the medical profession. Without question mistakes have been made. They have been, it is trusted, unavoidable and it is hoped pardonable. Whatever achievements have been made are not personal; the credit accrues to the whole profession. In laying down the burden of the office, I wish to reiterate again my sincere desire to always uphold and aid so far as in me lies the ability, the purposes and the good of that profession whose sole interests are those of the public weal.

Respectfully submitted,

JAMES F. ROONEY,
President.

April 15, 1922.

REPORT OF THE SPEAKER.

To the House of Delegates:

A great number of economic questions of commanding import to the medical profession will come before the House of Delegates at this annual meeting. It behooves the members of the House as the selected representatives of a good working majority of the Doctors of Medicine of this State, to carefully study each of these questions and express in no uncertain terms the final judgment of the House of Delegates, which must be carried out by the Council during the coming year.

The Constitution describes the purposes of the Society and the following is quoted from Section 1: "To extend medical knowledge and advance medical science; to elevate the standard of medical education; to secure the enactment of just medical laws; to guard and foster the material interests of its members and protect them against imposition."

It seems fitting and timely that the House of Delegates should respond to the urge of the stirring words of the Constitution and consider the question of the abuse of medical charity, especially its extension in the form of the pay clinic, which is an abuse of medical charity as defined by the dispensary law of the State and the rules and regulations promulgated by the State Board of Charities in harmony with the spirit and intent of that law. The dispensary law was enacted in 1899 as a natural reaction to the improper use of dispensaries or clinics, and the gross abuse of medical charity prevalent at that time. The law as administered by the State Board of Charities has accomplished more good for the sick and injured poor, and the medical profession than I have time and space to record. Suffice it to say that abuses still exist; in dispensaries acting as feeders for hospitals; in the hankering for cases for the special clinics; in the growing desire for the money the patients are willing to pay to the dispensaries; and in the clinics of teaching institutions, that have no regard for the law or the material interests of the profession.

The medical department of a State University has accepted the conditions under which a grant of many thousands of dollars is to be paid by one of the large foundations provided that the clinic or dispensary was to be used not for the sick or injured poor, but for the so-called middle class of society composed of those who can not afford to pay the prevailing fees of specialists and those who develop pay-clinic-Neurosis. The dispensary experts estimate their number as two million (2,000,000) persons in the city of New York. It was announced in the press that the college clinic or dispensary was ready to serve

all in the class mentioned above for an admission fee of one dollar and for examination and treatment from that amount upward to ten dollars.

The law says "A dispensary is declared to be any person, corporation, or institution whose purpose it is either independently or in connection with any other purpose to furnish at any place or places to persons non-resident therein, either gratuitously or for a compensation determined without regard to the value of the thing furnished, medical or surgical advice or treatment."

A dispensary operated "in connection with any other purpose" means that part of the medical college plant known as the out door clinic or dispensary. The latter part of the definition which says: "to furnish either gratuitously or for a compensation determined without regard to the value of the thing furnished" means that the dispensary furnishes treatment without pay or for ten or twenty-five cents and never for an amount which is based upon the value of the medical service or cost of carrying on the medical charity.

This definition was carefully worded; it was considered and reconsidered many times after it became evident that a poor person could not be described satisfactorily for the purpose of the law. All dispensaries, college clinics or any institutions that display a sign or in any other way suggest the equivalent of a dispensary must be licensed by the State Board of Charities and come under its rules and regulations as provided in the following section of the law: "nor shall any person, corporation or institution, except a duly licensed dispensary display or cause to be displayed a sign or other thing which could directly or indirectly or by suggestion indicate the existence of the equivalent in purpose and effect of a dispensary."

There is one penalty in the law making it a misdemeanor for any person who obtains medical or surgical treatment on false representation as to his ability to pay for such medical service, and there is a second penalty in the law which is aimed at those who are responsible for the operation of the dispensary. It states that: "any person who wilfully violates any provision of this article or any rules and regulations published under the authority of this article shall be guilty of a misdemeanor." And the State Board of Charities has the authority of the law to make rules and regulations governing dispensaries or clinics. Regulation 3: "All persons applying for advice or treatment at any dispensary shall be interviewed by the registrar or his assistant to determine the question of their admission and

the disposition of each case shall be governed by the following (a) all emergency cases shall be admitted and receive prompt treatment and care; (b) applicants belonging in the following classes may be admitted in the discretion of the registrar. (1) Patients who are received in medical colleges and are selected for use in clinical instruction. (2) Patients admitted for the treatment of communicable diseases.

Other applicants shall be questioned as to their ability to pay a physician for his services and there shall be admitted as patients only those who in the opinion of the registrar are unable to pay a physician or dentist for the treatment required. When necessary for the proper determination of a case the registrar shall cause an investigation to be made into the financial status of the applicant and the result of such investigation shall be filed among the permanent records of the dispensary; a record shall be kept of the names and addresses of patients refused treatment under this rule.

For twenty-two and one-half years the State Board of Charities has promulgated Rules and Regulations under authority of the dispensary law which have demonstrated an insight as to the purposes for which the law was enacted in 1899. As there is a movement pressing toward a radical change in the dispensary law, I recommend that the House of Delegates refer the questions of the abuse of medical charity, dispensaries and pay clinics to the Council for consideration and action in behalf of the Society.

The revised Constitution and By-Laws prepared with a great deal of care by a committee of the Council acting in co-operation with Mr. George W. Whiteside, legal counsel, will be presented to the House of Delegates for adoption. In this revision there is no mention of the Principles of Ethics and as there are many members of the State Society who are not aware that the Principles of Ethics have been adopted by the Society in a referendum vote, I have taken this opportunity to present the facts relating thereto.

The Medical Society of the State of New York and the New York State Medical Association were authorized to consolidate under the name of Medical Society of the State of New York by a special act of the Legislature. The consolidated corporation shall have all the rights and privileges possessed by either corporation at the time of the consolidation, and shall be subject to all of the liabilities of each corporation.

Under the provisions of the special act and in accordance with an order of the Honorable John M. Davy, Justice of the Supreme Court of the State of New York held in the city of Rochester, on the ninth day of December, 1905: As stated in section seven of said order: "It is further

covenanted and agreed by the parties hereto, that as soon as practicable after the entry of an order for the consolidation of the corporations, the following proposition shall be submitted by referendum to the vote of the members of the Society namely: The Principles of Medical Ethics of the American Medical Association, being suggestive and advisory, shall be the guide of members in their relation to each other and to the public."

The Principles of Medical Ethics of the American Medical Association as revised May 7th, 1903, was submitted for a referendum vote on April 27th, 1906. The poll closed on May 7th, 1906, at noon. There were 3,306 votes recorded in favor and 197 votes recorded against. It was adopted and is binding on Society and the House of Delegates.

I recommend that the Principles of Ethics of the American Medical Association as revised May 7th, 1903, be incorporated in either the Constitution or the By-Laws.

During the recent session of the Legislature I have had ample opportunity to be convinced of the efficiency of the Committee on Legislation under the able chairmanship of Dr. James N. Vander Veer. From past experience, I can judge of the time and thought that has been freely given by that Committee for the benefit of the Society and the medical profession, and the Committee is to be congratulated for arousing splendid cooperation throughout the State.

It is my sad duty to call the attention of the House to the death of Dr. Dwight H. Murray, which occurred October 21, 1921. He was a conscientious worker for the best interests of the medical profession in this State and throughout the nation. He was your representative in the House of Delegates of the American Medical Association for the past ten years. He prepared the plan for the establishment of the Speakership of the House of Delegates of the American Medical Association and later for the House of Delegates of this Society. At the time of his death he was Speaker of the former and the Vice-Speaker of the latter. He will always be remembered for his genial personality and eminent worth.

I recommend that the House rise and remain standing in silence for one minute out of respect to the memory of Dr. Dwight H. Murray.

I would like to express my thanks for the honor of being selected as the presiding officer of the House of Delegates, and I hope to merit the cooperation of its members as I appreciate their assistance in the performance of the duty assigned me.

E. ELIOT HARRIS,
Speaker.

April 1, 1922.

REPORT OF THE SECRETARY.

To the House of Delegates:

In compliance with Section 3, Chapter VI, of the By-Laws, the Secretary submits the following report for the year ending December 31, 1921.

Membership, December 31, 1921..	7,853	
New members, 1921.....	570	
Reinstated members, 1921.....	956	
		9,379
Deaths	115	
Resignations	69	184
		9,195
Dropped for non-payment of dues, December 31, 1921.....	327	
Dropped for non-payment of tax, December 31, 1921.....	546	873
		8,322

Elected after October 1, 1921, and credited to 1922.....		342
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Membership, January 1, 1922..	8,664
Membership, January 1, 1921.....	8,123
Membership, January 1, 1920.....	8,571
Membership, January 1, 1919.....	8,268
Membership, January 1, 1918.....	8,339
Membership, January 1, 1917.....	8,287
Membership, January 1, 1916.....	7,940

The report of December, 1921, as compared with that of December, 1920, shows an increase in new members of 541, and a decrease in "members dropped" of 276. In December, 1921, the "members dropped" totalled 873, 465 of whom have already been reinstated, leaving at the present time only 408. It is fair to assume that one-half of these delinquents will later on apply for re-instatement so that before the year ends the "members dropped" will not exceed 200. The increase in membership for 1922, although so far not equal to that of 1921, promises to be satisfactory.

The Society lost the services of a distinguished member, on October 21, 1921, when Dr. Dwight H. Murray died. For years he had been active in both national and state organizations, and at the time of his death was Vice-Speaker of the House of Delegates of the State Society, and Speaker of the House of Delegates of the American Medical Association. He was respected for his decisions, admired for his talents, and loved for his goodness and sweetness of character.

REVISED CONSTITUTION AND BY-LAWS

A careful study should be made of the Revised Constitution and By-Laws which will be presented to the House of Delegates at this meeting.

This revision was prepared by a special committee on By-Laws in conjunction with the legal

counsel of the State Society in accordance with the resolution of the last House of Delegates.

Resolved, That the president be empowered to refer to the Council in conjunction with the legal counsel, the revision of the Constitution and By-Laws of the Society into a more harmonious scheme and in accordance with the proper legal aspect, and to formulate a policy for future guidance together with the plans necessary to carry it into effect. The committee to cause its report to be published twice during the year in the official journal of the Society in time to allow full consideration by the members of the House of Delegates of the Society before final action thereon at the next annual meeting.

THE GROUP LIABILITY POLICY

This plan of insurance has now been in effect for a year. Three thousand members, or about one-third of the Society have availed themselves of its privileges.

LEGISLATIVE BUREAU

The most important action of the year has undoubtedly been the establishment of the *Legislative Bureau* at Albany. The Society has never before taken any step which could equal this in importance. The Bureau has been ably conducted, untiring in its energies, and most valuable in its efforts to arouse interest and to consolidate the members of the Society for the good of both profession and laity. I recommend that the House of Delegates authorize a continuation of this Bureau and vote an appropriation for its maintenance.

Respectfully submitted,

EDWARD LIVINGSTON HUNT,

April 1st, 1922.

Secretary.

REPORT OF THE COMMITTEE ON SCIENTIFIC WORK.

To the House of Delegates:

The Committee on Scientific Work reports that the program was completed on time and speaks for the work of the Committee. With the exception of one Section all the preliminary drafts of the Section programs were well advanced by November, 1921, so that it was possible to get along with a single meeting of the whole committee. The Chairman desires to call the attention of the chairmen of the Sections to be elected this year to the necessity of beginning the work of arranging the details of the program for the next meeting immediately after their election. The preliminary programs should be ready for discussion by the time of the meeting of the committee in November, if there is to be a proper collaboration in arranging for joint meetings when programs of two or more sections expect to have papers covering the same subjects.

Respectfully submitted,

SAMUEL LLOYD,

Chairman.

April 1, 1922.

REPORT OF THE COUNCIL.

To the House of Delegates:

The Council of the Medical Society of the State of New York takes pleasure in presenting the following report:

During the past year meetings have been held on the following dates:

May 5, 1921; Minutes will be found in the July, 1921, issue of the NEW YORK STATE JOURNAL OF MEDICINE, page 274.

December 10, 1921; Minutes will be found in the February, 1922, issue of the NEW YORK STATE JOURNAL OF MEDICINE, page 86.

The Executive Committee has held regular meetings during the year, and a referendum vote of the Council has been taken on all matters of importance which have come before it.

The attention of the members is especially called to the revised Constitution and By-Laws which will be presented for action at this meeting. These By-Laws have been prepared by a special committee assisted by the legal counsel, and much time and thought have been given to their preparation.

Respectfully submitted,

EDWARD LIVINGSTON HUNT,

Secretary.

April 1, 1922.

REPORT OF THE COMMITTEE ON PUBLICATION OF THE COUNCIL.

To the House of Delegates:

The Council at the meeting held in New York City on May 5, 1921, appointed the following Committee on Publication: Drs. Frederic E. Sondern, Edward Livingston Hunt, Joshua M. Van Cott, Arthur J. Bedell and Seth M. Milliken. Dr. Frederic E. Sondern was appointed Editor, and Drs. Edward Livingston Hunt and Joshua M. Van Cott, Associate Editors.

JOURNAL

The Treasurer's report shows the cost of the JOURNAL to the Society in 1921 to be \$7,719.21, a decrease of almost \$1,000 over 1920.

This decrease, which was due to the decrease in the cost of paper, would have been larger were it not for the fact that the amount received from advertisements was less than in 1920.

DIRECTORY

The Directory was published on time, and in accordance with the resolution of the House of Delegates passed in May, 1921, the physicians of the Borough of the Bronx were listed separately from those of the Borough of Manhattan.

The cost to the Society as shown by the Treasurer's books were \$6,641, a decrease of \$1,200 over the previous year. This decrease was due to the reduction in the cost of paper and a slight increase in the receipts from advertisements and sales.

Respectfully submitted,

FREDERIC E. SONDERN,

Chairman.

April 1, 1922.

REPORT OF THE COMMITTEE ON ARRANGEMENTS.

To the House of Delegates:

I herewith submit the following report for the next annual meeting of the State Society:

The regular annual meeting of the House of Delegates of the Medical Society of the State of New York will be held on Monday, April 17th, 1922, at 3 P. M., in Chancellor's Hall, Education Building, Albany, N. Y.

116th regular meeting of the Medical Society of the State of New York will be held on Tuesday, April 18th, at 12 o'clock noon, in Chancellor's Hall, Education Building, Albany, N. Y.

Calling the Society to order by the President, James F. Rooney, M.D.

Invocation by Rt. Rev. Edmund F. Gibbons, Bishop of Albany.

Address of Welcome by Frederic C. Conway, M.D., Chairman Committee on Arrangements.

Reading of Minutes of the 115th annual meeting, Edward Livingston Hunt, M.D., Secretary.

Address of Welcome, Hon. William S. Hackett, Mayor of the City of Albany.

Oration on Surgery, John B. Deaver, M.D., LL.D., Philadelphia, Pa., President of the American College of Surgeons.

The various sections will meet in the Albany County Court House, Eagle and Steuben Streets.

THE COMMERCIAL EXHIBIT:

Will be held in the Albany County Court House.

An automobile ride will be arranged for the visiting ladies, starting at one o'clock P. M., on Tuesday, April 18th, 1922, from the Hotel Ten Eyck and proceeding to Saratoga, where dinner will be served; the party returning to Albany early in the evening.

An automobile ride will be arranged for Wednesday afternoon, April 19th, for visiting ladies, followed by afternoon tea; returning to city early enough so that they will have ample time in which to prepare to accompany their husbands to the dinner in the evening.

Dinner—Wednesday Evening, April 19th, at 7:30, Ten Eyck Hotel. Reception to officers and guests to precede dinner.

The Medical Society of the County of Albany will entertain the members of the Society at dinner at Odd Fellows Hall, Beaver Street, on Tuesday Evening, April 18th, at 7 o'clock. Appropriate entertainment will follow the dinner.

The Committee on Arrangements will be located in the County Court House and the members will be pleased to inform visiting members and their ladies as to points of interest in the city and its environs.

FREDERIC C. CONWAY,

Chairman.

April 1, 1922.

REPORT OF THE TREASURER

SETH M. MILLIKEN, *Treasurer*, In Account with THE MEDICAL SOCIETY OF THE STATE OF NEW YORK
Dr. Cr.

CASH RECEIPTS, YEAR ENDED DEC. 31, 1921.	CASH PAYMENTS, YEAR ENDED DEC. 31, 1921
January 1, 1921, Balance	Rent
Directory Advertising, 1918.....	Telephone
Directory Advertising, 1919.....	Insurance
Directory Advertising, 1920.....	Salaries—General
Directory Advertising, 1921.....	Directory Postage
Directory Sales, 1920.....	Journal Postage
Directory Sales, 1921.....	Journal Commission
Annual Dues, 1920.....	Journal Discount
Annual Dues, 1921.....	Postage
Annual Dues, 1922.....	Journal Publication
Arrears	General Expense
Clerical Work	Stationery and Printing
Telephone	Assessment 1920 returned
Interest on Deposits	Assessment 1921 returned
Journal Subscriptions and Sales...	Journal Expense
Journal Advertising	Directory Discount, 1920.....
General Expense	Directory Discount, 1921.....
Committee on Legislation	Secretary
Interest on Mortgage	Journal Salaries
Furniture and Fixture Sales	Legal Expense
Special Per Capita Charge, 1920..	Legal Expense—Travel
Special Per Capita Charge, 1921..	Furniture and Fixtures
\$64,134.39	Travelling Expense
	Auditing
	Union Dime Bank
	Directory Printing
	Repairs
	Annual Meeting—Stationery
	Annual Meeting, 1921.....
	Annual Meeting, 1922.....
	Committee on Legislation
	Clerical Work
	Directory Commission
	Directory Salaries
	Directory Delivery
	Directory Stationery and Printing
	Directory Incidentals
	District Branches
	Annual Dues, 1921.....
	Journal Advertising
	Committee on Medical Economics.
	\$58,232.57
	Balance on Deposit with Guaranty
	Trust Company, Dec. 31, 1921.
	General
	Committee on Medical
	Research
	\$15,837.89
	Balance—Petty Cash ..
	\$15,848.85
\$74,081.42	\$74,081.42

ANNUAL DUES, 1921				ANNUAL DUES, 1921—(Continued)			
County.	Amt. Paid	County.	Amt. Paid	County.	Amt. Paid	County.	Amt. Paid
Albany	\$603.00	Livingston	\$114.00	Steuben	\$141.00	Washington ...	\$114.00
Allegany	87.00	Madison	90.00	Suffolk	276.00	Wayne	102.00
Bronx	1,326.00	Monroe	1,044.00	Sullivan	87.00	Westchester ...	846.00
Broome	270.00	Montgomery ..	126.00	Tioga	69.00	Wyoming	99.00
Cattaraugus ...	69.00	Nassau	216.00	Tompkins	168.00	Yates	54.00
Cayuga	180.00	New York	8,346.00	Ulster	180.00		
Chautauqua ...	297.00	Niagara	225.00	Warren	93.00		\$25,778.00
Chemung	60.00	Oneida	528.00				
Chenango	222.00	Onondaga	774.00				
Clinton	102.00	Ontario	234.00				
Columbia	123.00	Orange	306.00				
Cortland	51.00	Orleans	60.00				
Delaware	58.00	Oswego	162.00				
Dutchess - Putnam	318.00	Otsego	117.00				
Erie	1,794.00	Queens	456.00				
Essex	63.00	Rensselaer ...	297.00				
Franklin	39.00	Richmond	204.00				
Fulton	117.00	Rockland	102.00				
Genesee	45.00	St. Lawrence ..	183.00				
Greene	85.00	Saratoga	147.00				
Herkimer	84.00	Schenectady ...	300.00				
Jefferson	216.00	Schoharie	54.00				
Kings	3,099.00	Schuyler	30.00				
Lewis	51.00	Seneca	75.00				

ADVANCE DUES, 1922

County.	Amt. Paid	County.	Amt. Paid
Albany	\$5.00	Nassau	\$15.00
Allegany	5.00	New York	365.00
Bronx	45.00	Oneida	5.00
Broome	5.00	Queens	15.00
Cattaraugus ...	81.00	Richmond	5.00
Columbia	5.00	Schenectady ...	5.00
Dutchess - Putnam	5.00	Suffolk	15.00
Erie	405.00	Washington ...	5.00
Essex	5.00	Wayne	15.00
Jefferson	5.00	Westchester ...	15.00
Kings	665.00	Wyoming	15.00
Monroe	15.00		
		\$1,721.00	

Dr. Cr.
REPORT OF THE TREASURER—Continued.

DIRECTORY ACCOUNT.

<i>Income.</i>		<i>Expenditures.</i>	
Advertisements	\$3,560.65	Printing	\$6,899.51
Sales	2,723.75	Salaries	3,595.62
	\$6,284.40	Incidentals	11.20
Cost of Directory	6,641.01	Commissions	509.55
	\$12,925.41	Discounts	105.25
		Postage	530.40
		Delivery	849.73
		Stationery and Printing	424.15
			\$12,925.41

JOURNAL ACCOUNT, YEAR ENDED DECEMBER 31, 1921.

<i>Income.</i>		<i>Expenditures.</i>	
Advertisements	\$10,718.98	Publication	\$13,165.63
Sales	315.34	Postage	1,192.08
	\$11,034.32	Expenses	130.70
Cost of Journal	\$7,719.21	Salaries	2,203.19
	\$18,753.53	Commissions	1,756.58
		Discounts	305.35
			\$18,753.53

BALANCE SHEET, DECEMBER 31, 1921.

<i>Assets.</i>		<i>Liabilities.</i>	
Current Cash:		Current	
Petty Cash	\$10.96	Advance Dues, 1922	\$1,721.00
Cash in Bank.....	15,837.89	Committee on Medical Research.	465.47
	\$15,848.85		\$2,186.47
Accounts Receivable ...	973.89	Trust Funds	
Inventory		Lucien Howe Prize Fund.....	\$2,490.96
Directory	\$600.00	Merritt H. Cash Prize Fund....	1,156.24
Directory Advertising	745.00		\$3,647.20
	\$1,345.00	Surplus	
	\$18,167.74	Balance, January 1, 1921.....	\$11,764.67
Deferred Charges		Deduct Adjustments	238.67
Annual Meeting, 1922	54.75	Add	\$11,526.00
Trust Fund Investments		Excess of Income	5,967.27
Union Dime Savings Bank,			\$17,493.27
Lucien Howe	\$740.96		
Union Dime Savings Bank,			
Merritt H. Cash	406.24		
Liberty Bonds	500.00		
Title Guarantee Mortgage Certi-			
ficates	2,000.00		
	\$3,647.20		
Fixed			
Furniture and Fixtures	1,457.25		
	\$23,326.94		\$23,326.94

Respectfully submitted, S. E. HENDERSON & CO., Public Accountants.

INCOME AND EXPENDITURES, YEAR ENDING DECEMBER 31, 1921.

<i>Income.</i>		<i>Expenditure.</i>	
Annual Dues, Arrears	\$249.00	Annual Meeting	\$1,105.33
Annual Dues, 1920	989.00	Committee on Medical Economics.	8.00
Annual Dues, 1921	26,588.00	Salaries—Secretary	500.00
Special Per Capita Charge, 1920...	2,618.00	Salaries—General	4,163.35
Special Per Capita Charge, 1921...	15,200.00	Rent	1,600.00
Clerical Work—General	142.22	Telephone	128.98
Clerical Work—New York County	127.92	Stationery and Printing	732.55
Interest on Deposits	384.75	Postage	184.28
		Expenses	419.00
		Insurance	5.70
		Auditing	200.00
		Legal Expenses	13,451.28
		Travelling Expense	1,120.32
		Committee on Legislation	1,860.28
		District Branches	492.33
		Cost of Directory	6,641.01
		Cost of Journal	7,719.21
			\$40,331.62
		Excess of Income	5,967.27
	\$46,298.89		\$46,298.89

REPORT OF THE COMMITTEE ON LEGISLATION.

To the House of Delegates:

The report of your Committee on Legislation must be somewhat of a different type than that of previous years, since the establishment of the Legislative Bureau at Albany as an aid to the Committee in its work has greatly amplified said work over previous years.

The Bureau was established in September, 1921, there seeming to be no great need for the expenditure of funds before that time, and is located at 51 Chapel Street, Albany, N. Y., in two small offices very convenient for such purpose.

There has been a paid Secretary who has been on duty daily from nine in the morning until five in the afternoon and many times until all hours of the night working with your Chairman and your Committee in the endeavor to promote the interests of the profession as dictated by your Council and the individual information given by your County Legislative Chairman throughout the Legislative session.

So soon as the Bureau was established it proceeded to inform the various officials of the constituent County Societies that they might know where to look for information and to foster in their home counties through them the sending of information relative to the wishes of the doctors in the counties, the lay people interested in public health and its conservation, and the attitudes of the various State legislative officials and others interested in politics relative to these State wide questions.

Information was asked first of the County Society Presidents as to who constituted their various Committees and their Chairmen, that liason might be established at once with the proper officials. About twenty per cent of these officials fell down on their work and did not answer this communication.

Then followed communications to the County Legislative Chairmen asking that they interview the prospective legislative candidates of all parties in the primaries, relative to their attitudes on the four great questions which heretofore had greatly concerned the medical profession; 1st: Health Insurance; 2nd, Health Center; 3rd, Chiropractic legislation since that had appeared for so many years in the legislative halls and was the leading extra medical cult seeking admission for its practice in this State; 4th, Re-registration, which had been discussed at great length at several previous sessions and might crop up once more.

It was realized that many legislators might not care to discuss these questions until they really came to the legislative halls, yet it was hoped that the County Chairmen would establish such a type of entente cordiale with their several Senators and Assemblymen that matters could

be discussed on a broad, free and frank basis later, for the medical profession has nothing to hide in its legislative desires, despite the slurs which are continually aimed at it as being selfish in type.

From these questionnaires a small percentage of valuable information was gleaned which helped in the work later of getting straight in the minds of our legislators the medical matters which came up, and of clearing up the atmosphere relative to the various bills which would be inimical to the interests of public health in the State as viewed from the standpoint of medical men and lay people.

Other communications as to information sought were sent to other officials of the County Societies in the hope that thus the ground might be prepared for later plans which had been formulated for weekly or semi-weekly bulletins as to the exact status of legislative matters in which the State Society and its constituent bodies and the individual members might be kept informed.

As a start along such lines it may be said that the medical profession of this State has been more awakened individually to the actual necessities of public health and to the interests in which each physician, and especially the leaders of the profession, are indebted to their medical constituents, the profession and the people as a whole.

With the advent of the opening of the legislative session came the sending out of master bulletins to the County Legislative Chairmen, in the hope that by this means the news of weekly progress might be disseminated throughout the profession in much better manner than in previous years.

How well this plan has worked remains for you as individual members of County Societies to judge. It is known that some Chairmen did not function as was intended and if this Bureau and this type of dissemination of information is to be continued, means must be considered whereby a live and energetic physician will be honored with the appointment as a County Legislative Chairman, thus to show his love and zeal for the profession.

Twelve such bulletins have been issued and your Chairman has further to say in the recommendations concerning this manner of work:

Toward the close of the session when matters concerning the various bills were heading toward final consideration, it became necessary to utilize the telegraph and telephone as a means of more prompt communication.

One Chairman had his district so well organized that within twenty-four hours after the receipt of a message, conclusive evidence appeared in the Bureau that he was alive to the situation from the responses coming in. Would that all were so energetic.

This in very brief form indicates the line of

work pursued, but does not set down the hours of work necessary on the part of your body of Legislative Chairmen from top to bottom in their desires to bring about outcomes satisfactory to your wishes.

A brief résumé of the major bills will but serve to recall the necessity of such a bureau and the watchfulness required relative to professional and public interests:

Senate Bill, Int. No. 177, introduced by Senator Boylan, concurrent Assembly Bill, Int. No. 64, introduced by Mr. James Male. Compulsory nurse attendance. Died in Committee.

Senate Bill, Int. No. 338, introduced by Senator Walker, concurrent Assembly Bill, Int. No. 401, introduced by Mr. Donohue. Narcotic Bill. Died in Committee.

Senate Bill, Int. No. 368, introduced by Senator Dunnigan. One of the Chiropractic Bills. Died in the Senate Committee.

Senate Bill, Int. No. 371, introduced by Senator Boylan, concurrent Assembly Bill, Int. No. 353, introduced by Mr. Betts. The Animal Experimentation Bill. Died in Committee. This Bill will come up each year owing to the funds at the command of the Anti-Vivisectionists.

Senate Bill, Int. No. 393, introduced by Senator Straus, concurrent Assembly Bill, Int. No. 177, introduced by Mr. Ullman. Relating to medical inspection and service in schools. The Bill was drawn in such a manner as to bring objections from the medical profession by granting to the medical inspectors the power of treatment of those whom they had seen in the schools, which was considered as tending toward State medicine. Senator Straus most happily accepted suggestions for remedying this and co-operated with your President and your Committee on Legislation in attempting to modify the bill in connection with the State Medical Inspector of Schools, but owing to the lateness of its introduction and the shortness of the session, the bill as suggested for amendments did not appear, and died in Committee. Co-operative efforts should be attempted early next fall to draft a satisfactory bill for the public welfare.

Senate Bill, Int. No. 536, introduced by Senator Bloomfield, concurrent Assembly Bill, Int. No. 741, introduced by Assemblyman Dr. Lattin. Amending the Public Health Law relative to certain changes regarding examinations of candidates and other features, passed the Senate late in the session and then owing apparently to a political *faux pas*, was substituted for the like bill in the Assembly where it was amended by Mr. Betts of Wayne County, an avowed admirer of Chiropractic and of drugless healing, and suffered return to the Assembly Committee on Public Health from whence it could not be rescued and passed, before the end of the session.

The amendment offered by Mr. Betts is here given in full that the members may realize how the change of a few words may exempt a horde of uneducated people following a particular cult from already established legal and legislative enactments, and thus foist them upon the public under the guise of educated practitioners of some particular cult:

The amendment is: "or the massage, manipulation or adjustment by hand of muscles, joints or spinal vertebrae when not done for the purpose of curing or treating a contagious or infectious disease."

An attempt was made to call up the concurrent Assembly bill, but through loss of concerted action as should have been formulated on the floor of the House by your professional representative, the Chairman of the Assembly Public Health Committee, the bill could not be resurrected from the Committee on Rules into which the Assembly had entered.

Senate Bill, Int. No. 537, introduced by Senator Bloomfield, concurrent Assembly Bill, Int. No. 740, introduced by Assemblyman Dr. Lattin, was also an amendment to the Public Health Law relating to changing the manner of prosecution of illegal practitioners of medicine. This with the previous bill drew the concerted and strong fire of the Chiropractic lobby which has existed in the legislative halls for so many years seeking entrance to public life through every means not consistent with present scientific deductions and progress along the lines of public health, and avowedly in the interests of private gain.

After those in the legislature who were avowedly cemented to cults seeking entrance in the State for their practices and much work on the part of the real friends of the lay people, the Bill was passed and at this writing lies before the Governor for his signature.

It aims at no particular cult and was introduced under the auspices of the State Department of Education which has to do with the government of all the regular professions in the State, as well as of the State Department of Health which has had its troubles with those who are quietly practicing medicine under different pseudonyms, thereby menacing the health of the State at large through non-recognition of contagious and infectious diseases, and of the Medical Council of the State consisting of the deans of the various Colleges together with the State Board of Medical Examiners and fostered by your State Society, the Bill was deemed a fair and just one, of progressive and affirmative legislation.

Senate Bill, Int. No. 616, introduced by Senator Tolbert, concurrent Assembly Bill, No. 832, introduced by Mr. Jesse, concerning fee-splitting, and so far as could be learned was introduced

at the instigation of a group of members within our own body, but without consultation with the Committee on Legislation or any persons in authority, until it appeared in the legislative hall's. Since this matter is covered in the Medical Practice Act and elsewhere and has been the subject of discussion in all State and National bodies, your Committee deemed that it would hold the profession up to ridicule in the eyes of laymen. The question was asked time and again by fast friends in the legislature, why we did not have in our own State body the means of disciplining those who were guilty of this despicable practice. Happily the bill was not pushed when opposition developed on the part of the State Society and it died in Committee.

Senate Bill, Int. No. 631, introduced by Senator Knight, concurrent Assembly Bill, Int. No. 866, introduced by Mr. C. P. Miller, had to do with the Workmen's Compensation Law. Despite the amendments offered to the large Committee which was formed last year at the suggestion of the Industrial Commissioner and in which committee representation was given to the medical profession and which amendments were offered by the medical representatives on that large committee, the bill appeared with section 13 relating to attendance upon injured employees without giving the free choice of physician to the injured employee. Objection was made at the Committee hearing and an amendment was introduced but evidently was not considered by the combined Committees of the Senate and Assembly, and so toward the end of the session, Senator Farrell introduced Senate Bill, Int. No. 1026, concurrent Assembly Bill, Int. 1343, introduced by Mr. McLoughlin, embodying this desire. These amendments, however, died in Committee and the Bill now lies before the Governor with a hearing called for April 12; having the original undesirable feature unamended.

Senate Bill, Int. No. 708, introduced by Senator Duell, concurrent Assembly Bill, Int. No. 699, introduced by Mr. Antin. Concerning Maternity Welfare and purposing to take advantage of the federal fund as offered by the Sheppard-Towner Act of Congress. This bill died in Committee.

Senate Bill, Int. No. 584, introduced by Senator Seidel, a Socialist from New York. The Health Insurance Bill. Had no concurrent Assembly bill, and died in Committee.

Senate Bill, Int. No. 854, introduced by Senator Lockwood, concurrent Assembly Bill, Int. No. 1157, introduced by Mr. Harris, was one which should have had the support of all legally authorized institutions of learning, in that it prohibited the use of a degree of whatever nature, by any person unless the same had been conferred by an institution authorized by the re-

gents of the State, or through legislative enactment to confer such a degree. This bill was fought bitterly also by the Chiropractors since their colleges have no recognized legal standing in this State, nor is their degree granted legally in any of the States of the Union, save through waiver clauses in bills that have passed the legislature in other States. While the bill was not primarily aimed at any particular cult or group, still they assumed apparently that it was a direct thrust at them, and opposed the same so vigorously in the Assembly as to defeat it by a vote of 99 to 25. This bill was a good criterion as to the attitude of many of the Assemblymen relative to their desires to elevate education in general throughout the State. The medical profession quite naturally takes an interest in the attitude of these Assemblymen because each physician holds the degree of doctor of medicine conferred by a legally authorized college and must come in contact with others in the educated world who have received degrees of various kinds not so conferred as their own.

For the information of the members of our Society, it would be well for the individual County Legislative Chairmen to interview those who voted "against" the bill, and ascertain the reasons therefore, and the roll call on this bill is appended herewith that such information may be easily obtained.

Affirmative—Republicans: Mr. Adler, Monroe Co.; Mr. Aronson, New York; Mr. Banks, Oswego; Mr. Bartholomew, Washington; Mr. E. C. Campbell, Albany; Mr. DePew, Rockland; Mr. Hackett, Dutchess; Mr. Harris, Monroe; Mr. Hausner, Schuyler; Mr. Hickey, Erie; Mr. Hutchinson, Fulton-Hamilton; Mr. Joiner, Wyoming; Mr. Lattin, Orleans; Mr. C. T. Male, Schenectady; Mr. McCleary, Montgomery; Mr. McGinnies, Chautauqua; Mr. Osborn, Greene; Mr. Palmer, New York; Mr. Rayher, New York; Mr. Ricca, Kings; Mr. Rice, Cortland; Mr. J. C. Smith, Otsego; Mr. Waterbury, Columbia; Mr. Webb, Dutchess; Mr. Westall, Westchester.

Affirmative—Democrats: None.

Negative—Democrats: Mr. Antin, Bronx; Mr. Brunner, Queens; Mr. Burchill, New York; Mr. J. E. Cosgrove, Queens; Mr. T. F. Cosgrove, Richmond; Mr. Cronin, Kings; Mr. Cross, Sullivan; Mr. Cuvillier, New York; Mr. Dever, Queens; Mr. Dickstein, New York; Mr. Eberhard, Bronx; Mr. Evans, Kings; Mr. Franklin, Kings; Mr. Galgano, New York; Mr. Gray, Kings; Mr. Hackenburg, New York; Mr. Howard, Kings; Mr. Kahan, New York; Mr. Kieran, New York; Mr. Kleinfeld, Kings; Mr. Leininger, Queens; Mr. Loscalzo, Queens; Mr. Lyman, Bronx; Mr. J. Male, New York; Mr. McArdle, Kings; Mr. McDonald, Bronx; Mr. McKee, Bronx; Mr. McLoughlin, Mr. F. A. Mil-

ler, Kings; Mr. Nugent, New York; Mr. O'Connor, New York; Mr. Patrzykowski, Erie; Mr. Patterson, Bronx; Mr. Reiburn, New York; Mr. Reilly, Kings; Mr. Rourke, Rensselaer; Mr. Schoffel, Bronx; Mr. Sidney, Schoharie; Mr. Steingut, Kings; Mr. Taylor, Kings; Mr. Thomas, Queens; Mr. Tonry, Kings; Mr. Vaughan, Richmond; Mr. Wackerman, Kings; Mr. Walsh, Bronx.

Negative—Republicans: Mr. Barnes, Oswego; Mr. Betts, Wayne; Mr. Bly, Kings; Mr. Brundage, Orange; Mr. W. Campbell, Schenectady; Mr. Cheney, Erie; Mr. Clayton, Kings; Mr. E. E. Cole, Steuben; Mr. Cowee, Rensselaer; Mr. Davison, Nassau; Mr. Dobson, Seneca; Mr. Eldridge, Warren; Mr. Ellsworth, Franklin; Mr. Esmond, Saratoga; Mr. Everett, St. Lawrence; Mr. Farrell, Orange; Mr. Gaffers, Albany; Mr. Hager, Cayuga; Mr. Hall, Niagara; Mr. Harrington, Clinton; Mr. Jeffery, Niagara; Mr. Jenks, Broome; Mr. Jesse, New York; Mr. Kaufman, New York; Mr. Kirkland, Cattaraugus; Mr. Laidlaw, St. Lawrence; Mr. Lewis, Monroe; Mr. Livermore, Westchester; Mr. Long, Delaware; Mr. Mastick, Westchester; Mr. McWhinney, Nassau; Mr. C. P. Miller, Genesee; Mr. Moore, Westchester; Mr. Moran, Lewis; Mr. Murphy, Monroe; Mr. Nichols, Mr. Porter, Essex; Mr. Richford, Chemung; Mr. Sackett, Ontario; Mr. Seelbach, Erie; Mr. T. K. Smith, Onondaga; Mr. Soule, Onondaga; Mr. Stapley, Livingston, Mr. Steinberg, New York; Mr. Van Wagenen, Ulster; Mr. Wells, Kings; Mr. Westerbeke, Suffolk; Mr. Wheatley, Steuben; Mr. Whitcomb, Broome; Mr. Witter, Tioga; Mr. Williams, Oneida, Mr. Wright, Chautauqua; Mr. Yale, Putnam.

Not voting—Republicans: Mr. Alexander, Kings; Mr. Blakely, Westchester; Mr. Booth, Oneida; Mr. Brooks, Madison; Mr. Caulfield, Kings; Mr. Chamberlin, Onondaga; Mr. F. S. Cole, Herkimer; Mr. Crews, Kings; Mr. Duke, Allegany; Mr. Dunmore, Oneida; Mr. Fenner, Tompkins; Mr. Judson, Monroe; Mr. Lown, Yates; Mr. Machold, Jefferson; Mr. Peck, Suffolk; Mr. Rowe, Erie; Mr. Slacer, Erie; Mr. Ullman, New York; Mr. Zimmerman, Erie.

Not Voting—Democrats: Mr. Beasley, Erie; Mr. Bloch, New York; Mr. Cross, Sullivan; Mr. Donohue, New York; Mr. Fasullo, Kings; Mr. Felenstein, New York; Mr. Hamill, New York; Mr. Merrigan, Albany; Mr. Yacenda, Kings.

The Committee on Legislation will welcome this information from each County Legislative Chairman.

Senate Bill, Int. No. 893, introduced by Senator Davenport, concurrent Assembly Bill, Int. No. 1140, introduced by Mr. Moore, had to do with the establishing of a division of maternity, infancy and child hygiene in the State Health Department. While mild objection was offered

on the part of the Committee on Legislation through its Chairman to the very broad provision establishing this division, nevertheless trust must be reposed in those who have shown themselves to be friendly to the profession in so many instances, and the bill shaped itself into one of progressive legislation and hence, eventually received the support of your Society. It passed both Houses and now lies before the Governor for his action.

Senate Bill, Int. No. 1282, introduced by Senator Bloomfield, concurrent Assembly Bill, Int. No. 1648, introduced by Assemblyman Dr. Waterbury, was intended to satisfactorily adjust the Narcotic question and had the approval of your Committee, but it died in the Committees on Public Health, since time was too short to take up the cudgels in its favor.

A total of 31 bills, in which the Medical Society had greater or less interest, were introduced in the Senate.

As to the Assembly bills other than those mentioned previously, there were introduced the following:

Assembly Bill, Int. No. 311, introduced by Assemblyman McWhinney, concurrent Senate Bill, Int. No. 199, introduced by Senator Thompson and known as an amendment to the Public Health Law, which did not concern the profession deeply. Died in Committee.

Assembly Bill, Int. No. 424, introduced by Assemblyman Cuvillier, and having no concurrent Senate Bill, was known as the Birth Control Bill, and died in Committee.

Assembly Bill, Int. No. 685, introduced by Assemblyman Cuvillier, making it a misdemeanor to practice Chiropractic, etc., had no concurrent Senate Bill and died in Committee.

Assembly Bill, Int. No. 751, introduced by Assemblyman Antin, had no concurrent Senate Bill. To amend the General Construction Law relating to personal injury of an unborn child. Died in Committee.

Assembly Bill, Int. No. 1178, introduced by Assemblyman Jenks, concurrent Senate Bill, Int. No. 860, introduced by Senator Knight, amending certain sections relating to the practice of nursing. Contained no objectionable features, was passed and is now before the Governor for consideration.

Assembly Bill, Int. No. 1274, introduced by Assemblyman Bloch, had no concurrent Senate Bill. It would establish a division of narcotic drug control in the State Department of Health. It was lost in Committee.

Assembly Bill, Int. No. 1283, introduced by Assemblyman Everett, had no concurrent Senate

Bill. It defined and regulated the practice of Chiropractic on even a lower scale than that required of the osteopaths in 1907, and it died in Committee.

Assembly Bill, Int. No. 1287, introduced by Assemblyman Hamill. Adding a new section to the penal law making it a felony to sell or give away habit-forming drugs, passed both Houses and now rests with the Governor for consideration. Inasmuch as this bill did not in any way infringe upon the rights of physicians as interpreted, no objection was offered to the same.

Assembly Bill, Int. No. 1421, introduced by Assemblyman James T. Male, was another bill relating to the practice of Chiropractic. Had no concurrent Senate Bill and died in Committee.

Assembly Bill, Int. No. 1437, introduced by Assemblyman Loscalzo, was a further amendment suggested to section 174, public health law, making it a felony instead of a misdemeanor as at present to practice medicine without a license. There was no concurrent Senate Bill and this bill unfortunately died in Committee.

Assembly Bill, Int. No. 1537, introduced by Assemblyman Dr. Lattin, concurrent Senate Bill, Int. No. 1153, introduced by Senator Bloomfield, had to do with the licensing of midwives by the State Commissioner of Health. This bill passed both Houses and now lies before the Governor for his consideration.

In general there were also 31 bills before the Assembly for consideration by your Committee on Legislation.

This résumé should give the individual members of the Society an idea of the work that has gone on in the legislature.

The members of the State Society owe their thanks and appreciation for the painstaking manner in which the interest of the public health was cared for in relation to medical legislation, both affirmative and negative, to Senators Bloomfield, Duggan, Farrell, Straus, Sheridan, Dick and Lockwood, and to Assemblyman Machold, Adler, Jenks, Wright, Bloch, Donohue, McGinnies, Cuvillier, Harris, Duke, Hutchinson, J. C. Smith and Waterbury, who have throughout shown extreme courteousness and consideration in Committee hearings and personal meetings to your Chairman of the Committee on Legislation, and its members and others who have addressed them on these matters.

Your Committee wishes publicly to thank the members of the Senate and Assembly who have without exception shown the greatest courtesy and appreciation for enlightenment on medical

subjects whereby the public health may be conserved and protected in the interests of public welfare. Many of these legislators have, however, hidden their lights under a bushel and their actions have only been known, while their words were lacking.

Your Committee desires to pay its compliments and thanks to Assemblyman Lattin for his efforts in promoting the amendments to the public health law relating to the practice of medicine. It cannot, however, refrain from stating that, in its judgment, Senate Bill, Int. No. 536, concurrent Assembly Bill, Int. No. 741, which in no wise affected any one but practitioners of medicine, might also have passed the Assembly had Assemblyman Lattin, who had asked for the privilege of its introduction, been alert and demanded a slow roll call. Others of the Assembly who were waiting for such a move, deferred to Assemblyman Lattin, and therefore the bill was lost, since it is believed many of the Assemblymen were unacquainted with the final true provisions and sections of the bill.

Your Committee also cannot pass by in this report the open negative or hostile attitude assumed by certain legislators as evidenced by their actions during the session. In some instances, undue criticism may be laid upon them, but members of the profession should realize that their attitude is public in character. Senator Boylan, who was opposed to the bills introduced by the Education Department and the Medical Society of the State, was the introducer of the compulsory nurse attendance bill and the Animal Experimentation Bill; Senator Walker, who was also opposed to the same bills until he saw the light of reasoning; Senator John J. Dunningan was an opponent of most of the bills and introduced one of the lowest grade Chiropractic bills in the Senate; Senator Gibbs, who heretofore has shown unfailing courtesy to the medical profession, but who appeared before the Governor at the hearing on our Senate Bill, Int. No. 537, and was strongly in favor of having the Governor veto the bill, appearing for the Chiropractors.

In the Assembly, Mr. James T. Male was the father of the compulsory nurse attendance bill and also introduced a Chiropractic bill of low grade; Mr. Betts introduced the bill on Animal Experimentation, was the chief opponent of the Lockwood-Harris Bill in the Assembly, relating to the granting of degrees, and fought tooth and nail for all types of Chiropractic legislation which would be to their benefit. At the last moment when the Bloomfield-Lattin Bill came up for passage in the Assembly, Assemblyman Betts of-

ferred the amendment which has been commented on before; Mr. Jesse introduced the fee-splitting bill, probably through misguided suggestion; Mr. C. P. Miller, who introduced the amendments to the Workmen's Compensation Law, which bill did not contain the free choice of physician as desired by the profession; Mr. Everett, who introduced a Chiropractic bill in which the waiver clause was so broad as to allow anyone virtually to start in practicing; Mr. O'Connor, who spoke so vigorously against the Lockwood-Harris Bill; Mr. Esmond, who was especially active in behalf of the Chiropractors, as well as was Dr. Cole.

In submitting this report the members of the Committee on Legislation wishes to 'extend their thanks also, as does the Chairman, personally, to Dr. Augustus S. Downing, the Assistant Commissioner of Education, who always labors so indefatigably for the betterment of every profession and its ideals, and whose successive yearly activities do naught but add laurels to his character and worth.

Again we are thankful and pay our respects as a Committee to the State Commissioner of Health, Dr. Hermann M. Biggs, and to the Assistant Commissioner of Health, Dr. Matthias Nicoll, who has never been found wanting at Committee hearings when the profession's best thoughts have been needed to aid in all lines of progressive medical endeavor.

As in the past years the Secretary of the State Board of Medical Examiners, Dr. William D. Cutter, deserves our thanks and commendations for watching from day to day the progress of bills on the floor of both Houses, and ever evincing his love and friendship for the profession.

And to our own President, a Hercules for work, and a wizard in divining the future thoughts and actions of the legislators, your Chairman wishes to extend his thanks.

No organization can exist successfully for long unless there is harmony within the ranks of the workers and your Committee on Legislation is deeply grateful to the County Chairmen of Legislative Committees, to the officials of the County Societies, and to individual members of the State Society, too numerous to mention, who have aided us with their advice and friendly criticism, their active work and their harmonious attitude in the large majority of efforts put forth. A hint, a letter, even though it is of criticism, sometimes open the way toward a definite move which presages success.

JAMES N. VANDER VEER,
Chairman.

April 1, 1922.

Your Committee respectfully offers the following recommendations:

1. That the Bureau be continued as this is the only means whereby medical men can communicate regarding the legislation of the day in an ethical manner.

2. Attention need only be called to the numerous Chiropractic advertisements which appeared following the passage of the medical practice bill.

The maintenance of the Bureau has cost about 40 cents per capita of membership in the Society. It would seem that for the next year there should be appropriated the sum of \$5,000 or thereabouts, if the same work is to be accomplished as was done this past session. If it is planned to send the bulletins broadcast to each individual member of the State Society, this would approximate \$5,000 additional. The House of Delegates must judge whether the expenditure of such a sum is worth while. Your Committee on Legislation suggests, however, that some such procedure at least in part be carried out, as it is along lines of education; for the individual member of the State Society has in a great measure lost his perspective as to his indebtedness to the profession as a whole and to some other community than his own, and this must needs be reawakened.

2. That all County Legislative Chairmen meet with the Committee on Legislation at some central State point, just after the primaries are held and at least once during the session, that they may visualize their honorable position in our State life. Provision should be made for paying their expenses or, at least, their railroad fares for such a meeting.

3. That the Committee on Legislation be empowered to expend some of its funds that its members may now and again meet with the different County Societies, if so desired by the Counties, to aid in the correlation of work.

4. That means be provided by the State Society in the way of funds to employ more help, and possibly for minor traveling expenses so that this legislative work may be correlated with other States and thus more prompt service be rendered by the Bureau to the State Society and its individual members and to Societies of other States, that preparation can thus be made to assist other States in the co-ordination of all legislative work within each State, and within the United States, to work in harmony as a State and National affair. This could probably be accomplished by urging the formation of an Information Bureau in each State such as has been attempted here, and requesting that a National Information Bureau be established in the headquarters of the American Medical Association; but we must avoid the evil of centralization as much as possible, and maintain the dictum of home rule in

each County Society as well as in each State Bureau.

5. That better organization be planned in each County Society, especially bearing in mind the selection of the Chairman of the Legislative Committee. Because of lack of organization in many County Societies, the Bureau has been hampered, where it could be of more value in building up these County Societies. In some instances much material could be mimeographed and sent to the members of these Counties direct from the Bureau on recommendation of the County Legislative Chairmen, or some other authorized official.

In only two instances this past session have requests gone out from the Bureau to the County Legislative Chairmen and their members for assistance at hearings, save where the Chairman of the Committee on Legislation sent personal requests knowing intimately of the nature of the hearings.

6. That the County Societies be urged to provide funds for the County Legislative Chairmen, so that each member may be kept informed through the master letter each week or oftener by the County Legislative Chairmen. It is not fair to ask the County Legislative Chairmen to bear this expense, and yet many of them have willingly done so during the last session. The other alternative is for the State Society to provide such funds as have been mentioned. To send the circular letter and bulletin No. 5 to every member of the State Society cost \$355.40. To send twelve or more would cost as much as has been paid out for the entire maintenance of the Bureau since September. These bulletins have been commented on favorably and should be continued as we have thus far done, but to send from this Bureau to all of the individual members would necessitate the purchase of a mimeograph or multigraph machine, an addressograph, and the employment of a clerk to help the Committee's secretary. During this short session there were not many bulletins; in the next year there may be twice that number necessary during the session to say nothing of monthly or semi-monthly bulletins during the balance of the year.

7. That the Chairman of the Committee on Legislation must have complete charge of all hearings before the Committees of the legislature, and it should be made public to all members of the Society by resolution of the House of Delegates that any member of the State Society intending to speak "for" or "against" a bill, should first communicate with the Chairman of the Committee on Legislation before or on the day of the hearing on any bill, and if such is not done, that the Chairman be empowered to communicate to the Council of the State Society and recommend that said member be censured.

One member of the Society may appear at a

hearing and without the presentation of any credentials whatsoever, may claim to represent certain branches, subcommittees, subdivisions, etc., of the State Society, and by his word of mouth can destroy the good impression created by speakers selected with a knowledge beforehand of those best suited to accord with the subject and with the personnel of the Committees of the State legislature.

8. That the functions of the Legislative Bureau might be extended, in conjunction with other standing Committees of the State Society, through the County Chairmen by means of bulletins sent out to the various Counties, whereby the County Societies might and should make use of the local public press. This could be readily brought about so that each County Society could conduct a campaign of education of the lay public, following some definite program throughout the State, which could be drawn up in advance, and would be of great value in combatting the advertising propaganda of commercial types now appearing in such great quantity from the various cults.

9. That there should be a studied and concentrated effort made by this State in association with other States of the Union against further enactments by Congress, or regulations by Bureaus established by Acts of Congress, of burdensome, unnecessary and restrictive laws relating to the administration of needful and indispensable drugs as has been evidenced by the regulations so far put into force relating to alcohol and narcotics. The October, 1921, federal regulations relating to narcotic drugs have made it necessary to inscribe on the prescription which is a semi-public record, the name, etc., *AND DIAGNOSIS* on every prescription for narcotic drugs, where given for a period of longer than thirty days. This violates the law of the State of New York if a physician does so, relative to privileged communications.

If so carried out in accordance with the federal law, as physicians we are liable to civil suit and criminal prosecution, and if not done thus to accord with the State law, we commit a violation of the federal law. This is an anomaly and should be co-ordinated satisfactorily in some way.

Your Committee recommends that proper legislative action be taken looking toward such a change.

10. In view of the fact that the drafted Chiropractic bills as introduced tended to a lower and lower standard in each successive instance, and that the Chiropractors tacitly admitted before His Excellency, the Governor, in their hearing, that they were practicing a type of healing,

Our Committee recommends and would strongly urge that a uniform bill be drawn with the basic ideas as in the Osteopathic Bill of 1907, relative to the waiver clause, and that no deviation of line of action be recommended other than allowed by the basic principles of such bill.

COMMITTEE ON LEGISLATION,

JAMES N. VANDER VEER, *Chairman*,
FRANK D. JENNINGS,
ERASTUS CORNING.

April 1, 1922.

REPORT OF THE COMMITTEE ON
MEDICAL RESEARCH.

To the House of Delegates:

The Committee on Medical Research desires to report that during the current session of the Legislature the Betts Assembly Bill, No. 353, and the Boylan Senate Bill Int. No. 371 were introduced to amend the penal law to prevent experiments of all kinds upon living dogs.

Public spirited citizens, representatives of colleges, medical and public health organizations and the members of your Committee protested to the members of both Houses and proper objections were also detailed at the hearing before the Assembly Committee on February 7th.

The bills have not been reported out of Committee to date.

Respectfully submitted,
FREDERIC E. SONDERN,
Chairman.

April 1, 1922.

REPORT OF THE COMMITTEE ON PUBLIC
HEALTH AND MEDICAL EDUCATION.

To the House of Delegates:

We beg herewith to report that the activities of this committee have been synchronous with those of the Executive Committee of the Council during the year just past. Many questions involving public health, in the broader sense, have been discussed and constructive work has been accomplished. We feel that the work with the Executive Committee, in conjunction with the Committee on Legislation has been practical and should accrue to the benefit of the Society and the profession at large. We have observed the working of the new legislative bureau in Albany and feel that the House of Delegates never did a wiser or more practical act, than when they voted funds for the establishment of this bureau. The time has passed, when committees having large scope can accomplish much without proper equipment for transacting business on a modern basis; and the intensive and effective work of the Legislative Committee, the result of the ability and industry of its members, backed by a well organized bureau is a practical demonstration of what

can be accomplished by intelligent action on the part of the Society in properly financing the work of those upon whom devolve the duty of carrying on its functions.

There has been no era in the history of the Medical Society of the State of New York when so many difficult problems involving not only the public health and happiness, but the very existence of decent medicine in the State are before us for adjustment; and if we are to cope with them successfully, we must be ready for sacrifice of time, energy and money to whatever extent may be necessary. Those who cannot afford the time and energy must be willing to give liberally of their money. This is not only a public duty, but also a necessity, if we propose to hold the respect and confidence of the public and keep medicine on a plane which will induce men of high ideals and mental ability to join our ranks.

The problems of public health, of medical legislation and medical practice should be regarded as individual to every person holding a license to practice medicine in our State; and it should be the duty of each and all to forget personality and give all of the best of self to any form of work or sacrifice, which may offer for the solution of these problems. If the individual cannot see this point, then the whole state of medicine in New York State is menaced.

Our experience with the Executive Committee during the year has been illuminating, in that it has demonstrated the possibilities of intensive, sincere and unselfish work directed in the best interests of the Society and medical profession by a small representative body, meeting at a definite place at stated intervals, with a secretarial staff and all necessary physical appointments immediately at hand. There can be no doubt but that such work could be extended to the Committee on Public Health, if and when the Society felt it wise to vest this committee with definite power and spend the money necessary to establish a system on a par with the Legislative Bureau.

Respectfully submitted,
JOSHUA M. VAN COTT, *Chairman.*

April 1, 1922.

REPORT OF THE COMMITTEE ON
MEDICAL ECONOMICS.

To the House of Delegates:

During the past year the attention of your Committee has been directed toward several broad economic problems which confront the medical profession. Of these the nursing situation has presented the most important problems with the most difficult and, so far, incomplete solutions. The nursing situation depends primarily upon the universal law of supply and demand. We find, first, that there is a actual shortage of graduate nurses and a more marked

shortage of nurses in training and of applicants for admission to the training schools. Second, we find the requirements demanded by the State Board of Regents to be increasing, particularly in the teaching systems and the qualifications of the nurse-teachers in the hospitals. Third, the nurses' *alumnæ* societies have increased their own regulations regarding hours of work as well as per diem charges for members. The individual nurses themselves show a decided preference for institution work.

The first three factors are increasing the cost of hospital service so materially as to threaten curtailment of the usefulness of our hospitals to the public. The preference of the nurses is making it more and more difficult to obtain adequate nursing service in the homes of the patients. We find this is particularly so in the practices of physicians who have no hospital affiliations.

After consideration of these various factors your Committee has several recommendations which it presents herewith as offering some solution of the problems. In making these recommendations your Committee asks for your constructive criticism. We feel that the first effort should be directed toward a proper presentation of this whole subject to the Board of Regents of the State of New York with a request that it consider some of its rulings. We advise, first, that the preliminary requirement of one year in high school which is now obligatory for entrance to training schools be suspended. In making this suggestion we realize the necessity for a preliminary education and the wisdom of broad educated nurses, but we also recognize the facts that only a small percentage of the girls who pass through grammar schools or through the district schools ever enter high school, and that the meager addition gained by only one year in high school is insufficient to separate widely the recipient of added training from her less instructive sister. We also recognize the fact that many times, this year in high school is sufficient to divert a potentially good nurse into other fields of activity.

Second, we advise that the age of admission to training schools, which is ordinarily fixed at 20 years, be reduced. We make this suggestion because the average girl leaves school at 16 years and the lapse of time between that age and 20 years is so long that with very few exceptions, these girls have entered other fields of activity and are so well established that changes are unlikely. The girl of 17, if in good health, is as capable of taking up training as the girl of 20.

Third, we would present to the Board of Regents the advisability of suspending its regulations relative, first, to the hours of training for pupil nurses, the hours required for school work, time off duty, and, for the smaller cities, attend-

ance upon metropolitan hospitals for training in special subjects. Second, that they should also suspend their regulations requiring specified numbers of nurse-teachers and supervisors. In other words that they should endeavor to simplify a situation which these added regulations are complicating and thus increasing the difficulties which the hospitals are now having to fill and maintain their training schools.

Fourth, we recommend to the hospital authorities a general reduction in the course of training to two years. This meets the requirements of the State Board of Regents, and has already been done in some hospitals.

Experience demonstrates that the shorter course favorably influences the number of applicants for admission, and, as you will appreciate from what we have already reported, we are satisfied that our greatest difficulty will be met by increasing the number of pupil nurses.

It has been suggested in several quarters that a group known as "trained attendants" might be developed by offering short courses, say, of six months each. While your committee feels that such a group might supply low-priced efficient nursing, the difficulties attending establishing such courses seems to preclude them. There is no doubt but what short courses of this character would be popular, but as it would be necessary to give two courses at the same time and in the same hospital, it is very probable that the short ones would interfere with and reduce the number of admissions to the regular two-year courses. We feel that this would be so because the difference in compensation would not be large enough, until the supply became excessive, to induce the average young woman to take the longer course.

Your committee does not consider it advisable that pupil nurses should be given extensive instruction in special work. We have recommended above that this plan be suspended, but we feel that it should be completely eliminated in any final or permanent adjustment of nursing training. Special training should be given graduate nurses at their own solicitation; and then should be sufficiently comprehensive to give adequate qualification. We make this recommendation because the value of special training depends upon the interest and natural adaptability of the individuals receiving it, and the largest part of its value would be lost in any attempt to instruct every pupil nurse in all of the specialties.

While we do not offer the following as a recommendation we suggest that some relief of the present situation may be given by surgeons. The average length of time spent in a hospital by an acute surgical case is two weeks. It is customary to retain special nurses on such cases during the whole period. The actual necessities in the average case call for special nursing only for the first

three days after operation. This means that for eleven days out of fourteen of special nursing may be regarded as an economic loss to the public, or, if you prefer, as a luxury. Of course, the public likes this luxury, is willing to pay for it and perhaps will insist upon having it, but our suggestion is that an effort be made by the surgeons to release their nurses for other cases as soon as possible.

Outside the hospitals many nurses are engaged for trivial ills; things for which a few years ago we would not have considered skilled care as necessary. Again we probably all have nurses who spend considerable time in what are directly or indirectly, merely social aids to families which can afford them.

In the aggregate these apparently small factors are important in increasing the shortage of nurses.

After having studied the conditions underlying the effort to legalize chiropractic, we have reached the conclusion that much of the difficulty lies in the medical profession. We lack properly directed publicity. There is nothing new in this statement; you have had it presented to you before. But the astonishing thing is that while you have heard it and while you believe it you continue to do nothing about it. Yet you will probably agree that the more a layman knows about medicine the less likely he is to permit his vertebrae to be "adjusted" by a man who rejects 95 per cent of acquired medical knowledge.

Your committee recommends that a state-wide publicity campaign be undertaken by this society. Such a campaign should be conducted like the one already under way in one of our constituent county societies. It should be done under the auspices of the State Society by each County Society and by means of syndicated articles of real merit produced by a capable writer, and appearing in every desirable newspaper in the state. Your committee appreciates that much harm may be done and much injustice worked by such a plan as this unless it is made to absolutely preclude publicity for any one physician or group of physicians, or any one hospital or group of hospitals. There is no such risk, however, if the plan is properly carried out. Public opinion can be formed and public action can be led by such a plan.

Your committee has viewed with some alarm the tendency to encroachment on community health problems by the Federal Government. This has been centered during the past year in the propaganda developed in favor of the Shepard-Towner bill. This measure, sponsored by many welfare organizations and women's clubs was finally forced through Congress, and has since been brought up before various state legislatures for ratification. It had the endorsement

of the Public Health Council of the New York State Department of Health.

The question of Federal support and control, either direct or indirect, of community health problems is a serious one for the practice of medicine. There may be no question of the importance to the nation of the maintenance of proper health conditions for mother and babies, but we do not believe that the situation can be improved through the medium of a minor governmental bureau under non-technical direction. A great many of the facts which have been brought forward in support of propaganda for improved maternity and infant care are based on misleading statistics and false sentiment.

The legislature of this state has failed to pass a bill accepting the provisions of the Federal act but has accepted the Donohue bill, which provides for an extension of the same functions under the direct control of the New York State Department of Health, without any financial contributions from the Federal Government.

The entire question is too extensive to be fully discussed in this report, but it is a matter of regret that the medical profession was not consulted in the preparation of the bill, nor was sufficient constructive criticism either offered or accepted.

HENRY LYLE WINTER, *Chairman*,
ARTHUR F. CHACE,
GEORGE W. KOSMAK,
EDWIN MACD. STANTON,
HENRY G. WEBSTER.

April 1, 1922.

REPORT OF THE COMMITTEE ON NARCOTIC DRUGS.

To the House of Delegates:

In submitting our report on Drug Addiction Control, we have studied the various reports and investigations which have been made. Their wide difference emphasizes the difficulty in coming to any practical conclusions.

This has shown itself in the alcohol question, where similar difficulties have manifested themselves despite laws rigid in character, which have been passed, but have failed to accomplish their object.

We must endeavor to approach drug addiction with the hope of ameliorating conditions rather than expecting to end them. The education of the public to an understanding of its influence in destroying character and citizenship, and especially its influence on the more or less mentally weak or defective, should be emphasized.

We should, however, not exaggerate the present conditions. Sentimentalism must be avoided. Drug addiction has always been with

us. The world's present unsettled social condition has increased the evil. The vast increase of crime the country over is otherwise difficult to understand. Unemployment, restlessness after a long interruption from the usual routine of work and home life; the desire for pleasure; a reaction after abnormal excitement produced by the World War are all factors. The same conditions apply to drug addiction.

The influence of the drug addict on the community, as a whole, is small. The private addict conceals his infirmity; does not try to spread the habit, except perhaps, in a very limited circle. The social addict is in a class by himself, is avoided by the public, and finds friends only in his own class.

There should be, therefore, a classification of the habitual users of narcotic drugs:

(1) Those who require narcotic drugs for the treatment of disease.

(2) Addicts who are weak, unstable, or defective and use narcotic drugs as the result of an acquired habit.

Under this head will fall a large proportion of the criminal class.

Your Committee does not consider drug addiction as a disease entity, but rather as a habit similar to the excessive use of any other stimulant or sedative, as coffee, tobacco, etc. The question is the character of the stimulant or sedative used by the habitu . Functional disturbances of the internal organs follow acute excesses or prolonged use of these drugs. These conditions can be cured, but the fundamental psychopathic state is not cured by cutting off the drug, hence a relapse to the former habit when opportunity offers.

Your Committee has not taken up the question of any special method of treatment as that depends on the individual cases and also on the skill and experience of the physician in attendance. A thorough examination of every case should be made which should include the mental condition as shown by his heredity, previous history, etc.

Your Committee approves the Harrison Law and agrees with the recommendations of the American Medical Association Narcotic Committee of 1921 that a larger amount of the monies derived from its administration be employed in carrying it out.

The report of the special Committee on Narcotic Drugs issued by the Council on Health and Public Instruction of the American Medical Association seems to cover the general aspect of drug addiction.

It is not the object of this Committee to relate again what has already been fully reported, nor have we, with the limited time that has been at our disposal, and the absence of

necessary funds for investigation, taken up the question of any governmental policy.

Your Committee considers that defectives and criminals addicted to drugs should be under proper state or county custodial care, as long as the authorities may deem advisable. Private sanatoria are also necessary, subject to the same rules and regulations as are at present observed. We agree with what seems to be the opinion of a majority of physicians that so-called ambulatory treatment has proved ineffectual in the cure of addicts.

The question of the importation, manufacture and exportation of narcotic drugs the Committee has not considered within its province. The Federal Government should be responsible for this division of the subject.

The Committee further recommends the restriction of the manufacture of heroin as unnecessary in the practice of medicine.

Respectfully submitted:

EDWARD D. FISHER, *Chairman.*
EDWARD B. ANGELL
EDWARD A. SHARP
WALTER TIMME

April 1, 1922.

REPORT OF THE COUNSEL FOR PERIOD FROM APRIL 1, 1921, TO MARCH 15, 1922.

*To the House of Delegates of the Medical
Society of the State of New York:*

The work of counsel during this period has comprised not only the protection of the members in malpractice actions in accordance with the long established policy of the Society, but the initiating of the additional feature of indemnity protection against such suits.

When the House of Delegates at its last meeting accepted the recommendations of Counsel for the additional protection to the members under an indemnity plan, the putting into operation of the plan devolved largely upon counsel.

A misconception of what has happened in the past in malpractice cases or a misunderstanding of the financial liability of a physician arising from his professional relation with his patient has given many doctors a false sense of security against the law hazard of medical practice.

Some of the responsible insurance companies that had been engaged in writing this type of protection for physicians announced an increase in their rates of about 300 per cent. These companies claimed the hazard of this line justified the increase in rates. The members of the Society through the adoption of the group plan were spared the expense of this exceptional raise in rates.

After counsel had written to each member advising him fully of the group indemnity plan and

enclosing the necessary application blanks, a system of personal solicitation was adopted. For this purpose the State was divided into ten districts and the authorized representative of the Aetna Life Insurance Company in each district was designated as the official representative of the Society to bring this group insurance plan to the attention of members. (See Table "A"). Inquiries for particulars concerning this group insurance can be made of those in charge of the matter in the several districts.

The rates established for this group insurance are shown for various combinations of coverage for any one claim and for a number of claims during any one policy year in Table "B." It is interesting to note that under the plan which the Society has furnished to its members there can be obtained protection of \$50,000 on any one claim and a total of \$100,000 on claims in any policy year at a premium less than one of the companies that raised its rates would charge for similar protection of \$5,000 on one claim and \$15,000 for a number of claims during the policy year, and the minimum charge of \$18 a year for protection between limits of \$5,000 on one claim and \$15,000 on claims of any one policy year is a little more than one-third of the increased rate contemplated and subsequently enforced by one of the large companies operating in this field.

As a result of the letters sent out by counsel and the subsequent activities of the various representatives named to solicit the members on this matter, policies under the group plan have been written as shown in Table "C" annexed hereto. It appears therein that of 9,467 members of the State Society 2,899 have availed themselves of the benefits of this plan and taken policies of indemnity. Every County Society appears to be represented and to have participated in the acceptance of these benefits.

TABLE "A."

GENERAL AGENT OR BRANCH OFFICE:	COUNTIES:	
<i>Albany Branch Office, Albany, N. Y.</i>	Clinton Essex Washington Saratoga Fulton Warren Montgomery Otsego Columbia	Delaware Sullivan Orange Schenectady Rensselaer Albany Schoharie Greene Dutchess Ulster
<i>Newman L. Hawks, G. A. Batavia, N. Y.</i>	Orleans Genesee	Wyoming Livingston
<i>A. H. Knoll, G. A. Buffalo, N. Y.</i>	Erie	
<i>Niagara Falls Fire Office, G. A. Niagara Falls, N. Y.</i>	Niagara	
<i>E. J. Ashwell & Co., G. A. Jamestown, N. Y.</i>	Chautauqua	
<i>R. T. Mallery, G. A. Olean, N. Y.</i>	Allegany Cattaraugus	
<i>Lucas & Dake Co., Inc., G. A. Rochester, N. Y.</i>	Monroe	
<i>Raymond E. Page, G. A. Hornell, N. Y.</i>	Schuyler Steuben Yates	
<i>Wadsworth & Olmstead, Managers Syracuse, N. Y.</i>	Broome Cayuga Tompkins Cortland Chemung Jefferson Onondaga Madison Oswego Franklin	Oneida Lewis Herkimer Hamilton Chenango St. Lawrence Wayne Ontario Seneca Tioga
<i>Medbury-Agler Company, 80 Maiden Lane, New York City.</i>	Rockland Putnam Westchester Kings Queens	Nassau Suffolk Manhattan Bronx Richmond

TABLE "B."

TABLE OF RATES CHARGED FOR GROUP PLAN INSURANCE OF MEDICAL SOCIETY OF THE STATE OF NEW YORK WITH AETNA LIFE INSURANCE COMPANY.

LINES B BEING LIMITS OF LIABILITY FOR ALL CLAIM DURING ANY ONE POLICY YEAR	COLUMNS A BEING LIMITS OF LIABILITY FOR ANY ONE CLAIM							
	\$5,000	\$10,000	\$15,000	\$20,000	\$25,000	\$30,000	\$40,000	\$50,000
\$15,000	\$18.00	\$22.32	\$25.92					
20,000	18.90	23.22	26.82	\$29.16				
25,000	19.62	24.00	27.54	29.88	\$32.04			
30,000	20.34	24.66	28.26	30.60	32.76	\$34.38		
35,000	21.06	25.38	28.98	31.32	33.48	35.10		
40,000	21.60	25.92	29.52	31.86	34.02	35.64	\$37.62	
45,000	22.14	26.46	30.06	32.40	34.56	36.18	38.16	
50,000	22.50	26.82	30.42	32.76	34.92	36.54	38.52	\$39.06
60,000	23.22	27.54	31.14	33.48	35.64	37.26	39.24	39.78
70,000	23.94	28.26	31.86	34.20	36.36	37.98	39.96	40.50
80,000	24.48	28.80	32.40	34.74	36.90	38.52	40.50	41.04
90,000	25.02	29.34	32.94	35.28	37.44	39.06	41.04	41.58
100,000	25.56	29.88	33.48	35.82	37.98	39.60	41.58	42.12

TABLE C.
ANALYSIS OF INSURANCE ISSUED UNDER THE SOCIETY'S PHYSICIANS AND SURGEONS LIABILITY GROUP PLAN—SHOWING NUMBER OF MEMBERS IN COUNTY SOCIETIES,
NUMBER AND PERCENTAGE INSURED AND LIMITS OF LIABILITY FOR ONE CASE AND FOR ONE POLICY YEAR, IN THOUSANDS OF DOLLARS.

Name of Counties	No. of Members in County Society	No. of Members Insured	Percent- age In- sured	10/15	10/20	10/25	10/30	10/35	15/15	15/25	15/30	15/45	15/50	20/30	20/40	20/50	25/25	25/45	25/50	25/70	25/75	25/100	30/50	30/60	40/80	50/50	50/100	50/150	75/100
Albany	195	107	55	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Allegany	38	10	26	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Bronx	494	94	19	80	2	1	6	..	..	..	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Broome	91	45	50	40	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cattaraugus	49	26	53	12	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cayuga	61	35	57	16	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chautauque	106	28	26	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Clemont	56	35	59	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Clenango	40	27	42	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Clinton	40	22	55	21	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Columbia	42	15	35	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Delaware	33	5	15	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Delaware	19	1	5	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dutchess-Putnam	113	31	27	14	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Erie	759	461	61	253	..	147	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Essex	24	13	54	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Franklin	50	16	32	15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Fulton	41	25	61	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Genesee	27	8	29	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Greene	24	12	50	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Herkimer	56	27	48	22	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Jefferson	75	32	43	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kings	1244	148	11	111	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Lewis	17	5	29	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Livingston	39	9	23	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Madison	37	11	30	11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Monroe	372	80	21	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Montgomery	46	27	59	19	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nassau	79	19	24	17	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
New York	2883	757	28	565	1	8	9	73	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
New York	79	20	36	27	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Oneida	178	55	30	40	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Onondaga	290	126	43	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ontario	76	38	50	55	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Orange	107	52	48	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Orleans	22	2	9	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Oswego	56	23	41	21	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Otsego	43	2	4	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Queens	169	45	26	37	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rensselaer	102	30	29	24	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Richmond	69	10	14	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rockland	38	8	21	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
St. Lawrence	70	16	23	15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Saratoga	52	25	48	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Schenectady	114	90	78	84	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Schoharie	21	3	14	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Schuyler	13	2	15	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Seneca	31	2	6	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Steuben	75	29	39	26	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Suffolk	66	6	9	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sullivan	33	7	31	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tioga	24	8	33	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tompkins	59	13	22	11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ulster	64	26	41	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Warren	35	28	80	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Washington	40	20	50	20	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wayne	37	11	30	11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Westchester	299	58	19	44	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Wyoming	35	4	11	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Yates	20	12	60	11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
TOTAL	9467	2899	31	1676	8	10	493	115	4	2	2	11	13	2	6	4	1	2	1	93	1	2	1	6	1	3	50	7	

TABLE "D."
ANALYSIS OF MALPRACTICE CASES FOR PERIOD
APRIL 1, 1921 TO MARCH 15, 1922.

NATURE OF CASE	Pending on April 1, 1921		Instituted Since April 1, 1921		Disposed of Since April 1, 1921	
	Number of Cases	Percentage of Total	Number of Cases	Percentage of Total	Number of Cases	Percentage of Total
Fractures — arms, legs, hands	12	17½	4	10	4	11
Obstetrics and Gynecology	9	13	8	20	9	24½
Amputations — toe, ear	2	3	0	0	0	0
Burns—X-ray, galvanic	4	6	3	7½	1	2½
Operations—abdominal, tonsil, ear, eye	4	6	7	17½	2	5
Needles breaking, injections, punctures	4	6	2	5	1	2½
Infections — scalp, finger, hand, leg.	4	6	3	7½	1	2½
Wrong diagnosis....	2	3	2	5	1	2½
Lunacy Commitments	4	6	2	5	0	0
Loss of services of wife or child....	9	13	6	15	8	22
Death by anaesthetic, morphine, diphtheria, etc. ..	11	16½	2	5	5	14
Unclassified	4	6	1	2½	5	14
Instituted by Administrators	11	16½	2	5	5	14
Instituted by men..	24	35	20	50	17	46
Instituted by women	26	37	14	35	15	40
Instituted on behalf of children	8	11½	4	10	0	0
Against specialists.	20	25½	18	42	12	27
Against general practitioners	57	74¾	25	58	32	73
"HOW DISPOSED OF"						
Settled					6	15
Dismissed or discontinued or tried—(Verdict for defendant)					29	80
Affirmed on appeal for plaintiff.						
Tried by former counsel					1	2½
Pending on appeal.					1	2½
Total	69		40		37	
Pending March 15, 1922	72					

The group plan policy is broader than the individual policy which the Aetna Company formerly wrote and protects the doctor against claims based on his practice or that of any assistant, whether such assistant is licensed, graduated, or not. This is particularly important, where a physician makes use of an X-ray technician or a practical nurse in obstetrical cases, and the most important feature under the group plan is that the counsel of the Society defends any action that may be brought. This insures the physician the services of one who specializes, particularly,

in this branch of trial practice. A very valuable feature of the group plan is that the insurance company places its attorneys and investigators throughout the State at the disposal of Counsel, and by this means investigations can be conducted under counsel's direction very speedily and thoroughly, which without such organization would involve prohibitive cost to the Society. Added safeguards are provided against settling claims at the expense of a doctor's professional standing. In this matter the principles underlying the defense of physicians by the Society control the operation of this group plan. The plan has been in operation too short a time to report upon claims or suits arising against assured members. The few cases that have arisen are included in the report of cases that follows.

Analysis of malpractice cases receiving counsel's attention between April 1, 1921, and March 15, 1922, is set forth in detail in Table "D" annexed hereto. It appears that on April 1, 1921, there were pending sixty-nine such cases and since that time there have been forty new cases instituted and thirty-seven disposed of, so that there are pending on March 15, 1922, seventy-two cases, an increase of three cases over the number pending a year ago. The table likewise shows that there is a larger percentage of such cases brought against general practitioners than against specialists. Thus of the cases pending on April 1, 1921, over 74 per cent were against general practitioners and of the new cases instituted since that time 58 per cent were against general practitioners.

These figures indicate clearly the value of the group insurance plan to general practitioners, although it appears that among that class there are many who erroneously believe that such protection is only needed by the specialist.

Here follows an analysis of the facts of the cases that have been instituted since April 1 1921, as set forth in Table "D."

FRACTURES :

(1) In this case, the plaintiff, a woman of about sixty years of age, while entering a polling place on Election Day, fell and sustained a fracture of the wrist. It is claimed that the defendant was so negligent in the reduction of the fracture, that it was necessary for the plaintiff subsequently to have the bones refractured and re-set, and that further because of defendant's negligence, an exudate had formed at the joints of the plaintiff's wrist and fingers, which likewise needed operative treatment.

(2) In this action a man had sustained a fracture of the arm at a point near the elbow. At the time he was first seen by the defendant, the swelling of the arm was too great to permit of manipulation and reduction of the fracture. A few days later X-ray photographs were taken and the fracture was reduced. It is claimed on behalf of the plaintiff, however, that the fractured bones were not completely reduced and the ends were not brought into apposition, and it was necessary for the plaintiff to undergo a further operation for the reduction of the fracture.

(3) In this case an elderly woman while crossing a public highway was struck by an automobile and sustained a dislocation of the right shoulder. When one of the defendants was called upon by the plaintiff he made an examination and diagnosis of her true condition, and suggested that the plaintiff submit to an X-ray to determine the exact extent of her injury. This, however, she refused to do and the only treatment the defendant was permitted to give the woman was the application of boric acid pads for the reduction of the swelling. In a few days he was called out of town and the co-defendant examined the woman's arm and shoulder. He, likewise, suggested the taking of an X-ray, which was again refused by the patient, nor would the patient permit any manipulation or examination of her arm and shoulder. So that the only treatment that either of the defendants was able to give to the patient were the applications for the reduction of the swelling. Some months subsequent to the happening of the accident the plaintiff in the hands of another physician eventually submitted to the taking of an X-ray and the reduction of the dislocated shoulder and she then instituted a suit against these defendants, charging them with negligence in not having done what she herself refused to permit them to do.

(4) In this action while intoxicated the plaintiff sustained a laceration of the forearm in which the nerves and arteries were severed. First-aid treatment was rendered by the defendant who had the patient under his care for several days and then referred him to a specialist for further treatment. The plaintiff claims that this defendant was negligent in his treatment and that by reason thereof he has sustained a partial loss of function in his wrist and hand.

OBSTETRICS AND GYNECOLOGY:

(5) In this action the plaintiff was under the care of the defendant, a general practitioner, for many months, she having come to him with a history of amenorrhœa. An examination disclosed an inflammation at the mouth of the uterus, which was treated by iodine applications for several weeks. After a lapse of several months during which the patient was not seen by the defendant, she returned to him complaining of her old symptoms. He continued the treatment as before and also advised that she consult a specialist in gynecology, as he believed that she probably had a cystic fibroid at the mouth of the uterus. Claim is made by the plaintiff that towards the latter part of the time she was under defendant's treatment she was pregnant and that in the application by the defendant of the iodine at the mouth of the uterus he had punctured the foetus in various places causing the death of the foetus and a subsequent miscarriage.

(6) In this action the complaint specifying the alleged negligence of the defendant has not been served.

(7) In this action the defendant attended the plaintiff at childbirth, and it is claimed that the defendant was negligent in that he did not remove the afterbirth from the plaintiff, that he negligently permitted the stitches to remain in the plaintiff, by reason of which the plaintiff was injured and suffered great damage. The plaintiff in this case had been in labor for two days and the defendant had been, more or less, in constant attendance and remained with her one entire night, delivery having been made with forceps of a nine-pound baby. A slight laceration of the peritoneum resulted, which was stitched after the removal of the placenta. The patient continued to progress and the stitches were removed on the tenth day. He last saw the patient on or about the fourteenth day after the birth, when the patient was sitting up and her condition was good. About eighteen days after the birth of the child, he visited the patient and found her with a high temperature, at which time he prescribed for her. On the same day he was advised by the husband of the patient that the patient was being removed to the hospital. The

condition in which the defendant found the plaintiff at this time indicated to him that she was probably suffering from acute cystitis and that the plaintiff probably became infected from the woman who was taking care of her who was uncleanly.

(8) In this action the plaintiff claimed that two years before the institution of the action the defendant had inserted in her uterus a stem pessary for the purpose of prevention of conception, and that he had failed from time to time to remove said pessary so as to prevent infection, and that because of this negligence upon the part of the defendant the plaintiff became infected which resulted in there being performed upon the plaintiff a left oophorectomy. This plaintiff sought to lay at the door of the defendant her condition and sought to recover from him the moneys which she had expended in the operation and for the pain and suffering which she endured because of such operation. The defendant had not prescribed nor inserted the pessary for the plaintiff, but had a year prior to the institution of the action treated the plaintiff for an inflammation at the mouth of the uterus and the plaintiff at that time advised him that she had some time prior thereto had an abortion performed upon her.

(9) In this action the plaintiff came to the defendant complaining of pain in the abdominal region and an examination disclosed an inflammation at the mouth of the uterus. The defendant suggested the treatment of iodine applications, and that if no relief was had from such treatment in a short time that the patient should then consult a gynecologist. Several applications were made by the defendant of iodine to the uterus. The defendant did not see the patient again for several months, when she returned complaining of pain in one of her legs. Her complaint at this time was completely dissociated with her former condition and the defendant gave the necessary prescription for her ailment. The patient was never again seen by the defendant, but many months after it was claimed that in the treatment of the plaintiff that a ring which the defendant had inserted in the plaintiff had worked its way through the plaintiff's body until it had reached a point near her hip, and that she was subjected to an operation for the removal of such ring, and she seeks in this action to recover the damages claimed to have been sustained by reason of the pain and suffering and the expenses of the operation.

(10) In this action the plaintiff, a woman of about 39 years of age, a primipara, was delivered of a dead foetus by the defendant, and the plaintiff claimed that the defendant was negligent in the care and treatment of her during childbirth, caused her unnecessary pain and lacerations and that she suffered physical injuries thereby and also mental anguish because of the death of her child.

(11) In this action the husband claimed that the defendant was negligent in the treatment of his wife and such negligence resulted in the death of his wife. The patient had been in the defendant's care for her confinement and her urine examinations from time to time disclosed traces of albumen. He had advised her with respect to excesses, overeating, exercising, work, excitement, etc. He had also advised her husband of her condition and that she should have constant hospital attention. The suggestions to the husband were met with silence on his part. At about the time the patient was due to deliver she had severe attacks of vomiting. The defendant upon his arrival found her wildly gesticulating, her eyes staring and complaining of headaches and pains in her stomach. He administered to her and had her removed to a hospital. On the way to the hospital she had five or six convulsions, during which the defendant treated her. On arrival at the hospital several consultants were called in to attend the patient. The patient was put to bed between hot blankets. One of the consultants had previously had the patient under treatment for syphilis. Examination dis-

closed that there was no dilation of the uterus, nor was it soft. At the hospital the patient passed from the hands of the defendant into the care of the physicians and surgeons who were retained at that time and the defendant's services were dispensed with. During the night the patient died, and the husband sought to charge the defendant with the death of his wife. During the time the patient was in the hospital her husband remained outside asleep in an automobile and later went to a hotel for the night to sleep.

(12) In this action the plaintiff, a pregnant woman, had been removed to the hospital for delivery. Her labor was weak and infrequent. She had been in labor for almost 48 hours. The defendant was consulted with respect to her condition and upon examination advised that a delivery could be made on plaintiff. The husband of the patient engaged the defendant who then undertook to deliver the patient and she was by forceps delivered of about an eight-pound live child. The defendant was called in as a specialist solely for the purpose of delivery and after the performance of his duties the patient was turned over to the care of her physician. In the delivery there was a slight tear of the peritoneum which was stitched by the defendant. On subsequent days when the defendant was at the hospital visiting other patients he inquired the condition of the plaintiff, and on or about the eighth day when being told that the plaintiff's physician had not visited her nor removed the stitches he removed the same. The plaintiff was suffering from the time she was a child of a congenital deformity to one of her hips and she now claims that the defendant was careless in his treatment and delivery of her and such negligence resulted in the deformity of her hip and that she sustained other pain and injury for which she now seeks to recover damages from the defendant.

X-RAY AND GALVANIC BURNS.

(13) In this action brought by a guardian, the plaintiff, a boy of about nine years of age, who was an inmate of an orphan asylum, had been suffering from favus. There were also a number of other boys at the institution who were likewise infected. For several months they had been under the care of a physician with comparatively little improvement. They were referred to the defendant, a Roentgenologist, for X-ray treatment, which was administered by him. It is claimed that the defendant was negligent in his treatment, and that such negligence resulted in the loss of hair of the plaintiff and that he is now entirely bald, and the plaintiff asks to be compensated for his injuries.

(14) In this action the plaintiff, a man, had a cyst on his arm at a point above or near the elbow, and the defendant gave two applications of X-ray for the removal of such cyst. It is claimed that the defendant was negligent and careless in the operation of his machine causing a dermatitis to the plaintiff's arm and inflammation to spread throughout the arm and necessitating a possible amputation to save his life.

(15) In this case the patient, a man, came to the defendant suffering from neuritis of the left leg. When the patient first called on the defendant the defendant prescribed medication for him, advising him that if he found no relief in about one week to return and that he would give him electrical treatment. The plaintiff gave a history of having suffered intense pain from the neuritis for several months, by reason of which he was unable to work, and it was discerned by the defendant that the physical condition of the plaintiff had affected him mentally. Upon his return to the defendant about a week after the first treatment, the defendant advised that he would administer galvanic electrical treatment to the plaintiff and that such treatment would cause a slight burn. In the application of the galvanism a slight burn was caused to the calf of the right leg. The burn was a mere reddening of the skin, the size of about a five-cent piece, no blister being caused. It is

claimed by the plaintiff that he was severely burned, that his leg became infected, necessitating treatment and operation from various physicians and that he was rendered unable to work.

OPERATIONS: WITHOUT CONSENT, ABDOMINAL, MASTOID, TONSILLAR, NOSE, FOOT.

(16) In this action an operation was performed upon the plaintiff for appendicitis. The operation was successfully done and the plaintiff had an uneventful recovery. Many months later the plaintiff claimed that in the performance of the operation, because of the defendant's negligence a sponge was left in the wound, which caused an infection and necessitated subsequent operation.

(17) The facts in this case are substantially the same as in the last above.

(18) The plaintiff went to the hospital for the purpose of having a small cyst removed from her right breast. At the time of the performance of the operation the cyst could not be located and an operation was performed upon the plaintiff at a point about four inches or more below the breast, from which there was removed a small tumor. The plaintiff claims that the operation that was performed was done without consent and she now seeks to recover damages.

(19) In this action the plaintiff, a woman, was suffering from a goitre and went to the defendant for the removal of the same. He performed an operation upon her and it is now claimed that the operation was negligently and carelessly performed, that the scar upon the plaintiff's neck was larger than was necessary had the defendant used reasonable care and skill, that the goitre had not been removed and that the plaintiff was subjected to a second operation for the removal of the goitre.

(20) In this action it is claimed that the defendant abandoned the plaintiff's son after he had performed a mastoid operation upon the boy. That after the performance of said operation he continued his after-care several days and that he then went out of town without notifying the parent of the boy; that during his absence it was necessary for the plaintiff to engage another physician to dress the boy's wound, and the plaintiff here seeks to recover the amount which he claims was paid by him to the physician called in during his absence. The defendant had performed a mastoid operation and continued his after-treatment for about two weeks, visiting the patient when it was necessary, and upon a stated day advised the plaintiff, the father of the boy, that he would be absent from the city for about three days, that the boy in the meantime ordinarily would not need any new dressings or attention, but that if his condition became bad and warranted it, a certain physician should be called in. While the defendant was absent from the city the father by letter directed to the defendant, discharged him from further treatment of the boy.

(21) In this action it is claimed that the plaintiff who was suffering from difficulty in breathing, consulted the defendant, who advised a certain operation which the plaintiff submitted to, but that said operation did not improve the plaintiff's breathing and in fact the same had grown worse, and that a second operation was advised by the defendant, and at this time the plaintiff's adenoids were removed, that the plaintiff's condition did not improve and that the defendant further advised the plaintiff that he needed an operation for the removal of the turbinated bones of the nose, which the plaintiff submitted to. He further claimed that the defendant was negligent and careless in the performance of the various operations, and that in order for the plaintiff to recover from his ailments and the injuries caused him by the defendant it was necessary for him to undergo a further operation for the removal of a growth from his nose which had interfered with his breathing and that the removal of such growth was accompanied

with relief to the plaintiff. The plaintiff now seeks to recover the damages alleged to have been sustained because of the defendant's negligence.

(22) This is an action brought by the father of a boy of about fourteen years of age. He was brought to the defendant for examination, which examination disclosed that it was necessary to have the boy's tonsils removed, and the father consented to such and paid the defendant the fee for the operation which was performed. Examination also disclosed that the boy had a small spur on the cartilaginous septum, which fact was communicated by the defendant to the parents of the boy and they were also advised that it would be necessary some day to perform a slight operation for the removal of the spur. At the time these facts were communicated to the father he remained silent, raising no objection of any kind. On a Friday afternoon the boy was brought by his father to the defendant's office and under a local anaesthetic the spur on the cartilaginous septum was removed by the defendant. The father was present during the entire operation and made no comment of any kind. At the time when the father and the patient were about to leave, and when requested by the doctor whether he desired to pay anything for this operation, the father replied that he thought the fee that he had already paid the doctor covered everything, to which the doctor acquiesced. The boy returned on the following day, Saturday, and the defendant removed the plug retaining the flap in position from the boy's nose, telling him to come back on the following Monday. The boy returned on that day and his condition was good, and it was the last time that the boy was seen by the doctor. Some months later it was claimed by the father of the boy that the defendant had operated upon his son erroneously and that he performed the operation for the removal of the spur without the consent of the father and they now seek to recover damages claiming that the operation was negligently and carelessly done without consent.

BREAKING NEEDLES.

(23) The plaintiff, a woman, had been a patient at the hospital of the defendant, a surgeon, who had performed an abdominal operation upon her. After the completion of the operation and she had been removed to her room, instructions were given by the surgeon to the superintendent of the hospital that a hypodermoclysis be administered to the patient. Hypodermoclysis was given to the patient by an interne at the hospital, and while so administering it the shaft of the needle became loosened from the hilt and imbedded in the body of the patient at a point underneath the breast. The defendant was notified and attempts were made to remove the needle without success. Her recovery from the abdominal operation was uneventful and she left the hospital within a reasonable time. She continued treatment at the office of the defendant and some months later the needle made its appearance at the skin of the patient at a point above the breast. At that time the defendant made a small incision, with the means of forceps extracted the needle. The plaintiff now seeks to recover damages for the needle having broken and being left in her body, claiming that it was due to the negligence and carelessness of the defendant.

(24) The patient, a man, was a free patient at one of the City clinics. He was suffering from lichen planus. In the treatment of the patient it was necessary to give him hypodermic injections. There are two defendants in this action. One is the chief of the skin department of the clinic, where the plaintiff was receiving treatment, and who had not seen nor treated the plaintiff upon the day when it is alleged that he sustained injury. The other defendant while administering a hypodermic

injection to the plaintiff, the shaft of the needle became loosened from the hilt and in all probability remained in the body of the plaintiff. The plaintiff had left the clinic before it was discovered that the needle had broken. Endeavors were made to locate the patient without success. All the patients treated on that particular day were advised to return three days later. The plaintiff, however, did not return at that time. A few days thereafter by telephone one of the defendants was advised that the person speaking was the brother of a man who had been treated at the clinic and he was complaining of pain in the buttocks, the place where the injections had been made. The brother of the patient was advised to bring the patient to the clinic and that if the needle was in his body the same would be removed. He assented to have the plaintiff at the clinic at 2.30 upon that day. Arrangements were made by the defendant for the X-ray department and the surgical department of the clinic immediately to take care of the plaintiff and do all that was necessary for the removal of the needle. The plaintiff, however, failed to appear at the clinic on that day and subsequently brought suit against both defendants and now seeks to recover damages, claiming that the defendants were negligent in their treatment of him.

(25) In this case it is claimed by the plaintiff that the defendant in the treatment of syphilis made a hypodermic injection of the plaintiff through his shirt, coat and sweater without removing the same, and that by reason of such carelessness upon the part of the defendant the plaintiff's arm became infected and the inflammation spread throughout various portions of his arm and he seeks to recover damages for the alleged negligence of the defendant.

(26) In this action the doctor instituted an action against a former patient to recover the value of his services. The patient interposed an answer and also a counterclaim claiming that the doctor was negligent in the treatment of the patient and thus seeks to avoid the payment of the doctor's bill and also to recover damages for the injury which he claims to have suffered because of the alleged negligence of the doctor. The former patient while driving a truck had fallen therefrom sustaining a laceration at a point near the thigh. The patient was under the care of the doctor who had cleansed and treated the wound and had the patient under his treatment for several weeks. The wound of the patient did not seem to heal and the leg became inflamed. It was necessary for the patient to be removed to the hospital where he remained for several weeks receiving the treatment of physicians and surgeons other than the doctor.

(27) This is an action brought by the father of a boy about four years of age who was suffering from tuberculosis of the left foot and ankle. He was brought to the defendant for treatment and he made an examination of the boy. In the treatment of the boy the defendant encased the foot and leg in a plaster cast and also otherwise administered to and treated the boy. It is claimed by the plaintiff that this method of treatment was improper and that the defendant should have operated upon the patient removing the pus and defective tissue from the foot and ankle of the patient and that because of the alleged carelessness and neglect of the defendant in putting the leg in a plaster cast, the disease became progressively worse and it subsequently became necessary for the boy to submit to an operation necessitating the removal of some of the bones of the foot and ankle and that the disease had also spread to his neck and hands, both of which had to be operated upon and that the operation left a scar upon the neck and also the removal of part of the bones of the hands, resulting in loss of function and permanent injury of his hands and limbs.

CLAIMS OF WRONG DIAGNOSIS.

(28) In this action, the plaintiff, a man, claims that he had engaged the defendant to cure him of a disease from which he was suffering; that the defendant did not use proper care nor skill in endeavoring to cure the plaintiff, in that in his first examination he advised the plaintiff that his nerves were out of order; that thereafter he took a spinal fluid test and advised the plaintiff to have his mouth X-rayed; that on such X-ray the defendant advised the removal of the plaintiff's back teeth, which advice the plaintiff followed and had such teeth removed, and that the defendant thereafter injected alcohol into the thigh of the plaintiff, all of which caused him great suffering and injury, and that all of the treatment of the defendant was improper and injurious and not called for by the sickness or disease from which the plaintiff was suffering; that by reason of the defendant's negligence the plaintiff has sustained injuries to his mouth and the loss of his teeth and suffered great pain and he now seeks to be compensated for his injuries. It appears that the plaintiff called upon the defendant complaining of pain in the right calf, right thigh and the lumbar region. He was examined by the defendant who diagnosed his illness as myositis of *glutenus maxinus* muscle, and also suspected that the plaintiff's trouble was probably caused by the condition of his teeth and recommended the plaintiff to a dental surgeon, who made an X-ray of the plaintiff's mouth. The dentist advised the plaintiff that the X-ray showed pyorrhea pockets around the upper right bicuspid and second molar and that the bridge attached to these teeth was causing considerable irritation to the surrounding tissues. That the first and second upper bicuspids had imperfect root canal fillings and showed apical infection, and that the bridge attached to these teeth was causing considerable irritation to the tissues underneath it, and that there was probably some disturbance in the left antrum, also an impacted third molar on the lower left side, which was causing a great deal of disturbance on the mandibular nerve. A clinical diagnosis of the dentist was that all the bridges in the plaintiff's mouth were unsanitary, causing a great deal of disturbance to the surrounding tissues and also there were pyorrhea pockets, and he advised the removal of all the bridges in the plaintiff's mouth and treatment for pyorrhea and that the impacted lower left third molar should be removed. The plaintiff submitted to the removal of his teeth and treatment by the dentist. The plaintiff now claims that the removal of such teeth was improper and unwarranted in the treatment of the illness from which he was suffering and seeks to recover damages from the defendant doctor.

(29) This is an action brought by a father to recover damages alleged to have been sustained in the loss of services of his son. It is claimed that the defendant was called in to treat the plaintiff's son, and that the defendant carelessly and negligently diagnosed the illness from which the boy was suffering. It is claimed that the defendant advised that the boy was suffering from a contagious disease and advised his removal to the hospital, where within a few days the boy died and the father now seeks to recover damages for the death.

LUNACY COMMITMENTS.

(30) In this action there are about eight defendants, four of whom are brothers and sisters of the plaintiff, the others being physicians engaged in general practice and specialists in the treatment of mental diseases and the superintendent of one of the State Insane Asylums. The defendant represented by your counsel is a general practitioner and who was called in on one occasion to treat the plaintiff. At that time he advised that the plaintiff was apparently mentally disturbed and suggested that those in charge of the plaintiff call upon a specialist to treat her. The defendant gave no treatment of any kind to the plaintiff and saw the plaintiff only

the one time. It subsequently developed that the plaintiff was suffering from severe mental disturbance, had undergone treatment in private sanitariums and from various specialists in mental diseases and was subsequently committed to one of the State institutions for the insane, and that after being confined there for several years she was released from the institution. She now brings this action claiming that she was sane at all times and that all of the defendants conspired falsely and fraudulently to cause her to be committed to an institution for the treatment of the insane, and she asks that she be compensated in money damages for the alleged false imprisonment and fraudulent commitment.

(31) This is an action brought by a woman against two physicians, a general practitioner and a specialist in mental diseases. The plaintiff had been under the care and treatment of the general practitioner and her mental condition became such that he advised the plaintiff and her husband to call in consultation the other defendant, a specialist in mental diseases. The plaintiff and her husband were people of moderate circumstances and were living at a furnished room house, the husband being away all day engaged in his employment. The defendants advised that because of the mental condition of the plaintiff that it was unsafe to leave her alone all day, as she had suicidal tendencies and that while alone might do injury to herself. The husband was also advised that his wife could be sent to a private sanitarium or could be committed to one of the State institutions. He stated that he did not have the money to take care of his wife at a private sanitarium and agreed to take her to one of the State institutions. One of the defendants loaned the services of his chauffeur and automobile to the husband to convey the plaintiff to the State reception hospital. She was subsequently committed by a Justice of the Court to the State institution, and after being there for some time was released on probation by the authorities at the hospital. Neither of the defendants saw or had anything to do with the plaintiff after she was taken to the reception hospital by her husband. She now claims that the defendants fraudulently and falsely swore to the affidavits of commitment and that she was wrongfully incarcerated in a State institution and seeks to recover damages for such false imprisonment.

LOSS OF SERVICES.

(32) There are eight actions pending on behalf of husbands or fathers of infant children to recover for the loss of services of their wives or children, alleged to have been caused by the negligence of the defendants in the care and treatment of such patients. In practically all of the actions brought by women involving the question of obstetrics or gynecology, such actions are accompanied with an action by the husband to recover for the wife's loss of services. Likewise, in actions in behalf of minor children the same is generally accompanied by an action by the father, or if he be dead, the mother of such child, to recover for the loss of services.

DEATH CASES.

(33) This is an action against three physicians and surgeons to recover for damages for the death of the plaintiff's intestate who was the patient of one of the physicians, operated upon by another, and it is claimed at the hospital of the third. One of the physicians is a general practitioner and the plaintiff's intestate had been his patient for some months. He had treated her for difficulty in breathing and removed an obstruction from her nose. During this time she complained of headaches and advised him that she had never menstruated. She insisted that he examine her to determine the cause of the failure of menstruation. Such examination disclosed a congenital absence of a vagina. She further insisted upon an operation to cure this abnor-

mality. She was advised against the operation but insisted upon the performance of the same. At the time of her examination by the surgeon it was found that the appendix and cecum were adherent and she was also troubled with intestinal disturbances and that it would probably be necessary at some time for her to submit to an operation for this intestinal condition. She insisted upon the operation on the appendix and also that at the same time the operation be performed for the construction of a false vagina. This was subsequently done and in about four days after the performance of the operation the intestate set up a volvulus and a secondary operation was performed for the relief of this condition. About six hours after the performance of this operation the patient died. It is now claimed by the administratrix that the general practitioner falsely and fraudulently represented to the intestate her true condition, that the other defendants falsely and fraudulently concealed from the plaintiff her true condition and that they induced her by such false and fraudulent representation to submit to the operation; that by said operation she sustained injuries and wounds which caused her death. It is also alleged that by virtue of the fraud and false representation and concealment the defendants induced her to give her consent to an operation upon her appendix. That by reason of the fraud and deceit the consent was rendered void and invalid and that she never consented to the operation to cure the abnormality, and that by reason of such operation her death was caused. It is further alleged by the administratrix that the operation performed by the defendant was done in a careless and negligent manner; that the technique used was improper, and that in the performance of such operation the surgeon should have used another method other than the one he did use, and that the entire operation, care and treatment of the intestate was careless and negligent and that because of such carelessness and negligence the patient died.

(34) This is an action brought by an administratrix to recover damages for the death of her intestate. It is alleged that the defendant was employed for the purpose of having made a spinal test in order to determine whether the plaintiff's intestate was suffering from syphilis. That the defendant performed such tests so negligently and carelessly that the plaintiff's intestate became paralyzed and that such paralysis resulted in his death about fifteen days after the performance of the spinal tests. It is claimed that the defendant was negligent and did not await the result of such test before injecting into the spine of the intestate certain harmful fluids; that he made the test at a point too high and too deep on the spine and contrary to the usual practice; that by reason of the defendant's negligence the plaintiff suffered from transverse myelitis, cystitis phlebitis and pulmonary embolus, causing the paralyzed condition.

UNCLASSIFIED.

(35) The plaintiff in this action had gone to the defendant for the purpose of having a complete examination to determine whether or not he was suffering from gonorrhoea and the extent of said disease and it is claimed by the plaintiff that he entered into a contract with the defendant whereby the defendant agreed to make an extended examination of the plaintiff and to treat him until such time as he was cured for the sum of \$50, whereas, what the defendant agreed to do was to make his extended examination of the plaintiff consisting of the urethroscope, 7 glass urinal tests and including other examinations and analysis for the sum of \$50 and after the completion of the diagnosis that he made could then determine the nature and extent of the treatment necessary to be given to the plaintiff, and that the cost of such treatment would be in addition to the amount paid for the examination and diagnosis.

In the preparation of the actions for trial the papers are first carefully examined for legal defects. Bills of particulars are required in amplification of the complaints, the facts with respect to the operation or treatment by the doctor are procured in detail and extensive and exhaustive examination of medical literature and writings applicable to the case is made. In the preparation of the medical side valuable aid and assistance has been had from the members of the profession who have generously given of their knowledge and time in enabling counsel to prepare fully the defense. The preparation has made it possible to meet contingencies arising during the trial or to combat any erroneous theory advanced by the plaintiff or his expert medical witnesses. In many instances this exhaustive preparation of the defense has resulted in preventing actions being pressed for trial. The plaintiff's attorney at such times realizes that his claim is a hopeless one or at least one attended with small possibility of successful recovery.

The assistance of Mr. Robert Oliver, in counsel's office, in the preparation of cases for trial has received recognition by the Society in his appointment as attorney of the Society.

Counsel desires to express grateful appreciation of the generous assistance that has been rendered him during the past year by many members of the Society in the preparation of the cases and to the officers and the committees of the Society that have given counsel their support and co-operation.

Counsel's work in this department of the Society's activities would be valuable only to the particular members against whom such suits are brought unless there can be gleaned therefrom general principles to apply in the future for the protection of both physician and patient generally.

A few examples may indicate how liability arises. Thus, in a case arising some years ago, a surgeon in a dispensary cut through a bandage on a patient's broken arm which previously had been placed there by another physician in the dispensary. The surgeon assumed that the bandage had been put on properly. Nevertheless, despite this assumption and the fact that the patient was a charity patient, the physician was held liable and damages were assessed against him.

In another case, a physician treating a fracture at the elbow, got a bad result as to union and function. The Court said:

"When the case is one as to which a system of treatment has been followed for a long time, there should be no departure from it, unless the surgeon who does it is prepared to take the risk of establishing by his success, the propriety and safety of his experiment."

This is an extremely harsh rule, particularly in the modern practice of medicine when there are constantly new procedures coming into use. Although these new procedures may be beneficial they involve as can be seen from the enunciation of this principle, considerable law hazard to the physician. There is often a misconception by the physician as to how long his liability to a patient continues. On this point in one case where a physician was on vacation for five weeks, where he stated he would be away for only two or three weeks and the patient had a bad result, the Court said:

"When a physician is employed to attend upon a sick person, his employment continues while the sickness lasts and the relation of physician and patient continues unless it is put an end to by the assent of the parties, or is revoked by the express dismissal of the physician."

In that case arising some years ago damages were assessed against the physician.

In this and other states cases have likewise arisen where a surgeon performed an operation more extensive than the one originally contemplated, and such physicians have been held liable for operating without consent. The rule on consent is extremely strict and liability may arise unless the physician is safeguarded by some understanding which leaves to his discretion to some degree the extent of the operation.

An examination of the type of cases that have been handled by counsel as shown in Table "D" indicates the broad field of liability in all departments of medical practice. Consideration of the facts set forth in that table clearly indicates that there is no department of medical practice that can be said to be free from law hazard. The law hazard has likewise been increased by the progress that has been made in recent years by the introduction of new procedures such as the X-ray and radium and serotherapy. What heretofore would satisfy the Court as the proper and approved practice in a case, may now be quite insufficient, unless these new procedures are employed where indicated. These new procedures likewise make simpler the proof of liability against a physician and account in part for the increase in the number and seriousness of cases that have been brought against physicians.

The following suggestions, therefore, are offered for the protection of physicians in their relations to the patients.

Use X-ray in diagnosis of all fractures and dislocations both before and after the fracture or dislocation is reduced. The X-ray plate provides a permanent record of the condition and reduces the element of possible fraud upon the physician.

In orthopedic work often ordinary photographs of conditions that would not be indicated by the X-ray are likewise of value.

Where a physician is dismissed from a case, a letter to the patient, the physician retaining a carbon copy, fixing the time and circumstances, might prevent a future claim by the patient that the physician abandoned the case. This claim by patients has arisen in a number of cases, where the true facts clearly indicated that the physician was dismissed and another physician employed.

In cases of children particularly, although clinical diagnosis may not indicate diphtheria, cultures from the nose and throat should early be taken. Suits have been based upon the claim that such cultures were not taken, where fortunately the physician was able to show from the records of the Department of Health the taking of such cultures.

Where diphtheria is present in one child in a family, similar cultures may well be made of the other children and members of the family. This practice should at least be advised by the physician to the family and while of doubtless benefit to the family as a precautionary measure may eliminate and prevent the probability of claims against a physician.

The early use of antitoxin in all diphtheria cases in doses suggested by the health authorities is recommended.

Where intubation is necessary, insist that the patient be in charge of a nurse competent to act when conditions indicate the necessity of reintubation, so that intubationists may be summoned promptly. In the absence of such expert nurse advise hospital treatment.

Advise either patient or family of the probable outcome of disease or operation where feasible. This may avoid claims against a physician where unsatisfactory results are inevitable in the nature of the case, but through patient's ignorance or otherwise claims against a physician are made.

Time and frequency of visitation to sick patients in serious cases should be determined by the physician and not by the family. A doctor's desire to save a patient expense may be considerate for the patient's purse but may be hazardous to the doctor if subsequent claim of neglect of the case is made.

Keep records of every patient treated so that the transaction may be identified. Records made at the time of treatment may be invaluable to the physician in establishing the falsity of the claim made against him.

All of which is respectfully submitted,

GEORGE W. WHITESIDE,

Counsel.

Dated March 15, 1922.

REPORT OF THE COUNCILOR OF THE FIRST DISTRICT BRANCH.

To the House of Delegates:

The annual meeting of the Branch was held in the auditorium of the Nyack Club, at Nyack, on Wednesday, October 19th, 1921. An unusually large attendance was present. The minutes of the preceding meeting were read and adopted as read. The Scientific Meeting was opened by an address on "The Relationship of the Medical Profession to the General Public," Dr. James F. Rooney, President Medical Society, the State of New York. Other papers presented were "Hay Fever and Pollen Therapy," Dr. Ralph Oakley Clock; "The Diagnosis of Early Syphilis," Dr. Ray H. Rulison; "The Etiology and Laboratory Diagnosis of Typhus Fever," Dr. Charles E. Krumweide; "The Continued Use of Digitalis," Dr. Harold E. B. Pardee; "Fainting—Some Observations, Its Causes and Its Treatment," Dr. John Wyckoff; "Malignancy of Colon with Considerations," Dr. John F. Erdmann; "Radium in Tumors of the Bladder," Dr. Benjamin S. Barring; "Radium Treatment in Carcinoma of the Uterus," Dr. Harold C. Bailey; "Demonstration of Nervous Cases," Drs. Edward Livingston Hunt and Orrin S. Wightman.

Respectfully submitted,

GEORGE A. LEITNER,
President.

April 1, 1922.

REPORT OF THE COUNCILOR OF THE SECOND DISTRICT BRANCH.

To the House of Delegates:

Meetings of the county societies in the Second District Branch have been held regularly, with good attendance and with interesting papers.

The Queens-Nassau Society has separated into the Queens and Nassau Societies, the Queens County Society continuing under the charter of 1806 and the Nassau Society incorporating as a new body. The Queens Society hold ten monthly meetings, leaving out July and August. The Nassau Society holds quarterly meetings.

Members of the different societies are taking more interest in legislation due to the efforts of the Legislative Bureau in Albany. It has been difficult at first to arouse interest, but the chairmen of the legislative committees are functioning better.

The Nassau County Society at its last meeting took up the matter of a County Health Officer, and a County Communicable Disease Hospital. These are in the hands of a committee.

The matter of the Hospital is urgent as there is no place in the county to which communicable diseases can be sent, except cases of tuberculosis.

The annual meeting of the Second District Branch was held in the Kings County Medical Society Building in December, 1921. Interesting papers were read by Dr. Edwin Fiske and Dr. E. Eliot Harris whose paper on the "Proposed Changes in the Dispensary Law" was printed in the January JOURNAL.

It is with regret that I record the death of Martin M. Kittell, M.D., Second Vice-President of the Second District Branch, at Jamaica, N. Y., on February 27, 1922. Dr. Kittell has always been held in high esteem by all who knew him. His death will be a distinct loss to all of the members of the Medical Society of the State of New York in the Second District Branch.

Respectfully submitted,

ARTHUR D. JAQUES,
President.

April 1, 1922.

REPORT OF THE COUNCILOR OF THE THIRD DISTRICT BRANCH.

To the House of Delegates:

The Third District Branch is in healthy condition as a result of the efforts of my predecessor, Dr. Luther Emerick. There is much interest shown in the workings of the State Society and most of the members have awakened to their legislative responsibilities.

The Annual Meeting was held in Troy, where the Medical Society of the County of Rensselaer entertained the visitors at the Marshall Sanitarium, under the direction of Dr. Christopher Patterson. The morning was spent in the clinics at the Leonard, Troy and Samaritan Hospitals and the Marshall and Pawling Sanitariums. Luncheon was served at the Marshall Sanitarium.

The afternoon was devoted to the Scientific Session.

"Social Tendencies and the Medical Profession," James F. Rooney, M.D., President, Medical Society of the State of New York, Albany, N. Y.

"Mental Disturbances Resulting from Over Use of Drugs," Edward Livingston Hunt, M.D., Secretary, Medical Society of the State of New York, New York City.

"Studies of Blood Before and After Etherization in Man and Dog," Mary Gage Day, M.D., Kingston, N. Y.

"Regulation of Medical Practice," William D. Cutter, M.D., Secretary, State Board of Medical Examiners, Albany, N. Y.

"Brief Presentation of (1) Separation of the Lower Epiphysis of the Femur, (2) Fracture of the Shaft of the Femur, (3) Habitual Dislocation of the Patella," David S. Houston, M.D., Troy, N. Y.

The District Branch is opposed to State Medicine in any form and has approved the Revised Medical Practice Act.

Respectfully submitted,

ARTHUR J. BEDELL,
President.

April 1, 1922.

REPORT OF THE COUNCILOR OF THE FOURTH DISTRICT BRANCH.

To the House of Delegates:

The annual meeting of the Fourth District Branch was held at Schenectady on September 13, 1921. Seventy-one members were registered for the meeting.

Meeting called to order by the President, Dr. E. MacD. Stanton, of Schenectady, at 11 A. M.

Minutes of the last meeting read and accepted as read. There were no committee reports, unfinished or new business. The Scientific program was begun by the President's address. After a few words of welcome, Dr. Stanton read a paper on "Some Causes of Renal Pain Not Commonly Recognized." A second paper was read by Walter F. Lundblad, M.D., of Sayre, Pa., on "Basal Metabolism."

The third paper was read by K. Winfield Ney, M.D., of New York City, on "Nerve Injuries, their diagnosis and treatment." This paper was illustrated by a large number of lantern slides showing different types of nerve injury, repair processes, and deformities due to loss of nerve control. As the hour was getting late discussion of Dr. Ney's paper was postponed until after lunch.

Adjournment was then made, members going to the Mohawk Club where they were the guests at lunch of the Schenectady County Medical Society.

The afternoon session was opened at 2 P. M. with the delayed discussion of Dr. Ney's paper.

The first paper of the afternoon entitled "Toxic and Exhaustion Psychoses" was read by Dr. Edward Livingston Hunt, Secretary Medical Society of the State of New York.

The next paper, "Primary Tuberculosis, its Diagnosis and Extension" was read by William W. Howell, M.D., of Boston, Mass. This paper was accompanied by a large series of X-ray plates demonstrating tuberculosis in infancy. The subject was discussed by Drs. D. L. Kathan,

McPartlon, MacMinn, Betts, Sauter, Fodder and Bryant of Schenectady, and Dr. Timmerman of Amsterdam. Discussion closed by Dr. Howell.

The last paper of the afternoon was given by Dr. Peter McPartlon, Superintendent of the Glenridge Sanitarium, Schenectady, New York, on "Occupational Therapy in Tuberculosis Sanatoria." This address was accompanied by a demonstration of various articles made by the patients of Glenridge Sanitarium. The paper was discussed by Dr. Ney of New York.

I have corresponded with all presidents of the constituent county societies and neither myself nor through them can suggest any special business pertaining to the Fourth District Branch which should come before the State Society.

Respectfully submitted,

EDWARD MACD. STANTON,

April 1, 1922. *President.*

REPORT OF THE COUNCILOR OF THE FIFTH DISTRICT BRANCH.

To the House of Delegates:

The constituent county societies of the Fifth District Branch of the Medical Society of New York State are being conducted with great benefit to their members. At the annual meeting of the Branch held in Watertown on October 5, 1921, a program of unusual scientific merit was presented, including papers by Dr. Herman O. Mosenthal of New York City, Dr. Joseph H. Pratt of Boston, Dr. W. O. Johnson of Batavia, Dr. Burton T. Simpson of Buffalo and Dr. Walter A. Calihan of Rochester.

The nursing problem was discussed in two papers by members of the Branch and vigorous discussions followed. There was unanimous sentiment that at present it is impossible to obtain good nursing at prices within the ability of the average individual to pay. Not only the cost of nursing received severe censure but also the choosing of cases by nurses and their restriction of hours of labor. A return of the spirit of Florence Nightingale was called for, substituting a desire to help the sick whoever and wherever they might be for the modern longing for easy life and high pay. The suggestion that a new group of nurses, who know little of the science but much of the art of nursing, be created was favorably received.

It is hoped this subject will be taken up by other Branch Societies and by the State Society in order that the ensuing discussion and publicity will develop the best remedy and create the public sentiment necessary for carrying it out.

There has been considerable discussion of rural practice and of the proposed Health Center Bill. This bill has been quite universally condemned; there is demand for improved medical facilities in the country, but not subsidized and controlled by the State; above all there is demand for keeping state roads open for traffic through the winter so the present fairly satisfactory medical facilities will remain available.

The activity of the Legislative Committee of the State Society has attracted much favorable notice and its success in influencing recent public health legislation calls for the thanks of all citizens. The bill now awaiting the signature of Governor Miller providing for prosecution by the State of people charged with illegal practice of medicine is a most valuable piece of constructive legislation and will operate for the benefit of everybody.

W. D. ALSEVER,
President.

April 1, 1922.

REPORT OF THE COUNCILOR OF THE SIXTH DISTRICT BRANCH.

To the House of Delegates:

During the past year the various counties of the Sixth District Branch have held their regular meetings as per schedule except Delaware county.

Owing to the extent of territory in the county, the difficulty of getting to a common point and the small number of physicians (19) in the county, it has been impossible to get a quorum at a meeting for several years.

The profession of the county have requested to be allowed to surrender their charter and to be allowed to join with Otsego county in a bi-county society.

At the last annual meeting of the Sixth District Branch a resolution was passed favoring this.

It was recommended that Delaware county make a formal request to the House of Delegates at Albany to be allowed to affiliate with Otsego county as a Bi-county Society.

The County Societies of this District have all registered their disapproval of Compulsory Health Insurance, Chiropractic and Health Center legislation. They have been active through their legislative committees in working with the State Society's Legislative Committee to this end.

In regard to the Health Center agitation there seems to be a general feeling that the smaller localities need aid to secure better facilities in their present institutions in the matter of la-

boratory and X-ray facilities, rather than new institutions. The delay of reports from state and county laboratories are often a great handicap.

The District Branch meeting was held at The Glen Springs, Watkins, the first Tuesday of October.

There were 87 members present and 105 guests.

The management of The Glen Springs entertained the members and their guests at an elaborate luncheon, which was greatly enjoyed by all, as well as much appreciated by the members.

Entertainment during the day was provided for the guests of the visiting physicians.

Respectfully submitted,

LEON M. KYSOR,
President.

April 1, 1922.

REPORT OF THE COUNCILOR OF THE SEVENTH DISTRICT BRANCH

To the House of Delegates:

During the year past meetings of all the County Societies comprising the Seventh District Branch have been well attended and interest in affairs of the profession has been maintained.

All have appreciated the value of the newly established Legislative Bureau, and the activity of the Legislative Committee in their gigantic effort in guarding the public health, and the interest of the medical profession.

The annual meeting of the Seventh District Branch was very largely attended.

Respectfully submitted,

OWEN E. JONES,
President.

April 1, 1922.

REPORT OF THE EIGHTH DISTRICT BRANCH.

I am pleased to report that the affairs of the Eighth District Branch are in excellent condition.

There is a splendid esprit de corps and, with one exception, the county organizations are practically unanimous in their attitude toward the problems that confront them.

There is a wide-spread appreciation of the work of our Legislative Bureau and a very general feeling that the Medical Society of the State of New York is at last fulfilling its functions.

Respectfully submitted,

HARRY R. TRICK,
President.

April 1, 1922.

House of Delegates

The regular meeting of the House of Delegates of the Medical Society of the State of New York, was held in Chancellor's Hall, Education Building, Albany, New York, Monday, April 17, 1922, at 3 P. M.

Dr. E. Eliot Harris, speaker, presiding; Dr. Edward Livingston Hunt, secretary.

The Speaker called the meeting to order and announced that the first order of business was the roll call. The Secretary moved that the roll call be postponed until the following morning. Motion seconded and carried.

THE SPEAKER: The next order of business is the reading of the minutes of the previous meeting.

THE SECRETARY: As the minutes have been published in the *NEW YORK STATE JOURNAL OF MEDICINE*, I move that the reading be dispensed with, and that they be adopted as printed. Motion seconded and carried.

The Speaker announced that the next order of business was the appointment of reference committees and appointed the following:

Reference Committee on the report of the President: Composed of Ex-Presidents of the Society. Charles G. Stockton, Erie; Grover W. Wende, Erie; William Francis Campbell, Kings; J. Richard Kevin, Kings; Wendell C. Phillips, New York. Dr. Stockton not being present, Dr. Thomas C. Chalmers, Queens, was appointed in his place.

Reference Committee on the report of Speaker and Secretary:

Harry Aranow, Bronx; Luther Emerick, Ulster; William H. Ross, Suffolk; Joseph A. Driscoll, Kings; James P. Brady, Monroe.

Reference Committee on Report of Committee Legislation:

Julius B. Ransom, Clinton, Charles C. Trembley, Franklin; E. Warren Presley, Richmond; Melville S. Coxe, Chautauqua; Arthur F. Chace, New York. Dr. Chace being absent, Dr. Harold Hays was appointed in his place.

Reference Committee on Report of Committee on Public Health and Economics, Medical Research and Scientific Work:

James E. Sadlier, Dutchess-Putnam; Harry H. Halliwell, Herkimer; Frederick M. Miller, Oneida; G. Scott Towne, Saratoga; Milton A. McQuade, Orange.

Reference Committee on Constitution and By-laws: Daniel S. Dougherty, New York; Eugene E. Hinman, Albany; Arthur S. Corwin, Westchester; Luzerne Coville, Tompkins; Nelson O. Brooks, Madison.

Reference Committee on Report of Counsel and Councillors:

L. Howard Moss, Queens; Henry G. Hughes, Schenectady; Ralph E. Brodie, Orleans; Charles R. Payne, Essex; Howard W. Murphy, Montgomery.

Reference Committee on New Business A. Albert T. Lytle, Erie; Joseph S. Thomas, Queens; John C. S. Lappeus, Broome; George B. Stanwix, Westchester; Page E. Thornhill, Jefferson.

Reference Committee on New Business B. Albert W. Ferris, Schuylar; B. J. Duffy, Monroe; Russell S. Fowler, Kings; Arthur G. Bennett, Erie; W. Grant Cooper, St. Lawrence.

Reference Committee on New Business C. Orrin S. Wightman, New York; H. Burton Doust, Onondaga; De Witt H. Sherman, Erie; George M. Cady, Tioga; John W. Le Seur, Genesee.

THE SPEAKER: Owing to the death of Dr. Murray, we find ourselves in the situation of having no vice-speaker. What is your pleasure?

Dr. WENDE, Erie: I should like to nominate as vice-speaker, Dr. George M. Fisher, of Utica.

Motion seconded and carried unanimously.

THE SPEAKER: The next order of business is the address of the President, Dr. Rooney.

PRESIDENT ROONEY: Gentlemen of the House of Delegates: I first want to bring to your minds the very great loss that the Society has suffered in the past year through the death of Dr. Dwight H. Murray. There is no one of us who has lived through three or four sessions in the House of Delegates of this Society who has not been moved by his impartiality, his justice, his continuous kindness, his cheerfulness and good nature.

It rests with one who was fortunate enough to know him more intimately than I to appraise properly his ability. I can but state to you the deep sense of loss that I feel both for myself and for this society because of his death.

The President then read his address which was referred to the Reference Committee on Address of President.

THE SPEAKER: As the address of the Speaker is printed, the reading should give way to the stress of other business.

DR. PHILLIPS: I move that all the printed reports be referred to the respective committees for their consideration. Motion seconded and carried.

The reports of Speaker and Secretary were referred by the Speaker to the Reference Committee on report of Speaker and Secretary.

The report of Counsel and Councillors was referred to the Reference Committee on Report of Counsel and Councillors.

The Report of the Committee on Public Health, Medical Economics, Medical Research and Scientific Work was referred to the Reference Committee on those subjects.

THE SPEAKER: The Committee on Scientific Work has a supplementary report that is not included in Dr. Phillips' motion; if there is no objection we will hear the supplementary report of Dr. Lloyd, Chairman of that committee:

DR. LLOYD: It is the sad duty of the committee to record the death of Dr. Henry L. Lynah of New York City, the Chairman of the Section on Eye, Ear, Nose and Throat. Dr. Lynah had devoted himself enthusiastically to the work of the Committee, and the program of the Section as arranged for this meeting stands as a fitting memorial to his good judgment and zeal.

His death at this time, coming as it did just a few days before the meeting, is a distinct loss not only to the Section but to the Society as well.

In consequence of the death of Dr. Lynah, an agreement was made by some of the readers of the papers in the Symposium on Pulmonary Abscess, to abolish that symposium on Thursday morning. They communicated their desire to the Secretary of the Section, who, on his own responsibility, and without consulting with the officers of the Society or the Chairman of the Committee on Scientific Work, wrote to all of the men who were to read the papers, as well as to the discussors, notifying them that the Thursday morning session would not be held. The first intimation we had of this action was contained in a letter to the Secretary of the Society, dated April 11th, and received at the office in New York City late in the day of Thursday, April 12th. This letter was as follows:

'11 April '22.

"DOCTOR EDWARD LIVINGSTON HUNT,
Secretary Medical Society State of New York.

"DEAR DOCTOR:

"Can you arrange to have a slip inserted in the programs, at the meeting next Tuesday, stating that the Symposium on Pulmonary Abscess which should have been held on Thursday morning, will not take place, on account of the untimely death of the Chairman of the Section on Eye, Ear, Nose and Throat, Dr. Henry L. Lynah? It would be good if a notice to that effect could be posted at the Section meeting.

"Hoping that you can help the Section.

"Collegialites yours,

"BLAAUW."

This letter was immediately transmitted to Dr. Lloyd, the Chairman of the Committee on Scientific Work, who telegraphed Dr. Blaauw as follows: "Your letter to Dr. Hunt referred to me. Do not understand your reasons for suggesting change in program. Too late to make the change now. Should be carried through as printed. This Symposium too important to be omitted."

The next day, Friday, the following letter was received from the Secretary of the Section:

"DR. SAMUEL LLOYD,
Chairman, Committee on Scientific Work.

"DEAR DOCTOR:

"I received yesterday morning a telegram from 'the friends and co-workers of Dr. Henry L. Lynah,' who are stunned by his untimely death, they feel that the symposium, on his favorite subject lung abscess, arranged by him for the State Meeting, should be cancelled. All those who were to read papers on this subject or to discuss them make the unanimous request that the secretary send out official notices of cancellation of this number of the program."

"This I did. I wrote every one, to that effect, who was on the program for this symposium and asked Dr. Hunt, the secretary of the State Society, if he would not have a slip printed which could be put in the programs which every one would receive at the Albany meeting. As the time is rather pressing, I did not think that I should postpone acting. The true spirit of that symposium was gone, alas!

"Coll. yrs.,

"BLAAUW."

The Chairman of the Committee on Scientific Work then got in communication by telephone with every one who was to take part in this symposium, and all but two agreed to come to Albany on Thursday and put the program through as arranged. Dr. Gatewood said that he would not be able to read the first paper because he had given up its preparation on the receipt of the notice from the secretary. I then arranged with Dr. Marvin Jones of New York City, to take Dr. Gatewood's place.

Dr. Richard Jordan, who was to read the paper on Bronchoscopic Studies in Pulmonary Abscess absolutely refused to come to Albany, or to present his paper.

While we can appreciate the sentiment that inspired this action, we cannot but feel that if this is allowed to go unrebuked, it will establish a precedent that may cause great embarrassment to the Society in the future.

After a program has been prepared by the Committee on Scientific Work and approved by the Council, every one should use his utmost endeavor to carry it through. It is a great discourtesy not only to the officers of the society but to the whole membership to change any program at the last minute.

We therefore recommend that this House of Delegates censure the secretary of the Section on Eye, Ear, Nose and Throat, Dr. Edmond E. Blaauw, of Buffalo, and Dr. Richard Jordan, of New York City, for attempting to disrupt the program of this meeting.

Respectfully submitted,

SAMUEL LLOYD,
Chairman.

The Supplementary report was referred by the Speaker to the Reference Committee on Report of Committee on Scientific Work.

THE SPEAKER: The next order of business is the reading of reports of special committees. As the reports are printed, the one on Narcotic Drugs will go to the Committee on Address of President.

We will now hear from the Committee on Prize Essays.

DR. EDWARD D. FISHER presented the following report:

The Committee on Prize Essays take pleasure in saying that two essays have been received. After care-

ful consideration of these essays, the Committee is unanimous in recommending that the Lucien Howe Prize be awarded to the essay entitled "Some Observations with the Gullstrand Slit Lamp on the Lens, including Cataract."

The Speaker stated that it gave him much pleasure to announce that the winner of the Lucien Howe Prize was Dr. Arthur J. Bedell, of Albany.

THE SPEAKER: Is there any other special committee to report? If not, the next in order is unfinished business. Are there any communications?

THE SECRETARY: I have the following communications:

THE MEDICAL SOCIETY OF THE COUNTY OF ORANGE.

WHEREAS, We believe that the action of the Counselor of the Medical Society State of New York in ruling that Dr. Floyd H. Cook, a former member of the State and Counties, was not entitled to the protection afforded by the Medical Society of the State of New York was unjust and illegal; and as the services for which the suit was brought against Dr. Cook, were rendered while he was a member in good standing of the Medical Society of the County of Orange, and of the Medical Society of the State of New York.

Therefore, *Be it Resolved*, That the delegates from the Medical Society of the County of Orange to the Medical Society of the State of New York, be instructed to bring this matter before the House of Delegates, and to use their best endeavors to have such action taken as necessary to recompense Dr. Cook for the expense of legal services for defending the suit.

Adopted at a regular meeting of the Medical Society, of the County of Orange, held at Middletown, N. Y., Tuesday, April 4, 1922.

THE SPEAKER: It is referred to Committee on New Business A. Is there any other communication?

THE SECRETARY presented the following Resolution passed by the Medical Society of the County of Kings.

WHEREAS, The public and profession are being sold out to

1. Foundation control of "full time" medical education.
2. Lay board domination and the "closed shop" hospital.
3. Socialized state medicine, subsidized community health centers and hospitals under political or university control.
4. Legislative dictation of therapy and fees.
5. Demoralization of medical standards by the expansion of cults.
6. Exploitation of the specialties by lay technicians,

Therefore, *Be it Resolved*, That all the delegates from the Medical Society of the County of Kings to the Medical Society of the State of New York, and all such delegates who may be elected delegates to the American Medical Association, meeting in St. Louis, Mo., May 22-26, 1922, are hereby instructed to vote for

a. A change of police and leadership in the American Medical Association, pledged to the immediate abolition of the evils mentioned, and constructive protection of medical interests.

b. The repeal of multiple representation and plural voting privilege by Section Delegates.

c. The election of Trustees for a period of two years; five Trustees to be elected one year, and four the next, to prevent the Trustees from perpetuating oligarchical rule.

Be it Further Resolved, That copies of these Resolutions be sent at once to the New York State Journal of Medicine, the Journal of the American Medical Association, and the Medical Advisory Committee. April, 1922"

THE SPEAKER: It is referred to the Committee on New Business B.

THE SECRETARY read the following communication:

"March 30, 1922.

"JAMES F. ROONEY, M.D.,
355 Madison Ave., Albany, N. Y.

"MY DEAR DOCTOR:

"Together with Dr. Fisher, of New York, and Dr. Stockton, of Buffalo, I have served as a member of the Committee on Prize Essays for many years, but now, owing to my impaired hearing, it is impossible for me to attend the meetings, and it makes it very embarrassing. I wish you would kindly have me excused from reappointment, adding some one in my place from this section of the state and making Dr. Fisher chairman, as he is so familiar with the work of the committee.

"I regret very much my inability to be present at the next meeting but it is no use. I do not get any comfort from meeting the few old friends that are yet living on account of my distressful deafness.

"Wishing you the success to which you are richly entitled, and for the splendid record you have made in the past in behalf of the Medical Society, I am,

"Very sincerely yours,

"A. VANDER VEER."

THE SPEAKER: It is referred to the Reference Committee on New Business C.

The Secretary presented the following:

"TO THE MEDICAL SOCIETY OF THE STATE OF NEW YORK:

"Gentlemen:

"This Association, which represents the industrial, commercial and professional interests of New York, has the honor to invite your organization to convene in this city.

"New York possesses every facility and advantage as a meeting place. It is the commercial metropolis of the country, the center of many of its largest business interests and the greatest market for every commodity. It offers unrivalled attractions. It has first-class hotel accommodations for all comers.

"You will be made to feel at home in New York. Among its people are many of your friends and colleagues. They will be glad to have you come to New York for a meeting.

"This Association conducts a department for the purpose of assisting and co-operating with organizations holding their conventions here. Its facilities will be at your service.

"Trusting that New York soon may have the honor and pleasure of extending its hospitality to you, we are,

"Very respectfully yours,

"THE MERCHANTS ASSOCIATION OF NEW YORK,

"By S. C. MEAD, *Secretary.*"

THE SPEAKER: It is referred to the Reference Committee on New Business A.

THE SECRETARY: The following application for retired memberships in the Medical Society of the State of New York have been received:

Dr. Stephen S. Green, of Buffalo, eighty-three years old; Dr. John B. Coakley, of Buffalo, eighty-four years old; Dr. Hermann G. Klotz, of White Plains, seventy-seven years old; Dr. William McKay, New York City, seventy-two years old; Dr. P. Edwin Kidd, Brooklyn, seventy-one years old; Dr. Walter E. McChesney, of Buffalo, whose age according to the A. M. A. Directory is sixty-seven; Dr. Arthur W. Hurd, whose age, according to the A. M. A. Directory, is sixty-four; Dr. Frank Hinkel, of Buffalo, whose age, according to the A. M. A. Directory, is sixty-four. These last three are below the age prescribed in the by-laws for retired membership.

I also have an application for Dr. J. Richmond Pratt, of Manchester, New York.

THE SPEAKER: These applications are referred to the Reference Committee on New Business B. Is there any further unfinished business? If not, we are ready for reports of committees.

DR. LYTLE: The Reference Committee on New Business A is ready to report on the communication referred to it from the Medical Society of the County of Orange. After consultation of the constitution and by-laws we have concluded that this should come under the observation of the censors. Therefore, this committee recommends that the communication be referred to the Board of Censors.

THE SPEAKER: The Speaker will order it referred to the Board of Censors under the constitution and by-laws.

DR. LYTLE: The committee also reports on the communication referred to it from the Merchants Association of New York, that it is a matter to be decided by the Council of the Medical Society of the State of New York. Therefore, we recommend that this communication be referred to the Council. Motion seconded and carried.

DR. WIGHTMAN: The Reference Committee on New Business C reports that it accepts the resignation of Dr. A. Vander Veer with regret, and we extend our thanks for the able work that he has done on this committee. We would recommend that Dr. Edward D. Fisher, of New York, as suggested by Dr. Vander Veer, be appointed chairman of this committee. Seconded and carried.

DR. DOUGHERTY: The Reference Committee appointed to revise the proposed constitution and by-laws begs to report that it has considered and studied the revised constitution and by-laws submitted to them, and recommended the adoption of the changes herein offered.

THE SPEAKER: Is the counsel, Mr. Whiteside, in the house? I will ask Mr. Whiteside to come up here on the platform, because the constitution and by-laws are to be discussed and I may have to ask his advice.

DR. DOUGHERTY: Article I of the constitution, no changes. I move its adoption. Seconded and carried unanimously.

DR. DOUGHERTY: Article II, section 1. No changes. I move its adoption. Seconded and carried unanimously.

DR. DOUGHERTY: Article III. District Branches. No changes. I move its adoption. Seconded and carried unanimously.

DR. DOUGHERTY: Article IV. Membership. Those sections have been slightly changed and are drawn from the old constitution and by-laws. I move their adoption as printed. Seconded and carried unanimously.

DR. DOUGHERTY: Article V. Officers. I make a similar motion with regard to this article. Seconded and carried unanimously.

DR. DOUGHERTY: Article VI. House of Delegates. No changes. I move its adoption. Seconded and carried unanimously.

DR. DOUGHERTY: Article VII. No changes. I move its adoption. Seconded and carried unanimously.

DR. DOUGHERTY: I do not want to mix these two reports. We are reporting on the work of the committee that formulated the draft and that of our own committee. "Shall select an executive committee of the Council to carry on during the interim between the regular meetings of the Council the affairs and the business of the Society in accordance with the by-laws." That is Article 7, Council. The Committee moves its adoption. Motion seconded and carried unanimously.

DR. DOUGHERTY: Article VIII. Censors. We recommend the insertion of "The President or Vice-President when necessary, and the Secretary shall be elected ex-officio, and a majority of the other members to be elected shall consist of district councilors." They shall be known as the Board of Censors," strik-

ing out the words, "at least eight of said number shall consist of the president or the vice-president when necessary, secretary and district councilors. We also have added to the end of that section, "All decisions shall be subject to appeal to the House of Delegates." We have put that in every paragraph, Mr. Speaker, and gentlemen of the house, where there has been any special mention made of appeal, making this House of Delegates the court of last resort. I move the adoption of the article as amended. Seconded and carried unanimously.

THE SPEAKER: Now for the article as amended. Those in favor signify by saying aye, opposed no. Carried unanimously as amended.

DR. DOUGHERTY: The next is Article IX. Meetings. I move its adoption as printed. Motion seconded and carried unanimously.

THE SPEAKER: That first part is a copy of the law, is it not, Mr. Whiteside?

MR. WHITESIDE: Yes

THE SPEAKER: The speaker will order Section, 1, Article IX, incorporated in the Constitution under the law of the State of New York.

DR. DOUGHERTY: I move the adoption of Section 2 of Article IX, as printed. Seconded and carried unanimously.

DR. DOUGHERTY: Section X. Funds. The Committee on Revision has inserted new matter which the Reference Committee endorses. I move the adoption of the section as printed. Seconded and carried unanimously.

DR. DOUGHERTY: Article XI. Referendum. I move its adoption as printed. Seconded and carried unanimously.

DR. DOUGHERTY: Article XII. No changes. I move its adoption as printed. Seconded and carried unanimously.

DR. DOUGHERTY: Chapter 1 of the by-laws. No changes. I move its adoption as printed. Seconded and carried unanimously.

DR. DOUGHERTY: Chapter II, Section 1. No changes. I move its adoption as printed. Seconded and carried unanimously.

DR. DOUGHERTY: Chapter II, Section 2 and 3. No changes. I move their adoption. Seconded and carried unanimously.

DR. DOUGHERTY: Section IV is new. We recommend its adoption. Seconded and carried unanimously.

THE SPEAKER: That will be in order to carry out the law that was ordered as a part of the constitution.

DR. DOUGHERTY: Sections 5, 6 and 7. No change, excepting that the word "President" is changed to "Speaker." That was a typographical error and has been changed in ink in the printed pamphlets. I move their adoption. Seconded and carried unanimously.

DR. DOUGHERTY: Chapter III, Section 1. No changes. I move its adoption as printed. Seconded and carried unanimously.

DR. DOUGHERTY: Section 2. No changes. I move its adoption. Seconded and carried unanimously.

DR. DOUGHERTY: Sections 3, 4 and 5. No changes. I move their adoption. Seconded and carried unanimously.

DR. DOUGHERTY: Section 6: "It shall have authority to appoint committees for special purpose from among members of the society. Each committee shall report to the House of Delegates and to the Council when it so desires, and also when requested by it when the House of Delegates shall not be in session." The reading of that has been changed to "Each committee shall report to the House of Delegates and when the House of Delegates shall not be in session to the Council when it so desires, or when requested by the Council." It is

the same sense except that it is made a little clearer by eliminating the word "it" which occurs twice in succession. I move its adoption. Seconded and carried unanimously.

THE SPEAKER: Now as to the section as amended. Those in favor say aye, opposed no. Carried unanimously.

DR. DOUGHERTY: My stenographer has made a mistake here, and I move, Mr. President, that the action of the House in adopting the sections of Chapter III be reconsidered. Seconded and carried.

DR. DOUGHERTY: Section 1 of Chapter III, of the by-laws. Your reference committee recommends that the words "to complete business" be stricken out. We do that because there are times when we have to adjourn for other matters than to complete business. For instance, when Senator Davenport spoke to us in regard to his health insurance bill we adjourned and reconvened, and in order to bring such exigencies within our by-laws we have stricken out the words "to complete business," making it read merely that we may adjourn from time to time as may be necessary. I move the adoption of that amendment. Seconded and carried.

THE SPEAKER: Now, the section as amended. All those in favor say aye, opposed no. Carried unanimously.

DR. DOUGHERTY: Section 2. I move its adoption as printed. Seconded and carried unanimously.

DR. DOUGHERTY: Section 3. Insert the conjunction "and" after the word "exist," and add "it shall hear and finally determine all appeals taken from decisions of the Board of Censors," striking out the like words from section 5, and putting them in section 4, where they seem more properly to belong. I move its adoption as amended. Seconded and carried unanimously.

DR. DOUGHERTY: Section 4. The reference committee recommends the amendment of that section by striking out the words "such other" and inserting after the word "delegates" "to such bodies," so as to make it read "may elect or appoint delegates to such bodies as in its judgment the interests of the society may require." That change is simply to clarify the meaning. I move its adoption. Seconded and carried.

THE SPEAKER: Now the section as amended. All those in favor say aye, opposed no. Carried unanimously.

DR. DOUGHERTY: Section 5. Strike out the second clause. We have made that part of Section 3. I move its adoption as amended. Seconded and carried unanimously.

DR. DOUGHERTY: Section 7. No change. I move its adoption. Seconded and carried unanimously.

DR. DOUGHERTY: Section 8. Order of Business. To "unfinished business," we have added "reports of reference committees." I move its adoption. Seconded and carried.

THE SPEAKER: The order of business as amended. All those in favor say aye, opposed no. Carried unanimously.

DR. DOUGHERTY: Section 9. We recommend its adoption as printed. Seconded and carried unanimously.

DR. DOUGHERTY: Section 10. Method of holding elections. Gentlemen, this is a mooted question, and your committee recommends that we go back from the printed matter in our new revised draft to our old by-laws, and strike out the portion from "In case no nominee" to "shall have been chosen," and substitute "in case no nominee receives a majority of the votes on the first ballot the nominee receiving the lowest number of votes shall be dropped and a new ballot taken. This procedure shall be continued until one of the nominees receives a majority of the votes cast, when he shall be declared elected. In the case of election for delegates and alternates to the American Medical Association the nominees shall be declared elected on the one ballot

in the order of the highest number of votes received until the allotted number shall have been chosen." I move the adoption of that recommendation as amended.

THE SPEAKER: If there be no objection we will pass this section and go on to the next section. There being none it is so ordered.

DR. DOUGHERTY: Section 11. No change. I move its adoption. Seconded and carried unanimously.

DR. DOUGHERTY: Chapter IV, Section 1. No change. I move its adoption. Seconded and carried unanimously.

DR. DOUGHERTY: Section 2. No change. I move its adoption. Seconded and carried unanimously.

DR. DOUGHERTY: Section 3. Strike out from the words "the council shall elect" to "any member of the council," and substitute "at the first regular meeting of the council, held at the close of the annual session of the society, the council shall choose by a majority vote five members of the council, who together with the president and the secretary shall constitute the executive committee. Candidates for election to the executive committee shall be nominated by the president, but other candidates may be nominated by any member of the council." I move its adoption. Seconded and carried.

THE SPEAKER: Now the section is amended. Those in favor say aye, opposed no. Carried unanimously.

DR. DOUGHERTY: Section 4. Order of business is the same. I move its adoption. Seconded and carried unanimously.

DR. DOUGHERTY: I move the adoption of section 5, as printed. Seconded and carried unanimously.

DR. DOUGHERTY: Section 6, regarding moneys of the society. We have made a slight change there, adding after the words "Received by the Council" the words, "or any member or agent thereof." Then further on we have changed the second paragraph to read, "When the House of Delegates is not in session the Council shall have power," etc. I move its adoption. Seconded and carried.

THE SPEAKER: Now the section as amended. Those in favor say aye, opposed no. Carried unanimously.

DR. DOUGHERTY: Section 8, no change. We move its adoption. Seconded and carried unanimously.

DR. DOUGHERTY: Section 9, the same. I move its adoption. Seconded and carried unanimously.

DR. DOUGHERTY: Section 10, regarding the order of business. There is no provision for the report of the executive committee to the council, so we have made the fourth order of business the report of the executive committee, and changed the other numbers correspondingly. I move its adoption. Seconded and carried.

THE SPEAKER: Now the section as amended by the reference committee. All those in favor of the section as amended say aye, those opposed, no. Carried unanimously.

DR. DOUGHERTY: Section 7 was omitted from consideration by an oversight. I move its adoption. Seconded and carried unanimously.

DR. DOUGHERTY: Chapter V, Section 1. Your reference committee recommends the insertion after the words "final disposition of the matter" of the words, "subject, however, to appeal to the House of Delegates." I move the adoption of the amendment. Seconded and carried.

THE SPEAKER: Now the section as amended. All those in favor say aye, opposed no. Carried unanimously.

DR. DOUGHERTY: Chapter VI, Section 1. We recommend its adoption as printed. Seconded and carried unanimously.

DR. DOUGHERTY: Section 2. No changes. We recommend its adoption. Seconded and carried unanimously.

DR. DOUGHERTY: Section 3 contains new matter

added by the committee on revision. I recommend its adoption as printed. Seconded and carried unanimously.

DR. DOUGHERTY: Section 4, same as in the by-laws. I recommend its adoption as printed. Seconded and carried unanimously.

DR. DOUGHERTY: I make the same motion for section 5. Seconded and carried unanimously.

DR. DOUGHERTY: I move the adoption of Section 5-a. Seconded and carried unanimously.

DR. DOUGHERTY: Section 6. Your reference committee amends that to read, "shall be approved by the council and placed in the custody of the president." I move its adoption. Seconded and carried.

THE SPEAKER: Now the section as amended. All those in favor say aye, opposed no. Carried unanimously.

DR. DOUGHERTY: Sections 7 and 8. No changes. I move their adoption. Seconded and carried unanimously.

DR. DOUGHERTY: Section 9 is entirely new. I move its adoption as printed. Seconded and carried unanimously.

DR. DOUGHERTY: Chapter VII, Sections 1, 2 and 3. No changes. I move their adoption. Seconded and carried unanimously.

DR. DOUGHERTY: Section 4 of Chapter VII is changed to read, "The committee on legislation shall consist of three members including the chairman. It shall keep in touch with professional and public opinion in all legislative matters which may affect the welfare of the profession or the public health. Under the direction of the House of Delegates it shall represent the Society in procuring the enforcement of the medical laws of the state in the interest of public health and of scientific medicine, and in procuring the enactment of such medical laws as will best secure and promote the welfare of the whole people. It shall take all legal and honorable means of opposing and preventing all vicious and pernicious legislation detrimental to the best interests of the profession and the welfare of the public."

I move the adoption of that amendment. Motion seconded and lost, the ayes numbering forty-three and the nays fifty-three.

DR. DOUGHERTY: We have made another amendment: "It shall take all legal and honorable means of opposing and preventing all vicious legislation detrimental to the best interests of the profession and the welfare of the public." I move its adoption. Seconded and carried.

THE SPEAKER: Now, the section as amended. All those in favor say aye, those opposed, no. Carried unanimously.

DR. DOUGHERTY: Sections 5, 6, 7, 8 and 9. No changes by your reference committee. I move their adoption as printed. Seconded and carried unanimously.

DR. DOUGHERTY: Section 9-a. The three paragraphs referring to reference committees have been changed in order to expedite business and relieve the Speaker of some of his problems. They have been changed to read "immediately after the organization of the House of Delegates the Speaker shall announce such committees and the appointments of members thereto as he shall deem expedient for the purposes of the meeting. Each committee shall consist of five members, three members constituting a quorum, and shall serve during the meeting at which they are appointed."

"To the appropriate committee shall be referred all recommendations, resolutions, measures and propositions presented to the House of Delegates."

"Each reference committee shall as soon as possible take up and consider such business as may have been referred to it and shall report when called upon to do so."

I move its adoption as amended. Seconded and carried unanimously.

THE SPEAKER: The section as amended is now before you. Those in favor say aye, opposed, no. Carried unanimously.

DR. DOUGHERTY: Section 10-a, no change. I move its adoption as printed. Motion seconded.

DR. ERNEST E. SMITH: Section 10-a that refers to special committees, and a and b seem to be misprinted.

THE SPEAKER: The point made by Dr. Smith, of Queens, the speaker orders to be incorporated as corrections.

The motion is now upon the adoption of section 10. All those in favor say aye, those opposed, no. Carried unanimously.

DR. DOUGHERTY: Dr. Smith has drawn our attention to something that escaped us, and a very important thing. Section 9 we adopted. Then they have section 9-a, and then section 10-a. That can be taken care of by renumbering Section 9-a and 10-a and 11. Carried unanimously.

Section 11, no change. I recommend its adoption. Seconded and carried unanimously.

DR. DOUGHERTY: Chapter VIII. District Branches. No changes. I move its adoption as printed. Seconded and carried unanimously.

DR. DOUGHERTY: Chapter IX, Section 1. There is merely a change in the verbiage there. "Shall each organize by the election of a chairman and a secretary. The chairman shall be elected annually, the secretary for such term as the section may deem fit." I move its adoption. Seconded and carried.

THE SPEAKER: Now the section as amended. All those in favor say aye, those opposed, no. Carried unanimously.

DR. DOUGHERTY: Sections 2, 3 and 4. I move their adoption as printed. Seconded and carried unanimously.

DR. DOUGHERTY: Chapter X. Component county societies. Sections 1 and 2, no change, except that we have added to section 1, "No member, however, shall be an active member of more than one component county society." We have added that because we find from the records in the office of the State Secretary that there are fifty-three members in this society who are paying dues to two county societies, and who are voting for the delegates and officers of two county societies.

DR. LUDLUM: Queens. I move that this be referred back to the reference committee for further consideration. Motion seconded and lost.

THE SPEAKER: The question now is upon the adoption of the amendment of the reference committee.

DR. DOUGHERTY: "That no member, however, shall be an active member (that is, a member who pays dues) of more than one component county society."

DR. CHALMERS, Queens: It seems to me that this would be better. "That he shall be an active voting member of the county society in which he resides." I will move that as an amendment. Motion seconded.

After some discussion Dr. Chalmers asked leave to withdraw his proposed amendment to the amendment. Motion to withdraw seconded and carried. Amendment was withdrawn.

DR. DOUGHERTY: We move as an additional sentence to Chapter X, Section 1, "No member, however, shall be an active member of more than one component county society." Seconded and carried by two-thirds vote.

THE SPEAKER: Now, the section as amended. All those in favor of the section as amended say aye; those opposed, no. Carried by two-thirds vote.

DR. DOUGHERTY: Section 2. I move its adoption as printed. Motion seconded and carried unanimously.

DR. DOUGHERTY: Section 3. I move its adoption as printed. Seconded and carried unanimously.

DR. DOUGHERTY: We recommend the adoption of Sections 4, 5 and 6, as printed, and I so move. Seconded and carried unanimously.

DR. DOUGHERTY: Chapter XI. We move the adoption of Section 1, as printed. Seconded and carried unanimously.

DR. DOUGHERTY: Section 2. We move its adoption as printed. Seconded and carried unanimously.

DR. DOUGHERTY: Sections 3 and 4. Your committee recommends the adoption as printed, and so moves. Motion seconded and carried unanimously.

DR. DOUGHERTY: Section 5 is new, and your reference committee concurs in it. I move its adoption as printed. Motion seconded.

DR. PRENTICE: I think there should be a change in one word in the latter part of that paragraph, "That no such officer or member of the committee"—I think it should read "a" committee, and I so move. Seconded and carried.

THE SPEAKER: Now, the section as amended. All those in favor say aye; those opposed, no. Carried unanimously.

DR. DOUGHERTY: The next is a new section, Section 6, "Section 8 of Chapter III of the by-laws, which refers to the order of business, and Section 9-a of Chapter VII, which refers to reference committees may be suspended by a two-thirds vote, at any session of the annual meeting of the House of Delegates." Very often in order to expedite business it is necessary to change the order of business or perhaps to change the method of appointing a reference committee. I move its adoption. Seconded and carried unanimously.

DR. DOUGHERTY: I recommend the adoption of Chapter XII, as printed, and I so move. Motion seconded and carried unanimously.

DR. DOUGHERTY: I recommended the adoption of Chapter XIII, and I so move. Seconded and carried unanimously.

DR. DOUGHERTY: Now, I move the adoption of these revised constitution and by-laws as amended, as a whole.

DR. MABBOTT: There were one or two matters left unfinished.

THE SPEAKER: The Section 10 of Chapter III on election has not been acted upon.

DR. MABBOTT: Under the by-laws, Chapter II, Section 4, I made an objection to the language because I thought it should be revised; and Chapter III in regard to the successive elections before the report on the previous ballot. I was requested to confer with the chairman of the committee in regard to that.

THE SPEAKER: You mean in regard to the wording of section 10?

DR. MABBOTT: Yes.

THE SPEAKER: That is still in the hands of the committee. They will be glad to receive the views of any member.

DR. MABBOTT: May I refer back to section 4 of Chapter II. I think the language there is at fault. I think it is at fault where it says "Should such resolution not be introduced the House of Delegates hereby delegates authority to the council to fix the time and place of meeting." It seems to me that the by-laws should cover that, and should say, "It is hereby provided that the authority to fix the time and place of such meeting shall revert to the council."

DR. PHILLIPS: It is now six o'clock, and I move that we adjourn to reconvene in this room at eight p. m. Motion seconded and carried.

The House of Delegates thereupon adjourned to reconvene at 8 o'clock p. m.

EDWARD LIVINGSTON HUNT,
Secretary.

EVENING SESSION

The House of Delegates reconvened at 8 P. M., and was called to order by the Speaker, Dr. E. Eliot Harris.

THE SPEAKER: The secretary will call the roll.

The Secretary called the roll and the following delegates responded: Eugene E. Hinman, Howard E. Lomax, Chauncey R. Bowen, Harry Aranow, J. Bernard Cohen, Edward R. Cunniffe, Paul Luttinger, Joseph Popper, Norman Roth, Nathan B. Van Etten, Edmund E. Specht, John C. S. Lappeus, Charles S. Wilson, Harry S. Bull, Melville S. Coxe, John C. Fisher, George DeB. Johnson, Julius B. Ransom, Charles J. Kelley, John A. Card, James E. Sadlier, Arthur G. Bennett, Francis E. Fronczak, F. Park Lewis, De Witt H. Sherman, Grover W. Wende, Allen A. Jones, Albert T. Lytle, Hugh B. Deegan, Charles R. Payne, Sylvester C. Clemans, Page E. Thornhill, Lewis P. Addoms, Elias H. Bartley, William F. Campbell, Robert E. Coughlin, Harry Feldman, Russell S. Fowler, Charles H. Goodrich, Edwin A. Griffin, Frank D. Jennings, John E. Jennings, J. Richard Kevin, Walter D. Ludlum, John F. W. Meagher, Frederick J. Bowen, Nelson O. Brooks, James P. Brady, Clarence V. Costello, B. J. Duffy, Irving E. Harris, Floyd S. Winslow, Howard W. Murphy, George A. Newton, Theodore H. Allen, George Barrie, Samuel J. Kopetzky, Edward M. Colie, Jr., Daniel S. Dougherty, Ten Eyck Elmendorf, Gustav G. Fisch, Harold Hays, Ward B. Hoag, George W. Kosmak, J. Milton Mabbott, Robert H. Halsey, Edward D. Fisher, James Pedersen, Wendell C. Phillips, Alfred C. Prentice, Malcolm C. Rose, De Witt Stetten, Howard C. Taylor, Robert E. Walsh, William M. Patterson, Orrii S. Wightman, Raymond S. Barry, George M. Fisher, Howard J. Teller, Robert Burns, H. Burton Doust, William L. Wallace, John H. Pratt, Ralph E. Brodie, Arthur H. Brownell, Thomas C. Chalmers, Henry C. Courten, L. Howard Moss, Ernest E. Smith, Charles B. Story, Joseph S. Thomas, Christopher J. Patterson, Stanley W. Sayer, Henry G. Hughes, Frederick C. Reed, Le Roy Becker, Albert W. Ferris, Robert M. Elliott, Frank Overton, William H. Ross, Luzerne Colville, Luther Emerick, Walter A. Leonard, Edward F. Briggs, Arthur S. Corwin, George B. Stanwix, Edward W. Weber.

The following officers and chairmen of standing committees were present: James F. Rooney, E. Eliot Harris, William H. Purdy, Edward Livingston Hunt, Arthur D. Jaques, Arthur J. Bedell, Edwin MacD. Stanton, Leon M. Kysor, Owen E. Jones, Samuel Lloyd, James N. Vander Veer, Frederic E. Sondern, Frederic C. Conway.

THE SPEAKER: We will call for the report of the first committee, the committee on the address of the president.

DR. WIGHTMAN: New York. I move that each recommendation be acted upon separately. Motion seconded and carried.

DR. WENDE: The Reference Committee on the President's Address begs leave to recommend as follows:

In regard to the suggestion of increasing membership, it recommends that the matter be referred to the council to devise ways and means of stimulating county societies to greater action. Seconded and carried.

DR. WENDE: That in regard to the recommendation under Committees, the Reference Committee recommends that the council or the Executive Committee arrange for a conference with the chairmen of all standing and special committees shortly after their appointment or election. I move the adoption of the recommendation. Seconded and carried.

DR. WENDE: That in regard to the American Medical Association resolution opposing the Sheppard-Towner bill, the Reference Committee has knowledge that the Sheppard-Towner bill was a Republican platform measure and bound to be enacted against all opposition and that notwithstanding this attitude, the

American Medical Association Journal opposed the measure while all the officers and trustees both officially and individually interviewed Congressmen in an effort to prevent its passage and the Reference Committee recommends that no action be taken.

DR. WENDE: That in regard to the recommendation that "the medical profession cease to carry the onus of the protection of the public health alone," the Reference Committee recommends that the following be adopted, to wit, that the medical profession as represented by the House of Delegates of the Medical Society of the State of New York is opposed to relinquishing and abandoning all that has been achieved through years of effort to protect the health welfare of the people, which has been crystalized in the present Medical Practice Act and that the House of Delegates instructs the Committee on Legislation to endeavor to so amend the present Medical Practice act that it shall protect the people and profession from all future contingencies.

I move the adoption of that recommendation. Seconded and carried.

DR. WENDE: That in considering the suggestion in regard to education of the public, the Reference Committee heartily approves and recommends that a concerted program for the education of the public by the organized profession be adopted and the committee believes that such education will be materially furthered by the publication of a National Health Journal for popular reading as is at present proposed by the Trustees of the American Medical Association.

I move the adoption of that recommendation. Seconded and carried.

DR. WENDE: That in considering the recommendation in the Chapter on Discipline, the Reference Committee approve that definite action now be taken providing for causes subjecting members to trial and expulsion and that the matter be referred to the Committee on Constitution and By-laws.

The chairman of the committee recommends that that portion of it be referred to the Reference Committee on Constitution and By-laws. Motion seconded.

DR. COVILLE, Tompkins: I move to amend that this be referred to the council. Motion seconded and carried.

THE SPEAKER: Now the recommendation as amended, that that portion of the report which has been just read be referred to the council. Is there any discussion on that? All those in favor say aye, those opposed say no. Carried.

DR. WENDE: In the Chapter on Legislation, the Reference Committee approves of the suggestion that a National Legislative Bureau be established as a means for the co-ordination of the legislative efforts of all State Societies.

I move the adoption of that recommendation. Seconded and carried.

DR. WENDE: In the Chapter on Officers in regard to the recommendation, making past presidents life members of the House of Delegates, with voice but without vote, the Reference Committee approves of the recommendation and recommends that it be referred to the Committee on Constitution and By-laws.

I move its adoption. Seconded and carried.

THE SPEAKER: The next is the report of the Speaker. I will ask the Vice-Speaker to take the chair.

DR. FISHER, Vice-Speaker, thereupon assumed the chair.

DR. ARANOW: The committee on Report of Speaker and Secretary have read the reports carefully and wish to make the following recommendations, first; the recommendation of the Speaker that the House rise and remain standing in silence for one minute out of respect to the memory of the late Dr. Dwight H. Murray. I move the adoption of that recommendation. Seconded and carried unanimously.

Thereupon, in pursuance of the recommendation, the House of Delegates arose and remained standing for one minute out of respect to the memory of the late Vice-Speaker, Dr. Dwight H. Murray.

DR. ARANOW: We further recommend that the House of Delegates refer the question of the abuse of the medical charity dispensaries, etc., to the council for consideration and action in behalf of this society. The Speaker's report goes into a very thorough discussion of the subject, and the House is probably acquainted with the report. I move the adoption of this recommendation. Seconded and carried.

DR. ARANOW: The third recommendation is that the principles of ethics of the American Medical Association as revised May 7, 1903, be incorporated in either the Constitution or the By-laws. I want to explain that this report was made before we heard Dr. Dougherty make another suggestion. I do not know what the standing of the committee is at present. However, I make the motion that this report be accepted as it is, Motion seconded.

DR. DOUGHERTY: That would have to be referred to our committee if it is to be incorporated in the Constitution or By-Laws.

THE VICE-SPEAKER: That is the motion, as I understand it. Those in favor will please say aye; contrary, no. It is so ordered.

DR. ARANOW: We further recommend that the House of Delegates authorize the continuation of the Legislative Bureau at Albany, and that the council be requested to vote an appropriation for its maintenance. I move the adoption of this recommendation. Seconded and carried.

DR. ARANOW: The last is not a recommendation but just an expression of the committee. The committee wishes to express its approval of the plan of insurance known as the Group Liability policy which has been in force for a year.

THE VICE-SPEAKER: The next is the Report of the Committee on Medical Economics, Medical Research and Scientific Work.

DR. TOWNE: The report of the Committee on Scientific Work is approved.

The supplementary report of the Committee on Scientific Work has received careful consideration, and the committee feels that while we appreciate the sentiment that prompted the action of Dr. Blaauw, secretary of the section of Eye, Ear, Nose and Throat, and Dr. Jordan, of New York City, nevertheless we concur in the supplementary report of the Committee on Scientific Work censuring Dr. Blaauw and Dr. Jordan for attempting to disrupt the program of the meeting.

We recommend the adoption of the Report of the Committee on Medical Research. We feel that it does not adequately express to the House of Delegates the great value of the services of its chairman, through whose untiring efforts for years the anti-vivisection legislation has been defeated, and we recommend that the House of Delegates extend to Dr. Sondern a vote of thanks for successfully defeating this vicious legislation.

We recommend the adoption of the Report of the Committee on Public Health and Medical Education, except that portion which refers to the establishment of a public health bureau, feeling that such a radical procedure should be left entirely to the judgement of the House of Delegates rather than to so small a committee.

The recommendations of the Committee on Medical Economics are generally approved, number one, eliminating the first year in the high schools as a requisite for admission to hospital training schools is approved. We also approve of extending the age of admission from seventeen to eighteen. Recommendation number three is approved as written. Recommendation number four is approved as written. Recommendation number

five of establishing short courses for trained attendants is also approved. Recommendation number six relating to the State-Wide Publicity Campaign is approved.

Moved and seconded that the Report of the Reference Committee be adopted as read.

DR. FISCH: I move the deletion from this report of that portion which pertains to the censuring of Dr. Richard Jordan. Motion seconded.

DR. SONDERN rose to a point of order, inquiring whether the House under the Constitution and By-laws possessed the power to censure anybody.

THE VICE-SPEAKER ruled that the point of order was well taken.

DR. WALLACE: I want to oppose the part of the report that favors the training of attendants as nurses, and I move that the portion of this report favoring the education of attendants be omitted. Motion seconded and lost.

THE VICE-SPEAKER: Now we are on the original motion accepting the report of the committee as read, subject to the point of order made by Dr. Sondern. Those in favor will say aye; those opposed, no. Motion carried.

THE SECRETARY: The next committee, Mr. Speaker, is that on Constitution and By-laws, Dr. Dougherty, of New York, Chairman.

DR. DOUGHERTY: Your committee has very carefully studied the section which was referred back to it, Chapter III, of the By-laws, Section 10, method of holding elections, and they offer the following. They having seen no reason to change their minds regarding the method of procedure in the election of officers. They substitute "in case no nominee receives the majority of the votes on the first ballot the nominee receiving the lowest number of votes shall be dropped and a new ballot taken. This procedure shall be continued until one of the nominees receives a majority of the votes cast, when he shall be declared elected."

In case of the election of the delegates we offer the following, which is the succeeding clause: "In the case of the election of delegates and alternates to the American Medical Association, the following shall be the procedure: The delegates and alternates shall be voted upon in separate groups. Each ballot shall contain as many names as there are vacancies to be filled. Any ballot containing more or fewer names than vacancies shall be void. The nominees shall be declared elected in the order of the highest number of votes until the allotted number shall be chosen. No nomination shall be made for any office until the result of the preceding ballot shall be announced."

I move the adoption of this in Section 10, Chapter III, of the By-laws, and in doing so will request the counsel to give his opinion.

MR. WHITESIDE: The suggestion that delegates be restricted in their right of franchise in my judgment violates the fundamental law that effects all membership corporations. In all membership corporations the individual members have the right of franchise that is given by the laws of the state and they cannot be abridged. The suggestion of the Reference Committee would constitute an abridgement of that constitutional privilege, and in my judgment is unlawful.

DR. DOUGHERTY: Then, we can easily strike that out and have the clause read "In case of the election of delegates and alternates to the American Medical Association, the following shall be the procedure: The delegates and alternates shall be voted upon in separate groups. The nominees shall be declared elected in the order of the highest number of votes until the allotted number shall have been chosen. No nominations shall be made for any office until the result of the preceding ballot shall be announced. I move the adoption of that. Seconded and carried upon

a rising vote. The ayes numbering seventy-eight, the nays thirty-seven.

DR. DOUGHERTY: Your committee offers, according to the recommendation of the president, referred to us by the committee to which his address had been referred, the following alteration of Article VI, Section 1, adding after the words, "The House of Delegates shall be composed," etc., the words, "and the past presidents of the society who shall be life members with voice but without vote."

Upon motion duly made and seconded the recommendation was adopted unanimously.

DR. DOUGHERTY: As to the section of the Speaker's address, "The Principle of Ethics of the American Medical Association as revised May 7, 1903, shall be the guide of members in their relation to each other and to the public," we suggest that it be not adopted, and recommend instead that the House of Delegates appoint a special committee to draw up, together with the legal counsel, a concise but sufficient code of ethics by which the membership shall be governed in its relations to one another and to the public. Motion seconded.

Dr. Harris, the Speaker resumed the chair. This House must be aware that the matter of the Principles of Ethics of the American Medical Association, of May 7, 1903, was ordered by the Supreme Court of the State of New York as a referendum to the full vote of the Society, 3,306 votes in favor and 197 against. The adoption by a referendum vote of the Society is binding upon the House of Delegates and also upon the Society, and a motion of this kind nullifying the referendum on the principles of ethics, I will declare out of order. Now, if you wish to make any motion to take up a revised code of ethics and present it in the proper form, I will be very glad to entertain it.

DR. DOUGHERTY: Your Reference Committee moves that a special committee of the House of Delegates be appointed to revise the Code of Ethics of the American Medical Association as revised May 7, 1903, and adopted by the Medical Society of the State of New York; and to report back to the Council at its convenience. Motion seconded and carried.

DR. DOUGHERTY: Now that we have adopted the draft of the revised constitution and by-laws seriatim as amended, I move that they now be adopted as a whole, as amended.

In making this motion I would like to call attention to the work that has been done by the sub-committee. They have labored to do something that has never been done before: to make the legal relationship between component county societies and the State Society, between the component societies themselves and among the membership, more clearly defined than it has ever been before, to clear away all discrepancies. It has taken a vast amount of work on the part of that committee and our legal counsel to do this, because they have not only had to revise the by-laws, but they have had to search through all the codifications of laws affecting the State Society and the component societies from 1806 to the present day. It has been an immense work of love. The time and effort spent upon the little work that this Reference Committee has done show us clearly the tremendous amount of work that these men must have done, and I think that they deserve the thanks of the Society for that work. I take great pleasure in moving that their work as recommended by our Reference Committee be accepted as a whole. Motion seconded.

DR. MABBOTT: The president of this Society made a suggestion this afternoon as to the same article which has been corrected to-night, to the effect that he thought that there should be a provision by which a man who is a nominee for a certain office, if not successful for election to that office could possibly become a candidate for some other office. I was re-

quested to confer with the chairman of the Reference Committee in regard to that matter, and I did so confer with him, and I would like the privilege before the motion is placed before the House for adoption (and I have no personal interest, any more than anybody else) of saying a word in regard thereto. It seems to me the president's suggestion is in line with other proper modification of the closing sentence of Section X, Article 3, "No ballot for any office shall be taken while a ballot for another office is being taken."

THE SPEAKER: Has that been modified by the Reference Committee?

DR. DOUGHERTY: It was, and was just adopted a few moments ago—"No nominations shall be made for any office until the result of the previous ballot shall be announced." This is new matter. We struck out the other, and substituted, "No nominations shall be made for any office until the result of the previous ballot shall be announced."

THE SPEAKER: The question now is upon the adoption as a whole, of the revised Constitution and By-laws, as amended. Are you ready for the question? All those in favor say aye, those opposed, no. Carried unanimously.

DR. ROONEY: The Chairman of this committee was Dr. Frederic E. Sondern, who was assisted by Mr. George W. Whiteside.

DR. DOUGHERTY: I move that a vote of thanks be given to those men for their energetic and efficient work, and I say that in all sincerity. Motion seconded and carried unanimously.

DR. FRONCZAK: Under provisions of Sections 1 and 2 of Chapter XIII, notice is hereby specifically given of the following amendments to the By-laws of the said Society:

That Chapter XI, section 5, be amended to read, following the sentence"..... Disciplined except by a two-thirds vote of the council....."

"In case charges are preferred against the President of the Society, which may entail discipline or removal from office for malfeasance or non-feasance in office, such charges must be preferred in writing, signed by ten members of the Society, and be transmitted to the Secretary for presentation to the Council of the Society within thirty days for such action as the Council may deem just and proper. The President, against whom the charges have been so preferred, shall have the same rights and privileges as any other officer or member of any committee of the Society against whom charges for discipline or removal from office for malfeasance or non-feasance in office, may have been preferred."

THE SPEAKER: Hand in your amendment and place it on file.

The next order of business is the report of the Reference Committee on the Report of the Committee on Legislation, Dr. Ransom, chairman.

DR. RANSOM: In considering the work of the Committee on Legislation, it is recommended that there be better co-operation between the Chairman of the State Legislative Committee and the Chairman of the Legislative Committees of the various County Societies.

DR. SONDERN: In the interests of economy I would like to amend that recommendation by saying that as far as possible information should be sent to the members of the society by being printed in the JOURNAL. Seconded and carried.

THE SPEAKER: The question is now upon the recommendation as amended. All those in favor say aye; those opposed, no. Carried.

DR. RANSOM: It is recommended that your Legislative Bureau be continued. That the Legislative Bureau continue its activities against all cults especially Chiropractors, and that an effort be made through the county society presidents to interest individual members of county societies in this matter so that they

may enlist the support of their legislators, both in Senate and Assembly.

We especially approve the action on Senate Bill Int. No. 854, in reference to prohibiting the use of a degree without educational qualifications, and suggest that the names of the legislators who voted for and against this bill be sent to every member of the Society so that he can proceed properly at future elections.

We desire to give our general commendation on the actions of the Legislative Bureau as outlined in their report, and wish to specifically comment upon their suggestions for future work.

1. In reference to the continuance of the Committee. This meets with our approval.

2. We endorse the paragraph with reservations as to the expenditure of moneys for bulletins.

3. We commend the spirit of suggestion No. 3, with limitations, which should be outlined by a special committee.

4. We commend that some sort of Budget system be adopted for expenditures, which should be placed before the proper authorities, so that a definite amount of money may be set aside each year for the use of the committee.

I move the adoption of these resolutions. Seconded and carried.

DR. RANSOM: We commend that the Legislative Committee of the various counties be standardized through the State Legislative Bureau, so that they may work along the same lines as the State Bureau. I move the adoption of that recommendation. Seconded and carried.

DR. RANSOM: We especially recommend that the Chairman of your Legislative Bureau be placed in complete charge of all hearings, and that no member of this society should be allowed to go before the Legislature without first advising with him.

I move the adoption of that recommendation. Motion seconded.

DR. ROONEY: I move to substitute for the amendment proposed by Dr. Philips (Dr. Philips having proposed the words, "any member of any constituent county medical society") the following: "Any member of this Society," because any member of a county society is by his very position of being a member of the county society a member of the State Society." It would seem to me that that would still give the county societies the right to express their desires by their official representatives without the possibility of censure; but any individual member of the Society who claims to represent this Society, not a county society, but this Society, should be subject to censure. I would move to substitute the words, "Any member of this Society," for the words, "Any member of any constituent county medical society." Seconded and carried.

THE SPEAKER: Now the report as recommended by the committee as amended is before you. All those in favor say aye, those opposed, no. Carried.

We recommend that this Bureau continue its activities in combating Federal legislation which unnecessarily adds to the difficulties of conforming with the legalized practice of medicine.

I move the adoption of that recommendation. Seconded and carried.

DR. RANSOM: We approve the suggestion that a uniform Chiropractic bill similar to the Osteopathic bill be put before the Legislature.

We recommend the adoption of that. Seconded.

DR. ROONEY: I move to amend that, that the House of Delegates instruct the chairman of its Legislative Committee that it will not oppose a bill for the regulation of Chiropractics, provided the standards set for the waiver clause shall not be less than that now set for the waiver clause of the Osteopathic bill of 1907,

and further provided that the licensing be controlled by the Board of Regents, and that the examination be conducted by one state board of medical examiners. Seconded and carried.

After a free discussion of the subject the question of the adoption of the Reference Committee's report as amended was placed before the House and regularly adopted.

DR. RANSOM: Your Committee desire to make two special suggestions:—

a. That a committee be appointed to investigate the advisability of spreading legislative matters before the members of the Society, through a publication similar to the *Medical Week*, issued for the Medical Society of the County of New York, rather than appropriating a large sum of money for issuing bulletins which would necessitate an appropriation of \$5,000 to \$8,000 per year.

It is recommended that the Chairman of the Legislative Committee call together the various chairmen of the various legislative committees of the county societies. And secondly, an advisory committee should be appointed to assist him so that he will not have to do this work single handed. This committee should consist of reputable men within easy reach of the chairman, so that if necessary they may come to a definite conclusion over night.

DR. RANSOM: We desire to congratulate the Legislative Committee, particularly its chairman, upon the excellent work, which was performed under unusual conditions, where the duties were both onerous and burdensome. We feel that the committee should have more support in the future, not only from the presidents of the various county societies, the chairmen of the legislative committees of the county societies, but also from the individual members of these societies.

JULIUS B. RANSOM,
CHARLES C. TREMBLEY,
E. WARREN PRESLEY,
MELVILLE S. COXE,
HAROLD HAYS.

THE SPEAKER: The next is the report of the Committee on Counsel and Councillors, Dr. Moss, of Queens.

DR. MOSS: Report of the Reference Committee appointed to consider the Reports of the Counsel and the Councillors:

Report of Counsel. Your committee desires to emphasize four or five salient points in the report of the Counsel.

1st. That only 31 per cent. of members of the State Society have taken advantage of the insurance against charges of malpractice under the State Society plan.

2nd. That as this percentage increases the cost of insurance will decrease.

3rd. The responsibility of the County Societies in seeing that this percentage is increased.

4th. That this insurance should appeal particularly to the general practitioner as 74 per cent. of suits are against the general practitioner.

Your committee endorses the suggestions with which our counsel closes his report, and recommends their adoption by the individual doctor in his daily practice.

Your committee moves the report of the counsel be approved.

Seconded and carried.

DR. MOSS: Report of the Councillors:

Your committee moves that the Reports of the Councillors be approved and that the recommendation of the Councillor of the Sixth District Branch, that Delaware County and Otsego County be allowed to affiliate as a bi-county society, be granted by the House of Delegates, should such permission be asked.

L. HOWARD MOSS,
RALPH E. BRODIE.

THE SPEAKER: That will have to be submitted in the proper way under the Constitution and By-laws. It is ordered that the Reference Committee strike it out of its report.

THE SPEAKER: The next is Committee on New Business, A.

DR. LYTLE:

The Reference Committee on New Business, A, on resolution from Kings County concerning lay technicians, believes the subject to be of sufficient importance to demand careful study. The committee, therefore, recommends that a committee be appointed to study the subject and report its findings to the council.

ALBERT T. LYTLE,
JOSEPH S. THOMAS,
JOHN C. S. LAPPEUS,
GEORGE B. STANWIX,
PAGE E. THORNHILL.

Seconded and carried.

THE SPEAKER: The next is Reference Committee B, Dr. Ferris.

DR. FERRIS: The Committee on New Business B, reports that the resolution passed by the Medical Society of the County of Kings simply informs the House of Delegates that the Medical Society of the County of Kings has instructed its delegates to this House to take certain action, and is not a recommendation that this House take any action. Therefore your committee recommends that the resolution be simply received without action by the House.

DR. SONDERN: I have a resolution that I should like to offer now.

The following information has come to the Committee on Publication:

You undoubtedly have heard that the *Medical Record* has ceased to exist. Nominally, it has been taken over by A. R. Elliott, of the A. R. Elliott Advertising Agency, who is the owner and publisher of the *New York Medical Journal*.

There is a big opportunity here for the organized profession of New York State to step in and supply what has long been needed—a weekly medical journal that will represent scientific medicine. It would not be a serious financial undertaking by any means. The *NEW YORK STATE JOURNAL* recently has had a circulation equal to that of the *New York Medical Journal* and the *New York Medical Record*. The *NEW YORK STATE JOURNAL OF MEDICINE* has in fact practically the same circulation as *The Journal of the American Medical Association* some years ago. It would be an easy matter to issue it once a week, if you could secure the right man to direct it, and there are plenty of such men. What a splendid opportunity.

There is a great need for a good, strong, healthy, scientific weekly medical journal in the east—which means in New York. And the time is opportune.

We therefore move that this matter be referred to the Council with power. Seconded and carried.

DR. PHILLIPS: I move that we adjourn to meet in this same place at nine o'clock to-morrow morning, for the purpose of electing officers of the Society.

Motion seconded and carried.

The House of Delegates thereupon adjourned to meet at nine o'clock the following morning.

EDWARD LIVINGSTON HUNT,
Secretary.

ADJOURNED SESSION OF THE HOUSE OF DELEGATES
APRIL 18, 1922.

THE SPEAKER: The Secretary will call the roll.

The Secretary called the roll and the following delegates responded:

Eugene E. Hinman, Howard E. Lomax, Joseph P. O'Brien, Chauncey R. Bowen, Harry Aranow, Norman Roth, Jacob A. Keller, Cornelius J. Egan, Vincent S. Hayward, William Klein, Edmund E. Specht, John C. S. Lappeus, Charles S. Wilson, Jacob E. K. Morris, Harry S. Bull, Melville S. Coxe, John C. Fisher, George DeB. Johnson, Julius B. Ransom, Sherwood V. Whitbeck, Charles J. Kelley, John A. Card, James E. Sadlier, Aaron Sobel, Arthur G. Bennett, Francis E. Fronczak, DeWitt H. Sherman, Grover W. Wende, Hugh B. Deegan, Allen A. Jones, Francis D. Leopold, Albert T. Lytle, Charles R. Payne, Sylvester C. Clemans, John W. LeSeur, Dean W. Jennings, Harry H. Halliwell, Page E. Thornhill, Lewis P. Addoms, Robert F. Barber, Elias H. Bartley, William F. Campbell, Robert E. Coughlin, Harry Feldman, Russell S. Fowler, Charles H. Goodrich, Edwin A. Griffin, Frank D. Jennings, John E. Jennings, J. Richard Kevin, Walter D. Ludlum, John F. W. Meagher, Charles E. Scofield, William C. Dean, Frederick J. Bowen, Nelson O. Brooks, James P. Brady, John R. Booth, Alvah S. Miller, Willard H. Veeder, Floyd S. Winslow, Howard W. Murphy, George A. Newton, Theodore H. Allen, George Barrie, Samuel J. Kopetzky, Edward M. Colie, Jr., Daniel S. Dougherty, Ten Eyck Elmendorf, Gustav G. Fisch, Harold Hays, Ward B. Hoag, George W. Kosmak, J. Milton Mabbott, Robert H. Halsey, Edward D. Fisher, James Pedersen, Wendell C. Phillips, Alfred C. Prentice, Malcolm C. Rose, DeWitt Stetten, Howard C. Taylor, Frederick T. van Beuren, Jr., Robert E. Walsh, William M. Patterson, Orriu S. Wightman, Charles W. Clendenan, Raymond S. Barry, George M. Fisher, F. M. Miller, Howard J. Teller, Robert Burns, H. Burton Doust, William L. Wallace, John H. Pratt, John I. Cotter, Milton A. McQuade, Ralph E. Brodie, James E. Mansfield, Arthur H. Brownell, Thomas C. Chalmers, Henry C. Courten, L. Howard Moss, Ernest E. Smith, Charles B. Story, Joseph S. Thomas, Christopher J. Patterson, Vincent G. Smith, Charles D. Kline, Stanley W. Sayer, George Scott Towne, Henry G. Hughes, Frederick C. Reed, Le Roy Becker, Albert W. Ferris, Robert M. Elliott, Herbert B. Smith, Frank Overton, William H. Ross, George M. Cady, Luzerne Coville, Luther Emerick, Henry E. Clarke, Walter A. Leonard, Edward F. Briggs, Arthur S. Corwin, George B. Stanwix, Chauncey W. Umsted, Edward W. Weber, George E. Welker.

The following officers and chairmen of standing committees were present:

James F. Rooney, E. Eliot Harris, W. Meddaugh Dunning, William H. Purdy, Edward Livingston Hunt, George A. Leitner, Arthur D. Jaques, Arthur J. Bedell, Edwin MacD. Stanton, Leon M. Kysor, Owen E. Jones, Harry R. Trick, Samuel Lloyd, James N. Vander Veer, Henry Lyle Winter, Joshua M. Van Cott, Frederic E. Sondern, Frederic C. Conway.

The Speaker appointed Drs. Frederic E. Sondern, Luzerne Coville, Owen E. Jones, Arthur J. Bedell, Albert W. Ferris and Albert T. Lytle as tellers, and declared the floor open for nominations for officers of the society.

The following officers were nominated and declared duly elected:

President, Dr. Arthur W. Booth, Elmira; Vice-president, Dr. Nathan B. Van Etten, Bronx; Speaker, Dr. E. Eliot Harris, New York; Vice-Speaker, Dr. George M. Fisher, Utica; Secretary, Dr. Edward Livingston Hunt, New York; Assistant Secretary, Dr. Wilbur Ward, New York; Treasurer, Dr. Seth M. Milliken, New York; Assistant Treasurer, Dr. Charles Gordon Heyd, New York; Chairman of

Committee on Scientific Work, Dr. Parker Syms, New York; Chairman of the Committee on Legislation, Dr. James N. Vander Veer, Albany; Chairman of Committee on Public Health and Medical Education, Dr. Joshua M. Van Cott, Brooklyn; Chairman of Committee on Medical Research, Dr. Frederic E. Sondern, New York; Chairman of Committee on Medical Economics, Dr. Henry Lyle Winter, Cornwall.

Moved and seconded that the appointments of the chairman of the Committee on Arrangements be left to the Council. Carried.

The following delegates were declared duly elected to the American Medical Association:

Drs. E. Eliot Harris, Edward Livingston Hunt, Thomas W. Chalmers, Arthur J. Bedell, Grant C. Madill, and J. Richard Kevin.

Alternates: Drs. G. Scott Towne, Alfred C. Prentice, Owen E. Jones, Albert T. Lytle, Nelson O. Brooks, and Albert W. Ferris.

Dr. Lucien Howe of Buffalo was elected a member of the Committee on Prize Essays.

DR. SWAN, having obtained the privilege of the floor, announced that a movement is on foot, which was started by the President of the Republic of Panama, the Honorable Belisario Porras, to establish an institute to the memory of Major-General William C. Gorgas, which shall be devoted to research and the dissemination of information concerning preventive medicine. The president of the Board of Directors of the Gorgas Memorial Institute has asked me to present this matter to your attention and obtain your activities in its interests. Dr. Allen A. Jones has a resolution which he wishes to present at this time.

DR. JONES: *Resolved*, that the House of Delegates of the Medical Society of the State of New York is in cordial sympathy with the plans of the directors of the Gorgas Memorial Institute, and asks the co-operation of its members as far as they feel able so to do.

THE SPEAKER: If someone will move the suspension of the by-laws governing Reference Committees we can consider it now.

DR. PHILLIPS: I so move. Seconded and carried by two-thirds vote.

THE SPEAKER: The resolution upon the Gorgas Memorial Institute is now before you. Is there any discussion? If not, all those in favor say aye, opposed, no. Carried unanimously.

DR. BEDELL: I move to amend that Chapter and Sections of the constitution affecting the nomination and election of officers, chairmen, delegates, etc., as follows: That all nominations be made on the first day of the meeting; that these names be printed on one or more ballots, to be voted on the second day as at present.

THE SPEAKER: Has the secretary any communication with regard to retired members?

THE SECRETARY: I have the following communication from the Medical Society of the County of Oneida, asking that Drs. William Kuhn and Sands C. Maxson be elected to retired membership.

Each is seventy years of age.

DR. PHILLIPS: I move to suspend its reference to the Reference Committee. Seconded and carried by two-thirds vote.

Upon motion duly made, seconded and carried, the members named were declared elected to retired membership.

DR. CHALMERS: The Reference Committee on Report of the Committee on Narcotic Drugs approves the stand taken that drug addiction is a habit rather than a disease entity. That the Harrison Law be approved; that the recommendation of the American Medical Association Narcotics Committee of 1921, in regard to the expenditure of moneys derived from the enforcement of the law be endorsed; that defectives and criminals addicted to drugs should be under proper state

or county custodial care or approved private institutions; that ambulatory treatment of addicts has proved ineffectual, and that the manufacture of heroin be restricted because unnecessary in the practice of medicine. It is only fair to say that one member of this Reference Committee objected to this approval of this restrictive clause.

DR. BEDELL: I move that the report be tabled. Motion seconded and lost.

DR. MABBOTT: I move that the recommendation of the Reference Committee be approved. Seconded and carried.

DR. FERRIS: Your Committee on New Business B, recommend that the House of Delegates elect to retired membership in the Medical Society of the State of New York, the following active members of the Society, application for retirement having been made by the various county societies, and all being over the prescribed age required by the By-laws; Drs. John B. Coakley, Stephen S. Green, P. Edwin Kidd, Hermann G. Klotz, William McKay and J. Richmond Pratt. Seconded and carried.

THE SPEAKER: Has anybody introduced a resolution in this House that has not been reported back by a reference committee? There being none, I declare the House of Delegates adjourned.

The House of Delegates, thereupon adjourned at 12:30 P. M.

EDWARD LIVINGSTON HUNT,
Secretary.

Deaths

ARTHUR, CHARLES W., Plattsburg; University of Vermont, 1865; Fellow American Medical Association; Member State Society; Physician Champlain Valley. Died March 2, 1922.

DUNHAM, EDWARD KELLOGG, New York City; Harvard, 1886; Fellow American Medical Association; American Pathological and Bacteriological Societies; Member State Society; Academy of Medicine. Died April 15, 1922.

ETTINGER, HENRY, New York City; Bellevue Medical College, 1890; Fellow American Medical Association; Member State Society. Died April 8, 1922.

HIRONS, GARDNER, New York City; Medical College of Ohio, 1882; Fellow American Medical Association; Academy of Medicine; Member State Society; New York Obstetrical Society. Died April 19, 1922.

HITCHCOCK, PURBY LEANDER, Croton Falls; College of Physicians and Surgeons, of New York, 1881; Fellow American Medical Association; Member State Society. Died April 5, 1922.

HUTCHINS, FRANK FULLER, Antwerp; New York University, 1892; Member State Society. Died April 18, 1922.

KLIPPERT, HERMAN G., New York City; College of Physicians and Surgeons of New York, 1889; Member State Society. Died April 1, 1922.

LYNAH, HENRY LOWNDES, New York City; Medical College of South Carolina, 1900; Fellow American Medical Association; American Laryngological, Rhinological and Otological Societies; Academy Medicine; Member State Society; Laryngologist Willard Parker, Riverside and Kingston Avenue Hospitals. Died March 31, 1922.

NEEDHAM, GEORGE GORDON, New York City; Bellevue Medical 1865; Fellow American Medical Association; American Academy of Medicine; Member State Society; Academy of Medicine. Died April 5, 1922.

PATTERSON, FRANK NEWHALL, New York City; New York University, 1886; Fellow American Medical Association; Member State Society; Academy of Medicine. Died April 18, 1922.

SCHOONMAKER, PERRY, New York City; University of Michigan, 1880; Fellow American Medical Association; Member State Society; Assistant Otolgologist Post Graduate Hospital. Died April 28, 1922.

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The above officers (with the exception of the Assistant Secretary and Assistant Treasurer), the ex-President and the Councilors of the District Branches.

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Secretary, LA SALLE ARCHAMBAULT, M.D., Albany.

LEGISLATION

The current legislative session has come to an end and the most constructive measure introduced by the medical profession has been vetoed by the Governor. The memorandum filed by Governor Miller in this connection is both interesting and instructive and deserves careful study by everyone interested in public health.

ALBANY, April 12, 1922.

Memorandum filed with Senate Bill, Introductory Number 537, Printer Number 1440, entitled—

"AN ACT to amend the public health law, in relation to the practice of medicine."

Disapproved:

This bill amends the Public Health Law in respect of the penalties and punishment prescribed and the method of prosecution for illegally practicing medicine.

I am in sympathy with its general purpose, but the provisions for civil penalties and for criminal prosecutions are so commingled as to create too much uncertainty and ambiguity for a criminal statute of such severity.

Moreover, it is at least doubtful whether the act does not attempt to confer jurisdiction upon courts of special sessions to impose prison sentence of five years. It says:

"For a second conviction of a violation of any of the provisions of this article, which act constitutes a misdemeanor, and for each subsequent conviction, the penalty shall be not less than five hundred, nor more than one thousand dollars, or imprisonment for not less than one year, nor more than five years, or both such fine and imprisonment."

That punishment is imposed for a "second conviction" of an act expressly denominated a misdemeanor, not for a second *offense* to be prosecuted by indictment. Such a provision is of too doubtful validity for a criminal statute which must be strictly construed.

Moreover, the severity of the punishment will tend to defeat the very purpose of the act, as it will make it even more difficult to obtain convictions.

The bill is directed against all who illegally practice medicine. Its sponsors deny that it is specially directed against chiropractors, who constitute the main opposition to the bill. Confessedly they are now practicing their art in violation of law. This act should be amended in such fashion as to make its provisions enforceable, and, if the practice of chiropractic is to be permitted, it should be legalized and suitable preliminary and professional qualifications should be imposed.

This bill is disapproved.

(Signed) NATHAN L. MILLER.

It is evident from the above that the bill was not drawn with sufficient care and that its importance as a measure to insure public safety was not appreciated by the public at large. The fact that the establishment of a Legislative Bureau has been a great step in the right direction bears repetition, also that the rapid and efficient spreading of information concerning proposed laws has been accomplished as never before. The County Society Legislative Committees have been kept thoroughly posted by means of bulletins of information issued as frequently as necessary. It must, however, be realized that this is but the beginning of what the Bureau should be. It must be in position to command the services of the best medical and legal talent in the interest of public health and should develop ways and means to secure the support and co-operation of civic bodies equally interested in the public good.

NEW HOSPITAL INFORMATION BUREAU

The United Hospital Fund has recently established a Hospital Information Bureau with offices in the New York Academy of Medicine Annex Building, 15 West 43rd Street. The aim of the Bureau is to collect, analyze, interpret and make available facts and information bearing upon the needs and activities of the hospitals and the health interests of New York City. It will keep in touch with hospital work and progress in the city, and furnish information to all persons interested concerning administration, record-keeping and other facts as to hospital work, organization and facilities; it will prepare exhibits and maintain a library of hospital reports and statistics; it will likewise keep on file record forms and blanks used in the several departments of the hospitals.

Anyone interested in these matters will be welcomed at the office of the Bureau. Boards of Trustees may like to compare their hospitals with others which have the same capacity and are doing similar work, as to utilization, number of nurses and employees per patient, charges made for rooms, ward beds, laboratory, X-ray and special work; they may also like to know the types of administrative organization in the various hospitals which are comparable to theirs. Superintendents may wish to know what are the various per capita costs involved in hospital operation, such as the per capita meat bill, laundry cost and other items which make up the total cost per patient. Information about hospitals will be published from time to time. Whenever called upon the Bureau will try to assist in such administrative and efficiency studies as would be of value to the hospitals, municipal and private.

The Bureau will fulfill one of the corporate purposes of the United Hospital Fund as stated in Article III of the Constitution, namely, "to further methods of economy in management and to co-ordinate and extend the work of the hospitals."

The need for a permanent Bureau of this kind was revealed by the recent comprehensive study of the New York City hospitals made by the Public Health Committee of the New York Academy of Medicine, at whose earnest suggestion the United Hospital Fund has established the new Bureau.

The Committee in charge of the Bureau is as follows: Mr. Francis Smyth, Chairman, Trustee of the United Hospital Fund and member of the Committee on Dispensary Development; Dr. W. Gilman Thompson, President of the Reconstruction Hospital and Trustee of the New York Academy of Medicine; Dr. S. S. Goldwater, Director of Mt. Sinai Hospital, formerly Commissioner of Health; Mr. Julius A. Stursberg, Trustee of the Lenox Hill Hospital, and Mr. Henry C. Wright, Hospital Consultant and Trustee of Bellevue and Allied Hospitals.

AMERICAN PROCTOLOGIC SOCIETY

PRELIMINARY PROGRAM

TWENTY-THIRD ANNUAL MEETING, ST. LOUIS, Mo.,
MAY 22 AND 23, 1922

The profession is cordially invited to attend the public sessions.

Among the papers to be presented will be "Some Observations on Infections of the Rectum and Adjacent Structures," Granville S. Hanes; "Anal Pruritus," Joseph F. Montague; "Scalping Operation for Abscesses About the Rectum," Walter A. Fansler; "Office Care of Ano-rectal Diseases," William M. Beach; "Foreign Bodies in the Rectum," John D. Stewart; "Constipation and Its Surgical Relations," James C. Minor; "Colostomy Technic," Ralph W. Jackson; "Value of Temporary Colostomy," Louis J. Hirschman; "Synergistic Analgesia in Rectal Operations," Joseph F. Saphir; "Aseptic Local Anesthesia as Applied to the Anal Region with a Reference to Anesthetic Composition," Edward G. Martin; "Pruritus Ani, Ischio-Rectal Abscess, Ameba Histolitica Infection," Charles E. Howard; "Papilloma of the Rectum," Harry B. Adams; "Method for Charting Proctologic Cases," Collier F. Martin.

NOTES FROM THE STATE DEPARTMENT OF HEALTH

ADDITIONAL CASES OF SMALLPOX

Three more cases of smallpox have been reported in New York State, outside of New York City, in addition to the eleven cases mentioned in these notes last month. One of the latest cases is a severe type of confluent smallpox reported from the St. Regis Indian Reservation in Franklin County. The patient, an Indian, had been visiting for three weeks in the province of Ontario and developed smallpox six days after his return to the reservation. Meanwhile the Connecticut outbreak continues, over 300 cases having now been reported since the first of this year in Bridgeport and other nearby cities in the State. The new cases occurring in New York State present a monotonous repetition of the familiar history of no vaccination or of vaccination many years ago in childhood. The Department has issued warnings through the newspapers urging the importance of vaccination, and physicians are asked to co-operate with the authorities by scrutinizing with unusual care all cases of eruptive diseases among their patients.

CLEAN-UP WEEK

April 17th to 24th was designated as annual Clean-Up Week in a letter addressed by the Commissioner of Health to all Mayors, Village Presidents and local Boards of Health. The response has been widespread and a great number of communities throughout the State have energetically promoted a thorough spring cleaning by the removal of wastes and rubbish in the general interests of cleanliness and sanitation.

SUPERVISION OF MIDWIVES

A new law, signed by the Governor on April 6, 1922, strengthens the position of state and local departments of health in respect to the licensing and registration of midwives of the state, except in the cities of Rochester and New York. This law, which transfers to the statutes certain requirements hitherto confined to the Sanitary Code, authorizes the State Commissioner of Health or his Deputy to revoke a midwife's license for cause after giving the midwife an opportunity to be heard. The Commissioner is authorized to make rules and regulations for the supervision and regulation of the practice of midwifery; and any violation of such regulations or of the Public Health Law, the Sanitary Code or the regulations of any local Board of Health, shall be sufficient cause for revoking or withholding a license.

The Commissioner is authorized to require local health officers to report as to the conduct of the midwives practicing within their jurisdiction; and such reports and those of employees of the Department shall be deemed sufficient to justify the action of the State Commissioner of Health in refusing to grant or renew any license. The holder of a license to practice midwifery is required to register with the local registrar of vital statistics of the district wherein she resides and of each district wherein she engages in the practice of midwifery, within ten days after the issuance of a license and after any change in her address.

A CASE OF ANTHRAX

One of the sanitary supervisors reports a case of anthrax in a farmer who had performed an autopsy on a cow which had died suddenly from some unknown cause. In conducting the autopsy the patient got some of the fluid into one of his eyes and in twenty-four hours this was followed by the appearance of a pustule and the characteristic symptoms of anthrax. A laboratory examination showed the presence of the anthrax bacillus. The patient died two days later.

PROGRESS WITH THE SCHICK TEST

In co-operation with local health officers, physicians and other civic and educational leaders, the Department is making energetic efforts to extend in upstate

cities the use of the Schick test and toxin-antitoxin immunization against diphtheria. In the city of Auburn, 3,915 school children have been tested with the result that 60 percent were found positive and 40 percent negative. Of those found positive 83 percent have been given three protective injections of toxin-antitoxin.

In Seneca Falls 465 school children of the village have been tested of whom 302 were positive and 163 negative. Of the positives 245 have accepted immunization, taking all three doses. This represents 81 percent of the positive reactors immunized as against a record of only about 50 percent of the positives who have accepted immunization in New York City.

Efforts are being made to complete arrangements for the Schick testing and the immunization of the school children of Niagara Falls and Albany. On purely economic grounds this preventive measure should commend itself to boards of health, boards of education and to the community at large.

EFFECTIVENESS OF DIPHTHERIA IMMUNIZATION

Dr. Sears, the State Sanitary Supervisor, who supervised the recent Schick testing and immunization in Auburn, reports that ten months ago he visited all the inmates of the Orphan's Home in that city, 58 in number, and 41 of these children proved to be positive at the time. These were immunized by the house physician and at the time of Dr. Sear's recent visit, 26 children who had entered the Home since the last testing were also tested and immunized. The 33 children still remaining in the Home who had been immunized 10 months ago were then retested and 32 were found absolutely negative and the other one so slightly positive that it was difficult to make a definite statement concerning his condition; but to assure safety he was reimmunized.

SPECIAL CLINICS ON SYPHILIS AND GONORRHEA

The Division of Venereal Diseases of the State Department of Health in co-operation with the United States Public Health Service and the Albany Medical College conducted a series of clinics on syphilis and gonorrhea in the Albany Hospital during the week of April 18-21. The clinics were open to all physicians and nurses. An effort was made to have exhibited at each clinic patients who possessed the type of lesion under discussion. During the forenoon of each day the physicians assembled in one large group while in the afternoon they divided themselves into smaller groups for work and study in diagnostic and treatment clinics.

Dr. H. H. Hazen of Washington, conducted two clinics on dermatological and visceral syphilis. Dr. Grover Wende of Buffalo, gave a lecture on the differential diagnosis of syphilis from other skin lesions. He demonstrated the points in his lecture with a most remarkable collection of lantern slides. Dr. John A. Fordyce of New York City, gave a clinic on neurosyphilis and in co-operation with Dr. Isadore Rosen of New York City, gave another on congenital syphilis. Patients were treated in both clinics. Dr. Edward L. Keyes, Jr., of New York City, gave two clinics on gonorrhea in the male and Dr. Guy Hunner, Baltimore, gave one on gonorrhea in the female. The final clinic was given by Dr. Park Lewis of Buffalo, on eye conditions caused by infections with gonorrhea and syphilis. Approximately 115 physicians attended one or more of the clinics.

SURVEY OF VENEREAL DISEASE CLINICS

Dr. Alec Thomson, Medical Director of the American Social Hygiene Association, is making a study of the venereal disease clinics in New York State. The survey was requested by the State Department of Health with the idea of securing suggestions for increasing the efficiency of the clinics.

MEDICAL SOCIETY OF THE COUNTY OF WESTCHESTER

The Medical Society of Westchester County was organized on May 8th, 1797. The 125th anniversary of this event will be celebrated at a banquet to be held at the Commodore Hotel, New York, on Monday, May 8.

The Westchester Society is the second oldest medical organization in New York State anticipating by at least five years the formation of any similar county society.

Recent examination of the minutes of the Society suggest that the call for the first meeting and organization was pursuant to certain legislative enactment regarding the practice of medicine. This examination of the early minutes also establishes the fact that many of the problems of these early pioneers in medicine were essentially similar to those of our own time. There is to be noted the fundamental ethical conception that all medical discoveries of whatever nature belong to the profession as a whole. The illegal practitioner was also a frequent cause of debate, and we also learn that membership in the Society was necessary in order to establish the legal status of the practitioner.

The banquet on May 8th, is to be attended by Gov. Miller, Dr. Hubert Work, representing the American Medical Association, Dr. Booth, the new President of our State Society; Dr. Harvey, of the New Jersey Society and Dr. Simon Flexner. Dr. Frank S. Meara will speak on the "Old Country Doctor," and Dr. George Stewart on "The Physician of the Present Day."

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

THE HEALTHY CHILD FROM TWO TO SEVEN, A Handbook for Parents, Nurses and Workers for Child Welfare, containing the "fundamental principles of nutrition and physical care. By FRANCIS HAMILTON MACCARTHY, M.D., Assistant Professor Diseases Children, Boston University. The Macmillan Co., New York, 1922. \$1.50.

MANAGEMENT OF THE SICK INFANT, by LANGLEY PORTER, B.S., M.D., M.R.C.S., (Eng.), L.R.C.P. (Lond.), Professor of Clinical Pediatrics, University of California Medical School, and WILLIAM E. CARTER, M.D., Assistant in Pediatrics and Chief of Out Patient, Dept., University of California Medical School. Illustrated. C. V. Mosby Co., St. Louis, 1922. \$7.50.

CLINICS OF GEORGE W. CRILE, M.D., AND ASSOCIATES AT THE CLEVELAND CLINIC, OHIO. THE THYROID GLAND. Octavo of 228 pages, with 106 illustrations. Philadelphia and London: W. B. Saunders Company, 1922. Cloth. \$5.00 net.

SURGICAL AND MECHANICAL TREATMENT OF PERIPHERAL NERVES. By BYRON STOOKEY, M.D., Associate in Neurology, Columbia University; Assistant Professor of Neurosurgery, New York Post-Graduate Medical School. With a chapter on Nerve Degeneration and Regeneration by G. CARL HUBER, M.D., Professor of Anatomy, University of Michigan. Octavo of 475 pages; illustrations, 8 in colors, 20 charts. Phila. and London: W. B. Saunders Co., 1922. Cloth, \$10.00 net.

THE PLACE OF VERSION IN OBSTETRICS, by IRVING W. POTTER, M.D., F.A.C.S., Buffalo, N. Y., Obstetrician-in-Chief, Deaconess Hospital and St. Mary's Maternity Hospital. With 42 illustrations. C. V. Mosby Co., St. Louis. 1922. \$5.00.

RADIUM THERAPY, by FRANK EDWARD SIMPSON, A.B., M.D., Professor of Dermatology, Chicago Polyclinic; Adjunct Clinical Professor of Dermatology, Northwestern University Medical School. 166 original engravings. C. V. Mosby Co., St. Louis. 1922. \$7.00.

Book Reviews

DISEASES OF THE EYE. A Hand Book of Ophthalmic Practice for Students and Practitioners, by GEORGE E. DESCHWEINIZ, M.D., LL.D., Professor, Ophthalmology, University Pennsylvania. Ninth Edition, Reset. Octavo 832 pages, 415 text-illustrations, 7 colored plates. Phila. and London: W. B. Saunders Co., 1921. Cloth, \$10.00 net.

There is considerable new material in this ninth edition of this really fine work. Much of this relates to matter appearing during the World War, and developed during and since that time. Relating directly to War Ophthalmology are references to Poisonous Gas Conjunctivitis, Contusion and Concussion of the Eyeball in Warfare, and a number of other allusions throughout the chapters devoted to various parts of the eye.

Other subjects mentioned for the first time include Ophthalmoscopy with Red-Free Light, Unusual Forms of Conjunctivitis, Several corneal conditions, such as Trypanosome Keratitis, Superficial Linear Keratitis, Keratitis Pustuliformis Profunda, Etc.

A number of operative procedures not included in other editions are here described, among them several skin grafting operations for the correction of ectropion, Maxwell's operation for Contracted Socket, three operations for the relief of Detachment of the Retina, and others.

The book in all its editions has been clearly written, well expressed, and easy to read. Much space is devoted to the treatment of each disease, a factor of the greatest importance but too often scantily covered by many authors.

This Ninth Edition has been entirely reset and reprinted, and it is unfortunate that so fine a work should be marred by numerous typographical errors. It remains a standard text book of Ophthalmology.

E. CLIFFORD PLACE.

NEOPLASTIC DISEASES. A treatise on Tumors, by JAMES EWING, M.D., Sc.D., Professor Pathology, Cornell University Medical College. Second Edition, revised and enlarged. Octavo 1054 pages, 514 illustrations. Phila. and London: W. B. Saunders Co., 1922. Cloth, \$12.00 net.

Neoplastic diseases, a treatise on tumors, a second edition following within two years of the first, greatly enlarged and revised, with 514 illustrations of which 33 have been added to the original presents itself as the outstanding authority on this very complex subject.

The author in the first part of the work under the heading of "General Oncology", reviews the historical data in great detail and then takes up the classification of tumors, accepting the histological as against the regional or etiological classifications. He has endeavored to analyze the numerous etiologic factors which meet in such diverse fashions in the inception of tumors, to emphasize the general dependence of clinical course upon histologic structure, to trace the histogenesis to the last degree, impressing its essential importance when known.

Interesting chapters on the effect of malignancy on the organism, metastasis, chemistry of tumors, theories of the nature of cancer and experimental cancer research are well worth reading.

In the second part, on "Special Oncology", following the histological classification mainly, but with many chapters on regional tumors, the author takes up in detail each of the tumor diseases, emphasizing the clinical types. He stresses the importance of realizing that the significant facts about tumors are not of general application, but are best revealed in the study of special tumor groups or even of special cases.

The extensive bibliographic lists covering 43 pages are of great value to the reader who desires complete information, and to whom the work is chiefly addressed. It will be many years before this volume will be supplanted as the foremost reference on this subject.

W. V. P.

THE SURGICAL CLINICS OF NORTH AMERICA.

Volume 1, Number 5, October, 1921 (Mayo Clinic Number).

The entire number is devoted to discussions of important topics by members of the staff of the Mayo Clinic. There is one characteristic feature common to all the Mayo publications that makes them quite distinctive, in that they are usually prepared in such a manner as to appeal to the internist as well as to the surgeon. Leaving out the purely technical part, the rest of the contribution usually conveys a definite and vital message, which will engage the interest and attention of every practitioner who is alive to the progress in the various fields of medicine.

The article by Dr. Wm. J. Mayo, illustrates that very well. Splenectomy as an operation is not of much interest to the average reader. But splenectomy as a therapeutic agent is of great importance to every practitioner of medicine. The reasons for splenectomy and the indications for splenectomy are set forth beautifully by Dr. Mayo in his discussion of the "splenic syndrome."

"The spleen," says Dr. Mayo, "is concerned with the purification of the blood, and is one of the agents whereby worn-out red blood cells and infectious or toxic material of various kinds are filtered from the blood stream to the liver, which is the great detoxicating organ of the body." Continuing along the same lines he adds that "the function of the spleen and the pathological misfortunes which it sponsors concern chiefly the blood stream." Not that the spleen is the principal agent, but it is "rather an agent of destruction through which the damage is brought about." Then with characteristic conservatism, after relating the brilliant results of splenectomy in such conditions as splenic anaemia, pernicious anaemia, primary polycythemia, and splenomegalous leukemia, he concludes with the following remarks: "Even when splenectomy results in alleviation of symptoms or in cure, we are by no means convinced that the spleen was the cause of the ailment." We are only sure that by removing it we have eliminated an organ of destruction, or perhaps broken a vicious circle. Twenty-one other excellent contributions are included in this number.

Volume 1, Number 6 (New York Number). Published Bi-Monthly by the W. B. Saunders Co., Phila. and London, December, 1921. Paper, price per year, \$12.00 (six numbers).

The contributions to this number conform to the usual high character of the surgery practised in New York City. Excellent articles and interesting cases are presented by Drs. Seward Erdman, Downes, John G. Moorhead, Abraham Wilensky, Harold Neuhoff, and a few others. The outstanding feature of this issue, however, is the clinic of Dr. Howard Lilienthal, at the Mt. Sinai Hospital on thoracic surgery. In spite of a very extensive literature on thoracic surgery, it may be frankly admitted that progress in this department of surgery has been very slow and limited. And it is only due to the efforts of such pioneers as Dr. Lilienthal and a few others in this country that definite advances have been made in the treatment of suppurative diseases of the chest particularly. He opens the chest widely, exposes the organs and subjects them to a thorough exploration. Fear pneumothorax? Not he! With the organs in perfect view and the pathology thoroughly defined he treats the conditions in a thorough and most up to date manner.

While such practice may appear extreme and ultra radical it is only fair to say that he resorts to such radical measures only in cases where all other means of a conservative nature have failed. It is to be hoped, however, that the surgery of the chest will develop to such an extent that the invasion of the chest and the operative results will be as safe and as productive of cures as those of the surgery of the abdominal cavity.

HERMAN SHANN.

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THE SEQUELÆ OF EPIDEMIC ENCEPHALITIS.*

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A WHOLE lustrum has now passed since encephalitis became epidemic. During that period clinicians have had manifold opportunities of becoming familiar with the disease in its protean forms. Recently, observers in all countries have been interested in analyzing their cases with a view of forming judgments concerning the nature, the severity, and the transitoriness or permanence of the various sequels of the disease that have been encountered. The literature on the subject has now become so large as to preclude any satisfactory review of it in a short paper. Instead of attempting to trace historically the development of our knowledge of the sequelæ of epidemic encephalitis, I shall, therefore, be content with summarizing the main facts regarding these sequelæ. In this summary, I shall emphasize those points gained from the bibliography and from personal observation that seem to me of the greatest importance and interest to the general practitioner.

By a sequel is usually meant a morbid condition or a symptom that follows upon some pre-existent disease. Thus, valvular heart disease in one of the sequels of rheumatic fever and acute nephritis is a common sequel of scarlet fever. It is somewhat difficult, however, sharply to separate sequelæ that appear as more or less new phenomena some time after the original disease has run its course from conditions in which symptoms that may have been present during the acute process have persisted as residuals for a long time afterwards. With your consent I shall use the term sequel in the broader sense so as to include both groups of conditions; for the more we study epidemic encephalitis (or neuraxitis), the more clearly we see that certain syndromes may appear either as a part of the main symptomatology of the disease during its height or as sequels that do not appear until weeks or months after the acute process has subsided. In the latter case, some doubt has been expressed as to whether in the new syn-

dromes we have to deal with true after-effects of pathological conditions that developed during the primary disease, or, instead, with a chronic exacerbating process, the late sequels then really being due to relapses. We now know with certainty that the disease is not always over in a few weeks, for we have definite evidence that subacute and chronic forms of epidemic neuraxitis exist. Autopsies have revealed, in cases when death occurred after two or more years of illness, the signs of inflammatory foci of different ages within the central nervous system.

FREQUENCY OF SEQUELS AND OF RESIDUAL PHENOMENA.

In the early stages of the epidemic, it was believed that, of the patients who did not die, the majority would recover completely; but longer experience has totally changed this view. Statistics based upon careful follow-up work have already indicated that complete recovery is the exception rather than the rule (M. Grossman). A very large proportion of the patients, perhaps 75 per cent of them, exhibit residual phenomena that are more or less serious, or manifest, sooner or later, one or another variety of troublesome sequel. In the light of our present knowledge, therefore, a guarded prognosis should always be given, even in what appear to be very mild cases, for not infrequently serious sequelæ have appeared in patients in whom the primary process seemed to be relatively insignificant. Indeed, in many instances at the time of the primary infection a diagnosis of epidemic encephalitis can not with certainty be made, and yet in many of these a positive diagnosis can with definiteness be later retrospectively made, after certain characteristic sequelæ have become manifest, a point that has been emphasized especially by H. Roger of Marseilles.

VARIETIES OF SEQUELS AND OF RESIDUAL PHENOMENA.

Though in epidemic neuraxitis the virus shows evidence of a special predilection for certain sites within the central nervous system, the predominance of injury at a given site accounting for one of the characteristic clinical syndromes, still it is well known that the inflammatory process

* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 18, 1922.

may be so disseminated throughout the whole central nervous system as to involve many areas at different levels, giving rise correspondingly to a successive series, or to a combination, of these syndromes. Because of the existence of multiple foci in the primary process, and of the fact that focus after focus may be attacked in subacute and chronic processes, it is not surprising that a great variety of post-encephalitic syndromes have come to observation and description. In motor domains they include both hypokinetic phenomena (pareses, paralyses), and hyperkinetic phenomena (myoclonic, choreatic, athetotic, convulsive). Extra-pyramidal motor disturbances also, have been especially prevalent. In sensory domains, anesthetic, hyperesthetic and paresthetic syndromes have been observed. Disturbances of co-ordination (ataxia, asynergy) have not been uncommon. Further, many autonomic disturbances (vasomotor, secretory, trophic, respiratory, circulatory, digestive, nutritional) have been described as sequels. Perhaps most common of all the sequelæ have been certain post-encephalitic disturbances of the psyche in the form of characteristic cognitive, affective, or conative disorders.

POST-ENCEPHALITIC PARALYSES.

Though the cerebral nerve palsies, especially the ophthalmoplegias, of acute stages of the disease, often clear up entirely, now and then a patient does not fully recover, but suffers from a permanent defect, say in the form of a squint, of a facial paralysis, or of a glosso-paresis. Accommodation-paralysis is common, both as a residual and as a late sequel. The finding of an anisocoria, or of an Argyll-Robertson pupil, in a doubtful case should, if syphilis can be excluded, excite the suspicion of a pre-existent encephalitis. Hemiplegias, spastic diplegias or aphasias frequently disappear during the weeks following the acute attack, but, unfortunately, in at least some of the cases, the paralyses are permanent. I recall a boy from Texas, who suffered from a temporary facial paralysis that cleared up, and who then, a year later, suffered from an attack of hemiplegia. Though we could not bring the absolute proof, we were of the opinion that both palsies were parts of a relapsing encephalitis. I have seen also several cases of the poliomyelitic form of epidemic neuraxitis in which the lower motor neuron paralyses persisted in part, in association with other residues (myoclonic, asthenic). Good descriptions of the ventral poliomyelitic syndromes will be found in H. A. Riley's article on the spinal forms of epidemic encephalitis (1921).

HYPERKINETIC RESIDUALS AND SEQUELS.

Among the commoner residuals and sequels are certain hyperkinetic syndromes (tremors, fascicular twitchings, myoclonias, choreatic and

athetotic disturbances, convulsive seizures). These are usually ascribed to "motor irritation," but in some instances they are doubtless due to lesions of certain neurones that normally inhibit such movements. Hyperkineses of the several varieties described have been, as every one knows, very commonly observed during the acute process, indeed, certain epidemics have been especially characterized by their prevalence. The abnormal phenomena usually cease gradually during convalescence. In some patients, however, choreatic, athetotic or myoclonic disturbances of motility have persisted as long-lasting residuals, and, in a certain number of cases, they have appeared as late phenomena of a novel sort, whether due, as I have said, to recrudescences with localization at new sites, or to changes resulting from primary lesions (true after-effects) we do not yet certainly know. Farquhar Buzzard and also F. M. R. Walshe of London have reported cases that prove that these post-encephalitic involuntary movements have been observed also in English practice. Strange combinations of hyperkinetic phenomena have sometimes been met with. Thus myoclonic contractions may occur in one half of the body and a coarse tremor in the other half (H. Meige), or a left-sided facial paralysis associated with clonic movements in the paretic muscles may be combined with a crossed paresis and clonus in the right arm—a variety of alternans syndrome (Bourges, Marcandier & Arthur). In a patient described by A. Polon of New York, peculiar abnormal rhythmical involuntary choreo-athetoid movements were limited exclusively to the left lower limb.

The clonic and tonic spasms that appear as sequels of epidemic neuraxitis are very rebellious to treatment. I remember one woman in middle life who had violent contractions of the face muscles (which kept her eyes closed) and also more or less rhythmical movements of the jaws, with grinding of the teeth. When I first saw the patient, I hoped that she might be suffering merely from a functional disturbance, but observation and treatment over several months convinced me that we were dealing with an organic process, probably a sequel of encephalitis. Similar cases have been recorded in the literature. Among them may be mentioned a case described by P. Bassoe, that of a switchman who had persistent disturbance of innervation of the muscles of the face and jaw; he exhibited twisting movements of the jaw and would sometimes bite his cheek. He kept his teeth together when talking and would frequently grind his teeth.

POST-ENCEPHALITIC EXTRAPYRAMIDAL MOTOR DISTURBANCES.

One of the most striking of the post-encephalitic pictures is the Parkinson-like syndrome that may develop at any time within a year or more

after the onset of the acute process. A patient reported by G. A. Blakeslee of New York developed his post-encephalitic Parkinsonian syndrome as late as two years after the primary disease. This Parkinson-like sequel is no respecter of sex or of age. It occurs with equal frequency in males and females. Cases are met with in infancy, in childhood, in adolescence, and in later life, the post-encephalitic Parkinsonian syndrome thus differing from ordinary Parkinson's disease that comes on insidiously after middle life. P. Marie and Mlle. Levy of Paris have discussed the points of differentiation between true Parkinson's disease and its post-encephalitic simulator. The post-encephalitic Parkinson-like syndrome develops rapidly, usually in the course of a few days or weeks, though in some cases progression of symptoms may be observed for months. General muscular rigidity, mask-like facies, and poverty of movements characterize the clinical picture. Often there is no associated tremor. In other cases, there may be a typical Parkinsonian pill-rolling tremor without much associated rigidity. In still other cases, both tremor and rigidity are present. In Indianapolis last month, Dr. C. P. Emerson showed me a patient, a young medical student, who suffered from a marked Parkinsonian tremor limited to the right arm. Similar monobrachial forms of the post-encephalitic Parkinsonian syndrome have been described by P. Marie and Mlle. Levy.

Fortunately, many of these syndromes resembling Parkinson's disease disappear in the course of a few weeks or months. In the cases of a certain number, however, the condition is permanent. Though one may assure his patient that many recover completely, the prognosis should be somewhat guarded in view of the fact that not all get well.

The frequency of the Parkinson-like syndrome as a post-encephalitic sequel is doubtless due to the predilection of the virus for the corpus striatum, especially the globus pallidus. That this sequel has been common in New York is evident from the observations of Tilney and Howe, and in Chicago, according to P. Bassoe, this syndrome has also been repeatedly met with. We have observed a number of such cases in Baltimore. Indeed, reports from all countries herald the prevalence of this interesting sequel.

Other extrapyramidal motor disturbances have been met with as sequels of encephalitis. Syndromes resembling typical Wilson's disease, for example, have been reported, but these are far less common than the Parkinson-like syndrome.

ATAXIC AND ASYNERGIC SEQUELÆ

After epidemic encephalitis one sees, occasionally, patients who present syndromes suggestive of tabes dorsalis (loss of knee-jerks; bathyesthesia; ataxic gait; Argyll-Robertson pupil), though the history is entirely negative for syphilis

and the Wassermann reaction is found to be negative in both the blood and the cerebrospinal fluid. Other patients may present the signs of cerebellar asynergy, doubtless owing to lesions of the cerebellum or of the cerebellar conduction-paths. These ataxic and asynergic syndromes are, however, relatively rare as sequels of epidemic neuraxitis. When they are met with, they may be the cause of temporary difficulty in etiological diagnosis.

SENSORY SEQUELS.

All who have worked with epidemic encephalitis have been impressed with the fact that both in the symptomatology of the disease proper and in that of its sequelæ sensory abnormalities, if we exclude the neuralgic pains, have been relatively rare. Radicular anesthetics, hemi-anesthetics, hemianopsias, amblyopias, hypoacusias, or vertigos have, however, been occasionally met with and, in a few instances, have been the dominant feature of the clinical picture. Optic atrophy seems to be a very uncommon sequel though Boyd has observed two cases.

In one patient, a Baltimore physician whom I saw in consultation, an unbearable feeling of heat was complained of. During the examination, in cold winter weather, he insisted on having the windows wide open though he was undressed and covered only with an examining sheet.

The algias of various sorts that are so extremely common in the acute stages of the disease have often been mistaken, at first, for symptoms of rheumatism, arthritis, or visceral disease. Similarly, the severe neuralgias and violent cephalalgias that are common residuals or sequels of epidemic encephalitis, pestering the patients for weeks and months after the main process has died down, have been a common cause of mistakes in diagnosis among general practitioners who have had but little opportunity to become familiar with the variegated symptomatology of this remarkable malady.

AUTONOMIC SEQUELS.

It is surprising how frequently autonomic symptoms and signs are demonstrable over long periods after apparent recovery from epidemic encephalitis.

Particularly common are certain pupillary and ciliary disturbances (myosis, mydriasis, sluggish or abolished light-reaction, accommodation spasm, or accommodation paralysis).

Sialorrhea with constant spitting is frequently met with. Xerostomia is less common, though a case has been reported by R. Bing of Basel.

In the respiratory system, peculiar disturbances (such as tachypnea, irregular respiration, paroxysms of deep breathing) are occasionally seen. Aronson of New York has recently reported an average respiration rate of 45 per minute (tachy-

respiria) in a boy of eight, coming on some weeks after an attack of encephalitis. In one patient, a young man from Asheville, North Carolina, Dr. Sprunt and I observed frequent paroxysms of hyperpnea, in one of which an attack of tetany occurred.

In the circulatory system, symptoms of disturbances of autonomic innervation are seen in the tachycardias, the bradycardias, and the remarkable erythemas; they are not uncommon in post-encephalitic syndromes (J. Heitz).

In the digestive apparatus, too, enterospasm, an abdominal distention like that of paralytic ileus, and anal sphincter spasm may be encountered as post-encephalitic phenomena.

In the urogenital system, retention of urine is sometimes a troublesome symptom, complained of long after the encephalitis has subsided. Another sequel sometimes met with is enuresis nocturna. Many patients have complained of loss of sexual libido or of potentia after encephalitis.

In the skin, paroxysmal sweating, unilateral anhidrosis, and paroxysms of local vasoconstriction or vasodilatation have been frequent.

Of the nutritional disturbances reported, a rapidly developing obesity seems to be the most common. This has been ascribed by Livet, Nové-court and others to hypophyseal involvement. In one patient, we observed a transitory glycosuria that developed during convalescence from epidemic encephalitis, though we could not be sure of course whether it was due to the disease or was an accidental accompaniment.

PSYCHOTIC AND PSYCHONEUROTIC SEQUELS.

The earlier studies of epidemic encephalitis emphasized the various neurological syndromes that appear, but neglected somewhat the psychotic and the psychoneurotic phenomena. More recently, however, trained psychiatrists have turned their attention not only to the psychotic manifestations of the height of the disease but, and particularly, to certain common psychotic residuals and sequels. Last year the papers in this country by Abrahamson, by Archambault, by Jones and Raphael, and by Kirby and Davis, threw much light upon the mental phenomena of the disease.

The mental disturbances in acute neuraxitis are those of the acute organic types of mental reaction of the character that are described by psychiatrists as "toxic-infectious psychoses." The psychic torpor and the delirium of the acute stages of the disease are now well known to all. Occasionally, an acute Korsakoff's syndrome (with its characteristic amnesic-confabulatory complex) has been met with. Last month with Dr. Follis and Dr. Van Bibber I saw a patient, an elderly woman, who had developed such a syndrome a few weeks after a febrile disturbance

that was followed by radicular neuralgias and drowsiness. In many patients affective disorders and trend reactions color the clinical picture. To some of the commoner mental sequels I desire especially to refer.

Asthenic States.—The commonest symptomatic residue of epidemic encephalitis is a state of profound asthenia. This may continue for weeks or for months after the acute stage of the disease has passed. The patients complain of tiring easily, of inability to concentrate, of headache, of digestive disturbances, of lack of endurance, of irritability, and, often, of loss of their natural interests. These symptoms are usually very persistent, despite the most careful treatment by rest and measures directed toward general upbuilding. Boyd of Winnipeg who has observed many of these asthenic cases believes that the asthenia is the result of the general systemic infection with special localization in the central nervous system and is comparable with that following influenza and typhoid fever.

Disorders of Sleep.—Drowsiness may persist well into the convalescent period, but as a sequel insomnia is more common. Many have observed and reported a reversal of the sleep cycle; the patients can sleep during the day but are wide awake and restless during the night.

Mental Deterioration.—One of the saddest of the sequels of epidemic encephalitis, especially in children, is mental deficiency. Unfortunately, a considerable proportion of the children attacked are rendered permanently deficient. All grades of this deficiency from outspoken idiocy to slight mental backwardness have been observed in this country and Paterson and Spence report similar experiences in England.

Even in adults deterioration with loss of memory and defective judgment may occur. Some of the adults thus stricken have been supposed to be suffering from general paresis, or from arteriosclerotic dementia, before a careful study of the history has revealed an onset with signs of infection, and an analysis of the mode of development with a thorough physical and neuro-psychiatric examination (with studies of the blood and of the cerebrospinal fluid) have cleared up the diagnosis.

Affective Disorders.—Disturbances of mood are very common as residuals or as sequels of epidemic encephalitis. Depressive reactions are in my experience more common than manic reactions, though both occur. The depression differs somewhat from that of a typical manic-depressive psychosis in that there is as a rule less psychomotor retardation and the changes of mood are more rapid. If a Parkinson-like syndrome be also present, the appearance of apathy and depression is accentuated.

A few patients, as I have said, have exhibited a post-encephalitic manic reaction, with excitement, elation, pressure of activity, excessive

laughter and erotic manifestations. It is now becoming evident that some encephalitic patients have been permanently injured in affective domains. Fortunately, however, a fair proportion of those who have manifested affective disorders as sequels have recovered, or seem to be recovering.

Disturbances of Behavior.—Peculiarities of conduct are often observable in patients with psychotic sequels. In children, especially, the whole character seems sometimes to be changed. Happ and Blackfan of Baltimore have recorded interesting case reports of some of these children manifesting altered behavior, and Leahy and Sands, of Bellevue Hospital, New York, have described similar conduct disorders. A child previously docile may become quarrelsome and stubborn. Extreme spitting habits manifested by some of these children are, perhaps, associated with a sialorrheal complication. In both children and adults, the performance of impulsive acts is not uncommon. In some, there has been evidence of stereotypy, though the behavior of the post-encephalitic psychotic does not usually suggest a schizophrenic trend. I saw recently with Dr. Hohman of the Phipps Psychiatric Clinic a girl of thirteen who, after convalescence from encephalitis, had developed an excessive sexual precocity, and was subject to attacks of anger in which she might become suddenly violent.

In adults, a behavior characterized by motor agitation has been occasionally observable. Such patients may manifest a pressure of activity that reminds one of the maniacal excitement of the manic-depressive psychosis. All movements seem to be easy to the patient and normal inhibitions appear to be removed. This form of behavior, however, is much less common, in my experience, than its opposite, a kind of motor stupor or abulia, in which the motor discharges seem to be interfered with by abnormally intense inhibitory processes.

Many who have studied the psychotic and psychoneurotic manifestations following epidemic encephalitis have been impressed with their aping of various minor and major psychoses with which we are already familiar. This aping of processes hitherto regarded as "functional" by the sequels of a disease in which there are known to be definite and extensive diffuse and focal organic changes within the brain is very suggestive. Many of us have through this been confirmed in our opinion that the distinction between "organic" and "functional" processes is merely one of degree. It would seem probable that every gradation may exist between gross structural alterations that are visible to the naked eye and finer and subtler changes that cannot be recognized, as yet, even on microscopic examination but that may some time be demonstrable as alterations in chemical composition.

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COMMUNICABILITY AND SERUM TREATMENT OF POLIOMYELITIS.*

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THE infectious nature of poliomyelitis became evident from the clinical and epidemiological observations of Wickman (1), but definite proof came from animal experimentation. The transmission experiments of Landsteiner and Popper (2), and Flexner and Lewis (3) are well known. In this paper there will be collected and reviewed certain experimental data relating to the communicability of poliomyelitis.

DISTRIBUTION OF THE VIRUS IN THE HOST

As sources of material for studying the distribution of the virus in the host there are: (a) autopsy material from human cases and monkeys; (b) body fluids obtained from the living human case; and (c) tissues from the monkey sacrificed at any stage of the experimental infection, and human tonsils and adenoids removed surgically.

On account of the parallelism of the human and experimental disease, both in their clinical and pathological aspects, it is believed that influences drawn from experiments with monkeys may be accepted with a certain degree of safety

as applicable to the solution of problems in connection with human cases. Indeed, there is perhaps no other experimental disease which so closely approaches the human analogue.

(a) Inoculations of material obtained at autopsy from the human case and the monkey demonstrate the virus in the following tissues:

1. The brain (3) and cord, especially the medulla, basal ganglia, cervical and lumbar enlargements, posterior root ganglia (4), and their cranial analogues (5).

2. The sympathetic ganglia (5).

3. Nasal and pharyngeal mucosa (6), and tonsils (4).

4. The lymph glands (7).

The virus is not found in the cerebrospinal fluid (4), blood (8), or viscera (9) *post mortem*.

(b) Body fluids:

1. *Cerebrospinal fluid*.—The virus has not been found in the cerebrospinal fluid of the human case at any stage, but in certain experiments on the route of infection, using the monkey as the test animal, the virus was detected in the spinal fluid soon after intravenous injection and nasal application (10).

2. *The Blood*.—The virus has not been found at any stage in the blood in human cases, though in the monkey, on the first day of symptoms, it has been detected when large amounts of blood are inoculated (8) in one instance. After intravenous injection of the virus into the blood, the virus tends to disappear, so that after 120 hours it is no longer present (10).

3. *Nasal Washings*.—Both human and monkey nasal washings contain the virus (11) during the acute stage, and in the latter it has been detected six days before the onset of poliomyelitis (12). It is very much diminished in amount after the first week, but Lucas and Osgood report the presence of the virus in nasal secretions four months after a second attack (13). The definite time of the complete disappearance of the virus has not been determined because of experimental difficulties.

4. *Stools*.—The Swedish observers (11) believe that the virus leaves the body also by way of the intestinal tract. The criteria of the experimental disease which these observers employed do not correspond to those usually accepted, so that there still remains some doubt as to the significance of their results (12).

(c) Tissues from sacrificed monkey and human tonsils and adenoids removed surgically:

1. The distribution of the virus in monkeys varies according to the route of injection and the time elapsing since the injection. Flexner and his co-workers have traced the course of the virus after nasal application through the nasal mucosa, into the olfactory lobes, the cerebrospinal fluid, later to the posterior root ganglia, and finally into the cord and medulla. Subsequently the virus disappears from the spinal fluid and over-

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flows in small amounts into the blood. After intravenous injection, the virus may come through into the spinal fluid, and follow the usual course, provided the meningeal choroidal defense (14) has been overcome. Otherwise the virus tends to disappear from the blood and is anchored in the spleen, bone-marrow and lymph glands.

2. Tonsils (15) and adenoids removed at autopsy from human cases contain the virus, but it is rarely present in these tissues removed on the tenth day or later after the attack (16).

3. Nasal Mucosa of Monkeys.—During the acute stage the virus is found regularly in the nasal mucosa, but after seven days quickly disappears and is rarely found after the tenth day. Lucas and Osgood (17) report the detection of the virus in the nasal mucosa of monkeys five weeks and six and a half months, respectively, after the acute stage. This is to be regarded as exceptional. However, it follows that a small percentage of human cases may harbor the virus over long periods.

ROUTES OF INFECTION

Once the virus is adapted to monkeys, only extremely small amounts are required to produce experimental poliomyelitis by the direct or cerebral route. For example, 0.001 c.c. of a Berkeley filtrate of a five per cent suspension of the central nervous system, *i. e.*, 1/500,000 gram of nervous tissue, suffices.

Slightly larger doses are required by intraocular injection; still larger intraspinally, and large doses intraperitoneally. The virus travels easily in the perineural lymph spaces as shown by response to intrasciatic injection. Subcutaneously, the virus infects only with difficulty, and intravenously extremely large doses may fail. By the latter route infection may be brought about if an aseptic inflammation of the meninges has been provoked previously by the intraspinal injection of foreign protein. Microscopic examination shows a much more severe reaction than is usually found when other routes are employed.

Leiner and von Wiesner (18) have reported the production of experimental poliomyelitis by feeding the virus to monkeys after large doses of morphine had been given, though in our hands this method has failed even when the animals were given the virus every day for forty days. Incidentally, no immunity to intracerebral injection was effected by feeding.

With these facts in mind the natural mode of infection in the human being may be approached. The three possibilities: the nasal, the gastrointestinal, and the subcutaneous or intravenous, will be discussed briefly in the reverse order. The last is apparently eliminated from consideration because of the large doses of the virus required to infect, and on account of the absence of positive data to support the view. The second, or stomachal route, has even less basis, in view of

the extreme difficulty of producing the infection by this means. Furthermore, the virus is very sensitive to external influences and it is difficult to conceive of its ever reaching the host in sufficient quantities to infect by food, water, or milk supply.

The nasal route is now generally accepted (16). The detection of the virus in nasal washings during the incubation period (human case), the ease of infection in the monkey, and the experiments already noted relating to the course of the virus from the nasal mucosa to the cord, all point towards this atrium of infection.

In brief, then, it appears that the virus is propagated in the central nervous tissues of the host, does not survive the external conditions of medication, but by chance is transferred either directly or indirectly from nasal mucosa of the host to nasal mucosa of the susceptible new host.

Because of the extreme difficulty of producing the infection by intravenous injection of very large amounts of the virus, it is probable that the virus goes directly through the nasal mucosa to the olfactory lobes by means of the perineural lymph spaces, and not first into the circulation and then into the meninges.

MECHANISMS OF DEFENSE

The virus, having been transferred to the nasal mucosa of the second human being, may lodge there, remain active (there are no indications that it multiplies), or it may be destroyed. That the latter may happen is shown by experiments on the neutralization of virus by nasal washing (19). In general, the nasal washings of healthy adults, but not of children, neutralize the virus. This power of the nasal secretions to neutralize may, therefore, be regarded as the first line of defense of the human body against the entrance of the virus. If this were the only line of defense, infection or non-infection would be a relatively simple matter. However, there are other obstacles in the way of the virus, so that if the neutralizing power is absent from the nasal secretions, infection may not always result, but the person on whose nasal mucosa the virus falls becomes a carrier. Flexner, Clark and Fraser (20) have detected the virus of poliomyelitis in healthy adults who never showed signs of infection, and the Swedish observers (11) believe that carriage is quite common.

Reference has already been made to the fact that large doses of the virus given intravenously rarely cause infection. If, however, an aseptic inflammation has been provoked in the meninges by the injection of foreign protein intraspinally, much smaller doses intravenously injected are allowed to pass through into the spinal fluid and cause experimental poliomyelitis (14).

Whether this mechanism of defense operates in the human being can be surmised only. The experiment in the monkey is so definite that this

method is employed in making *in vivo* neutralization tests of serums for antibodies active against the poliomyelitis virus (21).

A third mechanism of a decisive nature is the presence of immune bodies in the serum, as shown by neutralization tests. Anderson and Frost (22) noted the presence of immune bodies in the serum of sixty-six per cent of the persons who had been in close contact with poliomyelitis cases but who had not contracted the disease. They suggest the possibility that persons in contact with acute cases may become actively immune.

There are two other factors which may play a supportive role in deciding susceptibility or non-susceptibility: the first is based upon the power of large doses of X-rays to increase the susceptibility of the monkey to experimental poliomyelitis (23); and secondly Zingher (24) has observed a positive Schick test in poliomyelitic children to be twice the expected rate for the same ages among the general population. The last two factors may be regarded as suggestive of minor influences in determining infection or non-infection, once the virus has passed the first barrier.

Since the various defensive measures described above are non-related, the chances of a combination allowing infection, supposing an active virus to be present, would be a function of the percentage product of the three major factors. No data have been collected on the relative occurrence of any of these factors in samples of population, but it is reasonable to suppose that eventually the low susceptibility rate may be better understood. In the large epidemic of 1916 the virus had abundant opportunity for general distribution, and it is conceivable that the majority of persons in the areas of dense population were exposed. Yet the attack rate in New York City (25) was only 1.59 per thousand of the total population. Of all the cases ninety-seven per cent occurred in persons under the age of sixteen. The attack rate per 1,000 population under 10 years was 18, and among those over ten was .23.

CARRIERS

The definite seasonal distribution of poliomyelitis, with some exceptions, and the experimental data supporting the view that the virus does not survive long outside the host, suggest the recovered case or the carrier as the inter-epidemic reservoir of the virus. The rapid disappearance of the virus from the nasopharynx as the acute stage passes, and coincident with the development of immune bodies in the blood, controverts the idea that the recovered case harbors the virus during the interim. However, the observation of Lucas and Osgood, *viz.*: finding the virus in the nasopharynx of the monkey five weeks and six and a half months after onset is not to be disregarded. In experiments with monkeys, we have shown

that the virus applied to the nasal mucosa of monkeys which had been passively immunized quickly disappears without causing experimental poliomyelitis, whereas in the normal monkey, the virus persists. Therefore, all things considered, it seems that the virus has a greater chance of surviving in the nasal secretions of the carrier than in the recovered case. In the former there are only local agencies for combating the virus, whereas in the latter all the agencies of the body may react for defense.

In spite of the very obvious experimental difficulties in detecting carriers, healthy carriers have been demonstrated (11, 20).

COMMUNICABILITY

The virus of poliomyelitis enters the central nervous system by way of the nasopharynx, multiplies, and leaves the body by the same route. In the recovered cases the virus probably disappears, except in rare instances, within ten days to two weeks after the acute attack. Healthy carriers have been demonstrated.

Field observations lead the author to believe that only slight contact between the carrier of the virus (case, healthy carrier, or person in the incubation period, and the *susceptible* person suffices for the transfer of the virus. In this respect, and also in the fact that the virus is present in the nasal washings of the person at least six days before onset, poliomyelitis resembles measles.

The stage of communicability, then, is from six days before to ten days after the onset—roughly speaking, from one week before to two weeks after. This presents difficulties from the standpoint of prevention.

PREVENTION

The use of convalescent human serum as a prophylactic measure is impractical because of the difficulty and expense involved. Since the susceptible rate is very low and there are no means of detecting the susceptible persons, the method is wasteful.

Vaccination with altered or changed virus; as in the Pasteur treatment, has been tried experimentally in monkeys without success. Moreover, there is an element of danger in such a method.

It is apparent from epidemiological studies that the susceptibility decreases as the child grows older, so that the only promising method of prevention is isolation until the age of relative non-susceptibility arrives. In Vermont the State Board of Health has adopted the following plan with a considerable degree of success. The patient and intimate contacts are quarantined for three weeks. A search is made for all persons, especially children, who have been associated with the patient for the previous week. These families are then visited by a representative who discusses the danger of repeated exposure. Thus children who

may be in the incubation period are voluntarily quarantined for two weeks.

SERUM TREATMENT

The basis of serum treatment rests upon the observation of Römer and Josephs (26) that immune bodies are present in the blood of recovered cases. In the experiments of Flexner and Lewis (27), the injection of such serum delays and may prevent altogether the development of paralysis in monkeys previously inoculated with the virus. Netter (28) was the first to treat human cases. Since the lesion is tucked away in the most remote and inaccessible part of the body the treatment becomes a difficult and almost insurmountable task.

THE SERUM

In the absence of any immune animal serum, recourse must be had to convalescent serum which is obviously weak in antibody content when compared with hyperimmune serum such as is employed in the treatment of meningitis.

Serum from recently recovered cases is recommended, as it is presumed to have a greater antibody content. The serum for intraspinal injection should be free of particles and hemoglobin.

AMOUNT INJECTED

Since at best only weakly immune serum is available, correspondingly larger amounts of serum must be given. Obviously the amount of serum which can be injected intraspinally is limited, and Draper (29) has called attention to the severe reactions which follow the intraspinal injection of large amounts. On account of this limitation and for other reasons about to be described, we have used the combined route of intraspinal and intravenous injections. Flexner and Amoss (30) found that poliomyelitis antibodies in the blood would pass into the spinal fluid if the meninges were inflamed, and Amoss and Ebersson (31) showed that the disappearance of antibodies from the spinal fluid in meningitis proceeds at a slower rate if immune serum is also injected intravenously.

We have, therefore, administered 15 to 30 c.c. intraspinally, and 100 to 200 c.c. intravenously (32). The treatment is repeated after twelve hours in severe cases.

The results of several observers are suggestive, but Peabody (33) is inclined to believe that no good case is made out for serum. Since it is common knowledge that the virulence of outbreaks varies considerably, comparisons should be made only with untreated controls in the same epidemic.

Draper, who has had a wide experience in poliomyelitis, believes that a cell count in the spinal fluid above 100 forebodes the more serious type of the disease. In our series, there were several cases of this kind in which the cell count was

high responding favorably to serum treatment. Our results, when analyzed, show definitely that the progress of the disease is arrested in cases treated within forty-eight hours after onset and with more than 50 c.c. of serum. We believe that the remainder of this series may serve as partial controls. These results were obtained in the severe epidemic of 1916, and in Vermont similar results were obtained by Taylor.

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VASOLIGATURE AND STEINACH'S INVESTIGATIONS.*

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PROFESSOR EUGEN STEINACH of Vienna, more than any other scientist, has studied the characteristics of age revealed in the gross and microscopic structure of the sex-glands accompanying the usual well-known exterior appearances of this period of existence. Steinach demonstrated in animal experiments and investigations that the condition of the senile sex glands of the prematurely or normally aged resembles that of the rudimentary development of same prior to adolescence (Figs. I and VIII), and also to that of the animal which had grown up as an early castrate (Fig. III). He, therefore, accentuates as an important observation that hypoplasia or under development of the internal genitalia was the same in youth prior



FIGURE I

Young male animal, 4 weeks old, about one-half body size. External and internal genitalia undeveloped.

to puberty, in age as part of senile retrograde change and in the castrate on account of inhibition artificially produced (Figs. III, VI, VII).

To diverge to the domain of endocrinology we find here that the internal organs not only exercise their recognized active function (*i. e.*, the production of organic or chemical excretory substances that pass out of the system) but also contribute internal secretions, hormones, which, entering the blood, exert a stimulating, suppressing or otherwise modifying influence on certain other organs, or upon the entire system. Such interrelations between organs and their secretions are more or less familiar in the case of the thyroids, the adrenals and the hypophysis. It is a complex relationship and there is much concerning thereof that is shadowy and obscure. But it is at least conceded that the hormones of one may affect the growth, the secretion and the potency of another organ; moreover there exists

a pluriglandular influence that may extend to one organ or to the system in general.

We are familiar with the histological differentiation between the cortex and medulla composition of the various internal organs, each possessing a selective function in the division of labor for the conduct of the economy of the particular organ. It is further well known that in one anatomical organ there may be, as in the case of the hypophysis, three integral portions, anterior, posterior and infundibulum, each performing its separate service in the daily balance of the body metabolism and in the constructive development of the normal organism. Likewise in the generative glands of both sexes there exists on the one hand the germinal or generative and on the other the interstitial subdivisions. In the former develop the generative cells from an embryonic to the mature state, namely, ovum and spermatozoon. This knowledge of the intrinsic function of the organs in question is elementary and is mentioned only in contradistinction from the more obscure function attributed to the interstitial glandular composition. The so-called interstitial body of the sex glands has received increasing notice of late years. To early French writers (1903)* has been ascribed the discovery of the cells composing the so-called interstitial gland portion of the ovaries and testicles. But it was Steinach who, in 1912,† reported the results of his observations based upon animal experimentation demonstrating the function of the interstitial cells of these organs and their important relationship to the development of the individual. Steinach has applied to this interstitial structure the name of puberty gland.

It is now generally believed that these interstitial cells of the reproductive glands perform a function apart from that of supplying the essential generative microplasm, in the production of an internal secretion consisting of hormones which exert an important influence upon the system in general and more particularly dominate the masculine or feminine sexual attributes. The graphic demonstration of the foregoing discovery is viewed in Steinach's animal experiments that are not the result of hasty or incomplete observations but the outcome of painstaking study of numerous cases. For various reasons the animals employed for experimentation are the common domestic rodents. The concrete facts summarized are illustrated as follows: (1) Masculinizing an early female castrate by transplanting the testicles of a male of same species. (2) Feminizing the young male castrate by transplanting the ovaries within abdominal wall from females of same species. The inverted sex attributes in these experiments were evidenced in the developmental growth of the animals ob-

* Read at the regular meeting of the Medical Society of the County of New York, at New York City, April 24, 1922.

* Bouin and Ancell.

† Eugen Steinach, 5, XII, 1912, *Wien*.

served. That is, the bony structure assumed the character of the inverted sex and the sexual proclivity was likewise transposed. In some instances this sex inversion was most pronounced in which instance the feminized males had their mammary gland developed yielding milk secretion and were enabled to nourish young animals.

Thus is demonstrated by gross observation the specific effect of the heterogeneous transplanted sex gland. Histological examination of the transplant, after the lapse of some time, reveals complete atrophy of the generative glandular portion, but the interstitial elements remain intact and even become proliferated. Steinach noted the existence of a relation between the extent of the proliferated gland substance and the degree of secondary sex characteristics engendered. This subject of cross sex transplantation enters a field that is entirely apart from that which is intended to be discussed here, but it is a kindred topic and has a material bearing thereupon, in that it illus-



FIGURE II

Normal male, full grown animal, 1 year old. Internal genitalia fully developed. Other characteristics normal.

trates two important points: one, the existence in histological composition of the sex glands of an interstitial structure independent of the germinal organism; and second, selective potential influence exerted by this interstitial substance even though transplanted away from its normal habitat and in an animal of opposite sex. This selective action of the grafted interstitial gland is consistently reproduced by homogeneous sex transplant. In this case is demonstrated the male animal who has reached full growth following successful transplantation of testicles in early life (Figs. IV and V). A comparison of this subject with that of a control animal, *viz.*, a fully grown early castrate, non homo-transplanted, shows a striking difference in development (Fig. III). In the one that was the subject of transplantation we find completed normal development, notably in the sexual organs equal to that of a naturally full grown animal (Fig. II). While on the other hand the full grown castrate reveals the retarding effect sustained in the loss of the interstitial gland sub-

stance and contributing hormones. Here the structural characters resemble closely those of the rudimentary state prior to puberty and also to that in the senile state (Figs. I and VIII). These experiments are paralleled in female animals in Steinach's investigations but will not be dwelt



FIGURE III

Early castrate (at age of 4 weeks), 1 year old. Internal genitalia infantile or somewhat retrograde. Removal of gonads suspends the development of sex characteristics.

upon at this time. As previously hinted the study of transplantation, animal and human, homo and hetero, embraces an expansive field much of which is yet to be traversed. The success attained in agriculture and horticulture is not devoid of meaning to this allied branch of biological science in the probable revelations of the future.

The concrete fact elicited from the foregoing evidence is that the interstitial structure of the testis furnishes an internal secretion that reacts favorably at least upon the other glands of the same system, promoting their growth and vitality, as well as affording hormones to the system in general. If this is the case the query natural-



FIGURE IV

Grafted animal, 10 months old. Transplantation of testes when 4 weeks old. Existence of gonadal influence demonstrated in body development, physical and temperamental, namely: alertness, combativeness and potency.

ly arises whether it is possible to retard the decrease of such hormones at an age when prematurely or naturally the interstitial gland has undergone retrograde metamorphosis. Steinach points to his animal experiments for an answer to this

question which have demonstrated the reality of restored functional vitality of these glands attendant upon their active proliferation. This proliferation which, as shown, follows homo-transplantation Steinach discovered may also follow ligation of the vasa deferentia. These results are also demonstrated by animal experiments and confirmed by post-mortem investigation thereafter (Fig IX). The operation of vasoligature while it sterilizes, causing atrophy of the generative cells, produces a compensatory proliferation of the interstitial portion of the gland and when performed unilaterally, in the prematurely senile, the opposite organ may become reawakened and functionate. In such an event the subject is not sterile.

The beneficial effect derived from this so-named rejuvenating agency is observed to operate both locally and generally. The genital organs, which reveal the local effect of proliferation, by improved development and restored activity. This change alone would indicate a



FIGURE V

Same as No. IV, 15 months old. Microscopic examination reveals similar histological features in both.

purely local influence. Of greater importance is the noteworthy systemic effect as seen in general constitutional improvement and revealed by temperament, weight, condition of coat and principally in the prolongation of animal existence.

The practical deductions from these animal experiments are applied to the human subject, and herein lies their significance.

It might properly be inquired at this moment, by virtue of what qualification is the writer entitled to participate in a discussion of this subject. Not because of a profound study of the science of biology or a special knowledge of the endocrines, but only on account of the advantage of opportunities afforded by personal experience.

My interest was first aroused upon the publication of Steinach's investigations on the subject of *rejuvenation*, by the announcement that the operation of vasoligature was performed *for this purpose*. And more especially because for many years I had been an exponent of this identical technique as a surgical expedient for certain other

indications. I found a thesis on this procedure, written by me some twenty years ago; other articles followed, and the method is referred to in the first, second and third editions of my text book. At no time, however, had there been in mind any thought of the possibility of rejuvenation, or any knowledge of histological changes in the testicles that occurred as a result of this operation. Before investigating the subject as thoroughly as has since been my endeavor, it occurred to me that it might be of interest and proper to search the case records and look up the patients who had been submitted to operation at my hands. This has been accomplished as far as possible. Some of the patients cannot be traced; some were at an age that cannot be included consistently in a discussion of *senium præcox*. There is, however, a sufficient number of cases to elicit attention, and to serve as a contribution to the present discussion. From these I have selected four cases, because of the absence from their histories of features that would to an extent obscure the situation; that is to say, they were not submitted to prostatectomy, which is frequently coincident with vasoligature in reported cases, nor was there any other operation of major importance, convalescence from which could be credited with striking constitutional improvement. There were a number of others in which vasectomy was an accompaniment of prostatectomy, but as stated attention has been called by various writers to the symptoms of regeneration and general physical betterment following the latter operation, raising the question whether or not the causative factor of the resulting favorable condition is the same in both of these procedures. These cases, therefore, will not be included here.

The histories of the selected cases are as follows: Case I. W. S.; age 70. Immediate complaint, relapsing epididymo-orchitis, generally induced by catheterism, necessitated on account of irregular attacks of complete retention of urine, due to prostatic obstruction. It was not deemed expedient to undertake prostatectomy in one or two stages, on account of the patient's exceedingly poor general condition; and yet catheterism was imperative. Double vasectomy was resorted to, to meet the testicular complication. Following this procedure, there was a slow but progressive convalescence. Under regular catheterism the cystitis subsided and prostatic congestion disappeared to such an extent that eventually the catheter was dispensed with, and complete voluntary urination returned. This functioning capacity has remained in force ever since.

Case II. J. P.; age 69. This patient has been treated for a number of years for chronic prostatorrhœa and spermato-cystitis. He had been a widower for several years and there was an almost constant leakage of semen, which was copiously present in the urine. The patient's general condition was that of a pronounced neurasthenia.

thenic, accompanied with various neurotic fancies and physical depreciation. Double vasectomy was finally determined upon, and the result therefrom was thoroughly satisfactory. The main fact to be noted thereafter was that the patient ceased to be a constant visitor, evidently having found physical repose.

Case III. A. W. S.; age 83. This patient was brought to me with marked dysuria and urinary retention, a part of the usual syndrome of prostatism, complicated by epididymitis with a relapsing tendency. The patient's condition and age were such as to render the major operation of prostatectomy unacceptable. Double vasectomy was performed, and the patient was enabled to return to his home, away from New York, in a state of general health as satisfactory as might reasonably be expected at his time of life.

Case IV. H. D. L.; age 55. Nocturnal enuresis of residual overflow caused by prostatic obstruction, there being upon examination 32 ounces of retention after 2 ounces voluntary urination. No cystitis; no evidence upon which to suspect "cord bladder." The prostate upon palpation is distinctly congestive. The urethra will receive a full size sound. Under observation voluntary urination varies from 2 to 6 ounces and the residuum from 12 to 19 ounces. After 6 months treatment with little improvement, vasoligature is resorted to. Following operation complete retention occurs and catheterism is necessary, but shortly thereafter voluntary urination returns and the patient is able to empty bladder almost completely.

The latest reports of the general condition of health of the foregoing cases were obtainable and are here contrasted with their condition previous to the vasoligature operation: Case I. Patient with chronic retention, had been practically bedridden for the greater portion of a year. He was the picture of a decrepit and aged individual, whose friends and family had considered him in a state of serious decline. This was three years ago. Today, at the age of 73, he is the picture of robust health, has increased in weight, and attends daily to a business routine of exacting demands.

Case II, that of chronic spermatorrhœa, reports in a letter that his condition is all that can be expected of a man 75 years of age and that his present state of health dates from the time after his operation, six years ago.

Case III. This patient was so old at the time of operation, I had serious doubts as to the probability of his present existence, especially as I had received no communication from him from the time of his operation to the date of my inquiry. Therefore, I sought information from his medical adviser, asking how long the patient had been dead! "Dead," said he, "He went down South the other day to celebrate his 92nd birthday!"

Case IV is a recent one too soon to report definitely upon the general physical condition. The patient is one that might be classed as prematurely old at 55 years. The bladder after functioning defectively for 2 years to the extent of approximately complete retention, has already resumed almost normal action.

Lichtenstern, Vienna, 1921, reports his experience of 3 years with results of ligating the vas deferens in man upon the basis of Steinach's experiments. He epitomizes this experience in the statement that "vasoligature is followed by the disappearance, for a period of years, of individual manifestations of old age, although the percentage of cases in which such favorable results are obtainable has not yet been determined." What is very much to the point, this author endeavors not only to clarify the favorable results which follow the operation, but also to determine whether the latter can in any way injure the aging organism of the patient. For already the fear has been expressed by several observers that



FIGURE VI

Grafted animal, 15 months old. Transplanted testes removed, after full physical development, 1 month before animal is killed. Retrograde change in the sexual characteristics follows the lost gonadal influence.

a sudden excitation of endocrine functions, leading to transitory recuperation of the organism, can only be followed by the sudden decline of the same. Lichtenstern bases his conclusions upon an observation of twenty personal cases. The ages of these patients ranged from 43 to 71 years.

The apprehension of aggravating an existing condition, he states, has vanished as a result of these studies. The favorable results were observed in certain objective revelations, namely, in the integumentary structures, where formerly dried and inelastic skin became soft, moist and pliable; and in the growth of hair, as seen upon the extremities, chest and pubes. Improved metabolism is evidenced by decreased former shortness of breath, better heart action and gain in weight. He concludes that the consequences are not transitory, but persistent over a period of years. While none of the patients showed any

direct unfavorable effects about 33⅓ per cent of the cases were uninfluenced by the operation.

Peter Schmidt (*Zeitschrift für Ärztliche Fortbildung*, XIX, Berlin, 1922) furnishes a contribution on the present state of Steinach's theory of rejuvenation. He propounds the following questions:

1. Does vasoligature give effects of rejuvenation at all?
2. Does vasoligature produce harmful effects?
3. Do the effects of vasoligature endure?

He bases his answers to these questions upon an examination of the literature and upon 24 personal cases. His observations were based upon objective and subjective changes, namely: (a) general physical and (b) temperamental, embracing increase in weight, growth of hair, greater vitality, lowered blood pressure, improvement of vision, sexual potency, increased mental alertness and energy. No harmful effects were observed.

As to the question of the endurance of the favorable changes, the author's cases have retained their improvement for one year, and there has been no relapse, a contradiction of the fear that the more quickly the organism responded to the stimulation, the sooner and more pronounced would be the reaction.

An examination of the literature reveals, in addition to the foregoing reports in support of the claims for Steinach's investigations, others that voice opposing views. These opposing views are expressed from various angles. L. Druener (*Deut. Med. Woch. Ann.*, 4 C., Nr. 51, 1920) reports two cases of prostatectomy on patients 72 and 70 years old, that showed all the signs of rejuvenation recorded following ligature of the vasa deferentia, namely, awakening of sexual life, increase of weight and development of energy. While this is intended as a contradiction



FIGURE VII

A late castrate, 1 year, 3 months old. Both testes removed 1 month before animal is killed. Compare with No. VI (grafted animal—secondary castrate), wherein grafted glands, composed chiefly of proliferated interstitial cell structure, are removed.

it also invites the question, already referred to, as to the similarity of the causative factor in these two conditions.

F. Frendenberg, writing on Steinach's rejuvenation experiments (*Munich Med. Woch. Ann.*

47, Nr. 45, 1920) relates a case in which, after operation for hydrocele, potency returned, following cessation for a number of years. In this instance the patient had been greatly depressed because of a wrong diagnosis of sarcoma, and the



FIGURE VIII

Senile male animal; aged in the normal course of existence. Physical character conforms to advanced age, namely, absence of agility, potency and combativeness. Internal genitalia reveal retrograde characteristics, similar to those of the artificially altered animal, namely, early and secondary castrate. (Figures III and VI.)

disappearance of the depression is given as an explanation of the simultaneous improvement that occurred. Cases of the cure of psychic impotence in this manner are too numerous to mention.

Blum of Vienna (*Vien. Klin. Woch.* Jan., 1922), a urologist of great experience and talents, writes in opposition to the claim that the Steinach effect is an explanation of the frequently observed veritable restored vitality accompanying successful prostatectomy. He inclines to the theory of a prostatic hypertrophy, produces a hyperprostatism, which vanishes after prostatectomy. Blum supports his contention by an investigation of the post-operative condition of prostate and vesicles and by a demonstration of the presence of spermatozooids in the seminal secretion of some of his cases. It should not be lost sight of, however, that spermatozooids have been found in the retained secretions of the vesicles, even after orchidectomy and that success is not claimed in all cases even by the most ardent supporters of the Steinach theory.

H. Stieve (*Nat. Wiss. Aim.*, 8 Nr. 33, 1920) likens the claims based upon the experiments of Steinach to those of Brown-Sequard and Poehls which did not fulfill expectations. While other objectors are on record their criticisms are no more constructive than the last quoted. Be this as it may the question under present consideration is not whether in most cases the general physical betterment following prostatectomy is psychic, a favorable recoil from a pre-existent hyperprostatism or a salvage from the danger of renal back pressure and resulting urinary toxemia. For the contributing influences undoubtedly vary in different cases and may be one or all of these in many instances. The question to be

answered is: *Is vasoligature a justifiable surgical expedient, and if so, under what indications and with what expectations?*

May I submit the following summary of my views upon this question: Having performed this operation over a period of 20 years, and having been in communication with all of the patients, following operation, I am able to state without reserve that at no time have I observed any complication arising as a result of the operation, or any psychic disturbance develop thereafter. This, to my mind, disposes of the fear of detrimental effect, a fear that would naturally delay decision upon any operative procedure if not outweighed by other, more important considerations. Accepting the foregoing premises, what are the indications and what the contraindications for operation? In the light of the special prominence this procedure is receiving, this phase of the question must be considered from both the urological and biological aspects. Confining myself to the former, I can state emphatically that, as exemplified by the cases reported herewith, there exist definite indications for the operation of vasoligature in certain well-defined conditions, involving the testicles on the one hand and the prostate on the other. In chronic relapsing epididymitis which has resisted other measures of treatment, it has been found that severing by

unless the cases submitted to this minor procedure are carefully chosen.

I would antagonize vigorously the notion that the chief consequences of vas ligation are within the sexual sphere, and would denounce the purpose of resorting to the operation solely with this end in view. Double ligation is seldom indicated in a young man, in which cases single ligation may serve as a means to an end. As to the effect upon the general vitality, there can be no doubt that there is preponderating evidence that a large number of the cases operated upon show remarkable response to some favorable influence, psychic, antitoxic or endocrinic. This fact, together with the indications outlined in a certain class of cases, should serve at least to justify the claim that vasoligature is an expedient of proved value in the work of the urologist. To this may be added the further conviction, after critical survey of the experience of those of high intelligence who have contributed to this experimental field, together with my personal observation, that: senium praecox, an indefinable state of the organism, induced by psychic or physical wear and tear, has, as a result of vasoligature, been succeeded by a reawakening of psychical activity and an improvement in physical vigor that, previous to this operation, seemed beyond reasonable expectation.



FIGURE IX

Senile male animal, brother of senile male No. VIII, 1 month after vasoligature on both sides. Internal genitalia reveal restored development. The animal increased in weight and exhibited other awakened physical characteristics, namely, animation, potency and combativeness.

vasoligature the link which so closely connects prostate and testis will serve as a means of removing the latter gland as a constant menace of complicating inflammation. There is a certain percentage of prostatic cases, accompanied by enlargement and obstructive retention, that, when properly selected, yield a prompt and satisfactory response to the decongesting influence of double vasoligature. This is at a time of life when the question of procreation no longer exists. The favorable effect of this operative technic is most pronounced when for various reasons it is deemed inexpedient to attempt the major procedure of prostatectomy; but the fact must be emphasized that disappointment is likely to be the result,

THE ABUSE OF CAESAREAN SECTION.*

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TWENTY years ago the operation of Caesarean section was relatively rare. It was then done practically in all cases for pelvic contraction after one or two babies had been lost from delivery by vagina. As the years have gone by, we have seen, with the development of the operation, the development of surgical technique, its indications broadened, so that now it is one of the most common obstetric procedures that we use. It always will be a dramatic operation. It appeals to the onlooker; it thrills the student, and the layman marvels at it. You can scarcely take up a medical journal that does not contain an article reporting a case that has been delivered by Caesarean section for a new indication. Most of the ones that have been reported have been reported apparently with good results, and the result is that any physician with a mere smattering of surgical training, thinks that he can do a Caesarean with equally good results. He knows the hard work that an obstetric case often entails, he knows the poor fees that he will obtain, and many times little thanks, and with the repeated stimulus that he has from reports in the journals for doing a Caesarean for this, that and the

* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 20, 1922.

other cause, he makes himself think that he, too, should begin to do Caesareans. The result is that we have had spring up in our midst men doing Caesareans for insufficient reasons without proper training, with questionable results.

I would not for a moment have you think that I do not appreciate the immense amount of good that this operation has done and will continue to do, but I am one of the obstetricians who feel that the pendulum for operating has swung too far, that careful judgment and observation are being lost sight of in this mad scramble to see what new indication may be used to perform a Caesarean section. I take it there is no easier operation, classed as major, to perform than a first classical Caesarean section. The average well-trained interne does a satisfactory section. It is the very ease of the operation, the brilliant results obtained in the selected cases of the careful man that has in the past few years led to the broadening indications. When before we held to pelvic indications, we now know of cases constantly being done where there is no disproportion present. Scarcely a month goes by that we do not see a small or large series of cases reported in which Caesarean sections have been done for no real sufficient reason. From the trend of thought that now impels many of the men in the medical profession, it would appear that all breeches, all or many right posterior positions—fortunately for the poor patient, some writers have not yet discovered that left posterior positions also occur not infrequently—all prævias and eclampsias demand Caesarean sections. I cheerfully agree that some breeches, some prævias and eclampsias should be so managed, but the sweeping indiscriminate statements that all such cases should be treated thus, I stand against.

There is another type of case that one frequently hears Caesarean sections are done on. A patient starts up with poor indifferent contractions, lasting possibly for twelve hours more or less. No progress is made in dilatation. The head remains high, only settling into the brim. The attending obstetrician loses his perspective, becomes apprehensive, puts the patient down as having a first stage inertia, goes to the family with a long face and says that he doesn't see how she can be delivered with a live baby, puts the condition to the family in such a way that of course they agree to a Caesarean. A Caesarean is done, when in not a few such cases the patient is not in true labor at all. It is only within the past few months that I have had in my own practice several such cases as this. Were I so constituted, I could have gone to the family and they would cheerfully have agreed to have had a Caesarean section performed. But with a good dose of morphia combined with choral they are given a good rest. A few days later, even a week or more may pass, and these patients start up in good active labor, dilatation of the cervix fol-

lows, and they come to a normal delivery or a simple low forceps.

Again, we see the type of case which has a high head, and according to her dates should start up in labor. If the attending physician in these cases does not carefully look to the pelvis and to the size of the baby, he will jump to the conclusion that he has a high head to deal with, will claim that the risk of letting her go through a delivery from below is great, and urge the family to have a Caesarean section. It was only a short while ago that this occurred in a case that I know about. The patient was told that she must have a Caesarean at once, but she flatly refused because she said she did not think that she was due. She went for a week or more after this obstetrician had recommended a Caesarean as an operation of necessity, and then delivered herself.

Unquestionably there are a few women who stand labor poorly, who make a poor convalescence following a hard long labor. This indication for a Caesarean section has been used in not a few cases to do what seems to me unnecessary Caesareans. I see such women constantly, who during their pregnancy make one think they are poor risks for a delivery from below. Gradually as pregnancy goes on they improve; in some, improvement does not take place, but not a few of these women, when they come to labor, will surprise us in the way they stand their labors. They come up to the scratch, they meet their labor, helped on by analgesics and gas and oxygen, remarkably well, and can be carried through a delivery from below without any risk whatsoever. Unquestionably there are women who do go to pieces under labor, but they are relatively few, and since this indication has been put forward it has been used quite injudiciously by not a few men.

The careless indiscriminate way that surgeons with no obstetric judgment do Caesarean sections, makes one shudder. They recognize few of the contra-indications, they go ahead blindly, and I am free to admit that in some cases they appear to get fair results, but we do not know how many of their cases go wrong that are not reported. There are few surgeons who have the requisite obstetric judgment to determine whether a Caesarean should or should not be done, and it is only natural that when a case is referred to them they should do what they know they can do well. For it is not the technique of the operation that demands special skill; it is, in my opinion, the judgment when to do a Caesarean that is the essential point. The surgeons are not entirely to blame for the situation that has arisen. A case is sent to them for a Caesarean, and they do it. The error in judgment lies with the family physician, who sends an obstetric case to a surgeon for an operative procedure when he has not the requisite training to determine when one is nec-

essary. The family physician makes up his mind, not always wisely, that a Caesarean should be done, and not wishing to have his judgment questioned, he sends the case to a surgeon whom he knows will do what he is asked to do without question, while if the case is sent to an obstetrician, the obstetrician uses his better training and settles for himself whether he will do one or not.

I appreciate, as well as any of you, the large series of cases with excellent results, the low mortality on selected cases running between two and three per cent. But the moment that the careful indications are omitted when a Caesarean is done on neglected cases, the mortality runs up very high. I have wondered again and again how many of us appreciate that in not a few of these cases we have lowered the mortality rate in the infants at the expense of a rising mortality rate in the mothers. I do not think that you can blame the teachers of obstetrics for this situation. The bad results that come from Caesarean sections are because the men who do them lack well developed obstetric judgment. They take unnecessary risks because perhaps in the past they have done similar cases with good results. Because we are successful in a few doubtful cases is no sufficient reason to jeopardize women's lives when we know that such procedures carry with them a high maternal mortality.

Let me go into detail on four classes of cases that are now being widely treated by Caesarean section.

First the young primigravida who comes to labor with a high head and no demonstrable disproportion present. Shall we at once perform a Caesarean, or shall this woman be allowed to go into labor? Before we answer this question I assume that the obstetrician-in-charge is capable of judging within the average limits of error whether or not a disproportion exists. This, however, is where the average case is badly handled. There are still too many women who come to labor with no adequate investigation of their pelvis. This is why our lying-in hospitals obtain such high mortality and morbidity rates in emergency operative cases. There has been no proper supervision of these women. I hold it is better after proper investigation of the pelvis and estimate of the child's size, to allow such a patient, especially if she is a young woman, to go into labor and see what an efficient test of labor will do. In by far the majority of such cases six to eight hours will prove conclusively that with further labor the head will come down and be delivered relatively easily. In a few we make mistakes and possibly lose a baby, but with the careful use of analgesics combined with gas and oxygen this very, very rarely will occur. To me it is better obstetrics to use judgment and care in taking a primipara through a border-line case successfully than to subject these patients unnecessarily to a Caesarean life. A prominent

obstetrician said in my hearing some time ago that he thought if we allowed all women to go into labor we would do few Caesarean sections. However, he does not let women go into labor and he continues to do Caesarean sections.

In the small proportion of such cases that finally come to Caesarean section in this class, is the operative risk of a Caesarean section after a test of labor so great that we are not justified in operating? If progress in these cases is watched by palpation and careful rectal examinations, I am confident the risk is not great, especially if the membranes are not ruptured. But if vaginal examinations are made, even under strict asepsis, the risk then is greatly increased and I refuse to do a Caesarean section.

What I urge is that each individual case be so carefully supervised that when she starts in labor the physician in charge has a definite plan laid out for this individual case. In fairness to our patients this should be done and then our results will be better—we must not be forced into performing some operative work which if conditions had been fully understood would have been managed differently.

The second class of cases are the eclamptic patients. I confess I do not feel so strongly against a Caesarean section being done on some of these cases as I do the indiscriminate way that they are being done in the first class. But do not think that all cases of eclampsia are to be so treated. Eclampsia is largely a preventable condition, and when it occurs in by far the majority of cases someone has failed in his or her responsibility. In the toxemic cases, where efficient treatment has been given and no improvement or not sufficient improvement takes place, and delivery seems advisable, Caesarean section, especially where the cervix is long and not taken up, gives brilliant results. But the point I wish to make is that here again proper supervision of the patient will do away in many cases with the thought even of a delivery.

The third class are the praevias. From all sides you hear a praevia should be managed by a Caesarean section, and it unquestionably is being done more and more, even on three and four pound babies, and the praevia being only partial! Is that even reasonably good obstetrics? I can not bring myself to agree to this wave of enthusiasm for operating by this means. Doesn't it come in some measure from the fact that the first bleeding in many cases is overlooked or minimized, and then when another bleeding comes the physician rushes about and wants something done, as do the family—and a Caesarean is done.

For the past year I and two others have had charge of all bleeding cases at the Boston Lying-in Hospital. During the year there were twenty-five cases that demanded operative interference, and we lost but one mother—a patient who was brought to the hospital in very bad shape, and

died in spite of treatment, including transfusion. In no one of the praevia cases did we do a Caesarean section. We elected the Voorhees' bag in almost every case, doing, in a few, Braxton-Hicks versions. Caesarean section was reserved for the completely separated placenta, undilated os and not in labor. I believe that certain definite conditions must be fulfilled in the choice of a Caesarean section in placenta praevia, and in a word they are—the patient must be in good condition and uninfected, the cervix must be rigid and the os undilated, and the fetus must be alive and viable. If these conditions hold, then I agree Caesarean section is permissible, even advisable—but how often do these conditions hold? Few praevias go to full term without signs of bleeding, and again, as I said earlier in my paper, that if the patient is carefully supervised, and careful vaginal examinations made in the latter part of pregnancy, this complication would undoubtedly have been discovered earlier by the careful palpation of the lower uterine segment.

The fourth class of cases that Caesarean sections now are being urged upon are the cardiac cases. It is recognized on all sides that cardiac cases are prone to have very easy labors, and with the aid of analgesics and delivery from below when full dilatation has been accomplished, the labor may be made still easier. A pregnancy in a serious cardiac case is an extremely difficult one to carry through successfully, but I am not convinced that the writers who claim Caesarean section is the only way to treat them are right. Is not a short carefully managed labor and early delivery to relieve the strain of the second stage less of a tax on the already damaged heart than the discomfort, pain and distention that not infrequently is the accompaniment of an abdominal delivery? If the patient is a primigravida, the reason for a Caesarean section is more real than were she a multigravida, with a similarly damaged heart. But who can absolutely say how any given heart will stand a labor—there are too many unknown quantities present—and therefore I prefer if possible to deliver cardiac cases from below.

The writers who plead for a more frequent use of Caesarean section claim that at the present time it is the only method of making childbirth painless that we have; that it is quick, sure, and carries little risk to the mother; and it is the only absolutely sure way to obtain a live child. Now are these claims absolutely so? Is it a painless method? Is it never with pain and discomfort? Can any one of us here today do a series of Caesarean sections and guarantee that the patient will have no pain or discomfort? I doubt it. The pain necessitating morphia is frequently of much longer duration than in many labors. The distention is oftentimes marked, and for a cardiac, a complication much dreaded. The pain

in the repeated Caesarean sections caused by the after pains is not to be forgotten. It is quick, and apparently that, in some operators' minds, is the chief point in the operation to be considered. Does it carry little risk to the mother? Before any operator says it carries little or no risk, he, I believe, should state his own mortality rate. Personally I believe it carries a considerable risk, for if there is any slip—if the patient goes wrong at all—it usually means a uterine infection and death from general peritonitis. I agree about the child, with one reservation, that it is the surest way to get a living baby. That reservation or caution is this—to be sure that the baby is full termed, and that is why I elect to wait almost always for the patient to start in labor unless I am very sure that the baby is of good size, for there is no doubt that maturity in the newborn has much to do with its good start.

I have already spoken of the possibility of general peritonitis. No one of us can rule out the accidents that a surgical procedure entails, and it is because of these very accidents that will sometimes come and mar any operator's record, even that of the most careful, that I am urging that Caesarean sections be done only after sound reasoning and conservative deliberation.

It is idle to say that Caesarean section is without risk of complications. There is no one, I believe, that can do large series without them. Sepsis will appear. Emboli do occur more frequently than in normal deliveries. The distention that follows is distressing and sometimes very troublesome and dangerous. In cardiac cases it may be sufficient to turn the scale against the patient. In the past two years in Boston I have known of five women lost through postpartum hemorrhage, and yet is this a complication that is usually mentioned? In the repeated sections we have the same complications possible as in the first, plus the possibility of adhesions and a thin or ruptured scar. I know of no way to prevent adhesions forming. I well remember one night doing two second Caesareans. The first was one that had been done late in labor after several vaginal examinations. Her convalescence had been stormy but eventually made an excellent recovery. The second had been an elective section and the convalescence was afebrile. I opened the abdomen of the first very carefully and slowly, expecting many adhesions and a questionable scar. To my surprise there was not an adhesion in the abdomen and the scar was not remarkable. In the second, the abdomen was full of adhesions, omental and intestinal. This is not an unusual experience. Adhesions, sometimes serious and very troublesome, must be considered in every repeated section.

The scar in the uterus always gives me anxiety. I agree that in an afebrile convalescence the scar is more apt to be a good one, sometimes not even seen when the repeated section is done, but some-

times even with an afebrile convalescence the scar is much thinned. Holland, an Englishman, has analyzed the greatest number of Caesarean sections that have been done recently, and he concludes that the frequency of rupture is four per cent in subsequent pregnancy or labor. It unquestionably is a potential risk that no one of us can accurately estimate, and for this reason I feel it is safer if a patient has had a Caesarean section to continue this method of delivery. But if delivery is to be attempted from below, then I am confident that that patient must be in a well-equipped hospital and a competent obstetrician present at all times of the labor to meet any possible emergency. Physicians recognize the dangers of Caesarean section, not when they calmly, without thought of the future, recommend a Caesarean section, but when they come to the second or third section, for they then suggest that sterilization be done. If the danger were not present, what justification is there of sterilizing the patient, even going to the point where some men recommend a hysterectomy to effect sterilization, because it is claimed the convalescence is smoother?

There is not one of us here today who will submit to an abdominal operation unless we have to, and yet we constantly, by unnecessary operating, make women subject themselves to a major operation every two or three years. We know that all contraceptives may fail their purpose—and a pregnancy follows. How many of us have thought of the complete change that takes place in the marital relationships when a Caesarean section must be looked forward to every year or two? The alternative is sterilization. There are very few couples who wish to face a Caesarean section each time one of these families is to be augmented, and none of us can say they are wrong. The majority admit they are right and sterilize the woman.

I have done a fair number of sections and my results have been very satisfactory, but I have met the complications that we all have met, which we always will meet until we learn how to stop them. I would not have you think that I condemn the operation—I know too well what brilliant results it gives. What I do urge is a more careful study of each individual case and treat it according to our best obstetrical judgment. Do a Caesarean section if that is justified, but don't cut and then think afterwards. I know I have done some unnecessary Caesareans, but they are few. One I remember very clearly. It was on a doctor's wife. A breech was presenting and I advised against a section. For the moment my advice was accepted, but later the doctor changed his mind and urged me to do a Caesarean. I weakened and did it, and on the next pregnancy I delivered her from below. I have always regretted doing this Caesarean, but I felt I was justified to a slight extent because

the doctor knew the risks involved and he chose the Caesarean.

A committee of the Massachusetts Medical Society has been studying the whole maternal and infant welfare situation in Massachusetts, and the figures we obtained on the frequency of Caesarean section are most illuminating. They vary from three-tenths of one per cent in one hospital to eighteen per cent in another. That can mean but one thing; that some physicians—I call them neither surgeons nor obstetricians—are performing Caesarean section whenever they want to, irrespective of all real indications. I realize that we in Boston have been charged with doing too many Caesarean sections. I saw it quoted a short time ago that a woman in Boston could not be in labor six hours without some form of operative delivery being employed. This I scarcely can subscribe to, but I do feel that too many sections are done, and that is why I have spoken as I have to you.

The modern Caesarean section is one of the greatest blessings, judiciously used, that may be employed to save women and their offspring. Let us not so misuse it that we bring well-merited criticism on our shoulders.

THE EFFECTS OF X-RAY ON THE INFECTED LYMPH TISSUE OF THE NASO-PHARYNX.*

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THE extreme susceptibility of lymph tissue to the X-ray and its immunizing effect on the tissues in local infections are the two cardinal principles upon which the X-ray method of treatment is founded.

Heinicke in 1905 first pointed out the fact that lymph tissue was very readily destroyed by small doses of X-ray. Murphy and Ellis were able by suitable exposures to remove almost all of the lymph tissue in animals without inducing detectable changes in other organs or tissue. Taylor and Murphy found that when the doses of X-rays were properly graded even the total number of polymorphonuclear leucocytes remained unaffected, while the lymphocytes fell to a point at which few are seen in the circulating blood.

With our present-day methods of X-ray technique the results obtained in lympho-sarcoma, Hodgkin's disease, lymphatic leukemia and spleno-medullary leukemia are examples of not only the effects of X-ray on lymph structure but also substantiate the fact that suitable doses remove lymph tissue without inducing detectable changes in any of the adjacent glands or tissues.

The tonsil histologically is a lymph node made up entirely of lymph follicles and connective tis-

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sue framework. The mere fact that the X-ray causes a disintegration of the lymph follicles in the tonsil as in any other lymphatic structure indicates that not only the size of the tonsil is markedly reduced, but also that the depth of the crypts will be greatly lessened and if sufficient treatment given, only the fibrous and connective tissue framework will remain, thus leaving only the type of tissue which nature utilizes in her efforts to protect both the local tissues and the entire organism from septic absorption. The effect of the X-ray on the adenoids, infratonsillar nodule, lingual tonsil, and the hypertrophied and infected lymph tissue so often seen on the posterior and lateral walls of the pharynx, sometimes extending well up the Eustachian tube and interfering with the aeration of the middle ear, is identical with that obtained in the tonsil.

The immunizing effects of the X-ray on the tissues in local infections is best exemplified by the results which have been obtained in the past in acne vulgaris, ringworm of the head and beard, carbuncle, and boils. It has been found that the infective micro-organism present in these cases is little if any changed by the direct action of the ray, for cultures of these bacteria show no change after prolonged exposures. Out of 36 cases in which specimens were taken from the tonsillar crypts, 32 showed an absence of pathogenic bacteria after treatment. Recently Dr. Hickey, of Detroit, has carried out this treatment in a series of diphtheria carriers in which he was able to rid the throat of diphtheria bacilli in from two to four days, and this occurred in 80 per cent of the cases treated. Also Dr. Ludin, of Basel, Switzerland, in a late article, recommends X-ray therapy in tubercular peritonitis, stating that preliminary tapping is never necessary in cases with ascites; in six cases of erysipelas the fever promptly subsided and the erysipelas ceased to spread and soon disappeared.

The principle of immunization of the tissues in local infections as indicated in the results in the above conditions is further verified in the results obtained in cases of chorea, rheumatism, and those patients suffering from chronic valvular heart disease with the usual history of tonsillitis and rheumatism, followed by chronic endocarditis. The removal of the local infection in the naso-pharynx by X-ray has relieved the chorea and rheumatism, and the chronic cardiacs of the constant absorption of toxic material so that they have gained in weight and are better able to follow their occupation.

The favorable effects noted by the patients under treatment on post-nasal catarrh is no doubt due to both the X-ray effect on the hyperplastic sinusitis as well as to the effect on the adenoid tissue that may be present in these cases.

The technique is comparatively simple. In the average case we use a 7-inch spark-gap, 5 milliamperes, 10-inch distance and 3 m.m. of alumi-

num as filter, and four minutes' time. The patient lies face downward, head turned to the side, and position and angle of the patient and tube corresponding exactly to that employed by the roentgenologist in making a radiograph of the



FIG. 1.—Illustrates the use of the indicator in determining the distance and direction of the ray, showing area exposed and position of the patient. Routine factors with this apparatus as follows: Seven-inch spark gap, five milliamperes, ten-inch distance, four minutes' time, with three mm. of aluminum as filter.

lower molars on an X-ray plate. The number of treatments is usually about eight, given at two-week intervals, and both sides of the head are exposed at each treatment. A special table and board have been devised for the treatment of children.

This method, compared with surgical removal of tonsils and adenoids, is free from serious complications. Following surgical removal one may have all the conditions which arise from circulating septic emboli: lung abscess, empyema, phlebitis, endocarditis, etc. Hemorrhage, middle ear and mastoid infection may also complicate recovery. In the X-ray treatment there are no known complications provided the technique is faithfully carried out. The permanency of the results as well as the safety of this method can be checked up easily by any one who in the past ten years has had a number of tubercular glands of the neck treated by X-ray. Van Allan's recent report of 50 cases in the *Journal of Radiology* (December, 1921), is most interesting and instructive.

The same technique, so far as the factors are concerned, is used in the treatment of tubercular

glands of the neck and toxic goitre, the only difference being in the area exposed. In the goitre cases we expose both the tonsil and the thyroid gland, and in the tubercular gland, the tonsils and the glands involved. Whether an in-

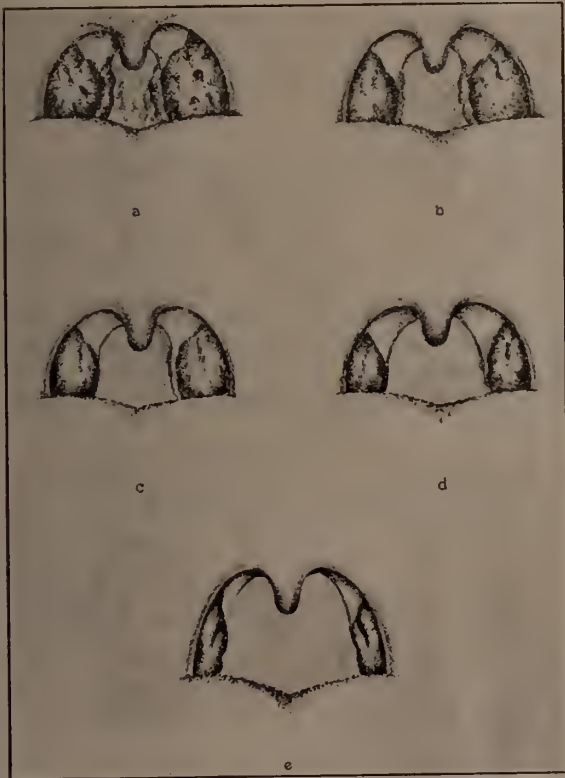


FIG. 2.—a. Tonsils before X-ray treatment; large, ragged; crypts contain pus; large mass of lymphoid tissue behind posterior pillars. b. Two weeks after treatment; tonsils reduced; surface smooth and clean; mass behind pillars reduced. c. Four weeks after treatment; tonsils markedly reduced; pale and smooth; no exudate on deep pressure. d. Eight weeks after treatment; small amount of exudate. e. Six months after treatment; tonsils small, normal in appearance; no exudate on deep pressure. Lymphoid tissue behind pillars practically gone. Hemolytic streptococci disappeared from throat by second week after treatment.

fectured throat has anything to do with the toxic goitre is a debatable point; however, I have seen one case sent into the hospital with an acute follicular tonsillitis which in 48 hours developed all the symptoms of toxic goitre. If the infected throat has anything to do with the action of the thyroid gland we might expect better results in these cases if the focal infection in the throat is relieved as well as the effect of the ray on the gland itself. In tubercular glands of the neck the removal of the focal infection in the tonsil and throat will also relieve the primary focus of infection and thus have more lasting results on the effect on the tubercular gland.

The objections so far encountered to the X-ray method have been, first, the dangers of X-ray,

namely, a burn. This is impossible if the technique prescribed is carried out. The possibility of injury to the parotid, the thyroid, the pituitary, and to other adjacent glands has been amply tested in the past ten years in which tubercular glands of the neck have been treated by much larger doses, some of the cases receiving as high as forty doses; whereas, the dose for tonsils and adenoids has never exceeded fourteen treatments in any given case in a series of nearly 500 cases which we have treated in the past two years.

We have encountered two cases of concealed abscess of the tonsil in our series of 500. These have been revealed by the shrinkage of the tonsil; both cases were suffering from rheumatism, and in both instances the rheumatism was relieved in the early part of the treatment. These abscesses are completely circumscribed and walled off by fibrous tissue and are therefore inert. In one of the cases the abscess ruptured and drained about three months after treatment. The fibrous tissue remaining after X-ray treatment and the incapsulation of these abscesses point out the fact that we leave only that type of tissue which nature utilizes in her defense against infection.

This method is especially indicated in chronically infected throats in vocalists, since the muscular reconstruction of the throat is minimum as compared with that following surgical removal of tonsils and adenoids; also in those cases associated with rheumatism, chorea, diabetes, chronic endocarditis, hemophilia, or any condition contra-indicating operation.

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A STUDY OF PARANOID TRENDS IN HYSTERIA.*

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HYSTERIA with its protean symptomatology on superficial study may simulate many physical or mental diseases, especially in their early stages. In reality well defined cases of mental disease are rarely confounded with hysteria, yet in some in their early stages the problem of differential diagnosis is often difficult. In one instance, a patient resident several years in a state hospital, after study by the resident staff and several visiting psychiatrists, was placed in the convenient undiagnosed psychoses group, with the consensus favoring hysteria. Only after six years did the patient show symptoms of deterioration, which though slight were enough to favor a diagnosis of dementia precox. This patient, a man 35 years of age on admission, an assistant professor in architecture at a university in New York State, was an accomplished violinist and a fair painter. His psychotic episodes were of several weeks duration and would manifest themselves suddenly by bizarre and silly conduct, such as undressing in the street while on parole, repeating poetical phrases and asking definitions. He was playful, flighty and somewhat euphoric. The silliness of his activities, some introvertive manifestations and his previous history, which is not in point to give here in detail, and the fact that he was entirely out of contact during his attacks precluded the possibility of a diagnosis of manic-depressive psychoses. Yet in the lucid intervals of a few months' duration, he would paint, draw plans which were considered by connoisseurs as ingenious and artistic and occasionally published an article in a leading journal of architecture. Attempts at psychoanalytic treatment of this patient proved of no avail; there was little cooperation though good insight, the dreams were meagre and the associations wanting, indicating essentially a non-transference state.

Such conditions are not rare and it is not my purpose to enter here into a discussion of undiagnosed psychoses which may resemble hysteria. Nor would I attempt to revert to the older view of hysteria which included many states that now are recognized as belonging to other psychotic types. But when in hysteria symptoms belonging to such a well-defined mental picture as paranoia, with its poor therapeutic possibilities are seen, it is quite essential to detect this combination if it occurs, and understand their relationships.

The occurrence of psychotic symptoms in the psychoneuroses and the more frequent occur-

rence of neurotic symptoms in all forms of insanity has forced the conception of the nosological uniformity of all functional psychoses and neuroses. The common factor in the causation of both of these conditions is the relative damping of the libido as described by Freud which disposes of itself in ambivolency and infantile fixations in both. The following authors, as quoted by August Stärcke,¹ have recognized genuine delusional ideas in the course of a functional neurosis: Krafft-Ebing, Meynert, Willie, Emminghaus, Kraepelin, Tuczek, Morselli, Friedman, Mickle, Schüle, Séglas, Pitres, Regis and Freud. Dr. Hyman L. Levin (Buffalo, N. Y.) and I had under our observation at the St. Lawrence State Hospital, a boy, 14 years of age, who talked continually of a knife sticking in his side, and again in his mother's side. He recovered from his psychosis (psychoneurosis, hysterical type) four months after admission and resumed his studies at high school.

Paranoid symptoms in hysteria are rare. Usually when a paranoid trend appears in a hysterical patient consideration is given first to the paranoid trend, and rightly so, for there are many cases of early paranoiacs who for a long time show so-called physical symptoms of a psychoneurosis. Yet cases which are unmistakably hysteria with a definite persecutory trend are occasionally seen. As far as ascertained the delusions are fixed and of several months' duration and the past history may fit either hysteria or paranoia. How are we to proceed to manage this condition, what prognosis are we to give those interested in the patient when the results may be so different? So much is dependent on a proper diagnosis, and nowhere can a diagnosis be better made by a psychoanalysis than in these conditions; for only after such an investigation can the true state of affairs be determined.

The infrequent occurrence of systematized delusions in hysteria may be explained by the different psychogenic factors involved in the formation of the two conditions. It is the difference of the sexual object selection. There are two paths of object-finding in the early love-life of the individual,² the first which is guided by the early infantile prototypes and the second, the narcissistic, which seeks its own ego. It is the latter which plays such an important rôle in the paranoid character,³ which, long before the development of the psychosis, shows traits⁴ of being abnormally mistrustful, sensitive, prone to see sinister meanings in indifferent occurrences, inclined to misinterpretations and feeling discriminated against. These traits are usually found in combination with a fairly well concealed egotistical make-up characterized by being abnormally self-centered, conceited, with feelings of superiority and exaggerated self-importance. When a

* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 19, 1922.

neurosis develops in such a character, paranoid trends are apt to be intermingled with it when the neurosis is insufficient as a defence against the libidinous strivings, which are here directed not only toward the phantasy objects of the outer world but also in reversion into ego-libido.

I. TREND IN CONVERSION-HYSTERIA

The opportunity to study such a condition presented itself to me in the fall of 1920, when Dr. John L. Macumber, referred to me for psycho-analytic treatment, a young woman 27 years of age. She complained of a "terrible feeling in the heart" which was slightly relieved while walking or riding. While lying down she got some relief by being tapped on her arm by a girl friend. Eventually an electric vibrator served the purpose of the tapping when her friend was occupied. The symptom came on suddenly at the beginning of the fall school term three years ago, and she was obliged to discontinue her profession of teaching. This concerned her very much and in spite of her symptom she attempted to resume her teaching but had to give up in despair after several brief trials. From the beginning she considered herself incurable and reluctantly attempted all kinds of treatment, including the extraction of two impacted teeth, appendectomy, tonsillectomy and amputation of the cervix uteri, but in vain. She became depressed, thought of suicide and wept frequently. She also suffered from an intermittent rhinorrhoea of several days' duration which came on soon after the major symptom and would recur at irregular intervals. She lived with her father and mother who were in the sixties, and a sister eleven years her senior. An older brother was married. The patient was the youngest in the family. Her mother was antagonistic and her sister for many years had persecutory ideas which made home life unpleasant. Her father was a studious and reserved man who avoided difficult situations by ignoring them. The patient eventually went to live with her girl friend where she found more congenial surroundings. Her friend was very much attached to her and would occasionally stay up late at night to tap the patient's arm if the vibrator did not suffice.

The patient evaluated her symptom as a "mental torture" brought on by her "mania for dieting." She expressed the belief that the analysis would help her only if it succeeded in solving this "mania." For several years previous to the onset of her illness she had been successful in reducing her weight by sixty pounds. She had a "horror of getting fat." She begged that her dieting be not interfered with as on previous occasions physicians have insisted on her regaining her normal weight. Her mother particularly stressed the dieting as the only cause for her illness and had warned her for many years that

she "will ruin" herself if she kept it up. She admitted that her desire for reducing her weight was out of proportion to her need as she was tall and of good appearance and her reduced weight made her face somewhat drawn. She recalled that several months previously she had been alarmed at her appearance. At that time she read a circular enclosed in a package of imported Blaud's pills in which the symptoms of chlorosis were detailed. She remembered "palpitation and decline" as the main symptoms and recalled that her cousin had died of "a decline." After reading this circular she "nearly keeled over." At that time her menstruation was irregular and she thought that her mother's warning of "a terrible disaster" was coming on, as she surmised it, in the form of menopause (decline). At this stage of the analysis the symptom of rhinorrhoea recurred in a most severe form, and the mechanisms of displacement and over-determination could be observed. The analysis progressed for a few months and the major part of the patient's life was uncovered. We reviewed her "crushes" for female teachers at high school and later at college. She had no desires for marriage. There were some stormy analytic sessions with vehement denial of certain phases in her life and marked emotional display. On one occasion she refused to recline for the analytic interview. "I will not do it. First you tell me to lie down and next I suppose you will tell me to close my right eye," she protested. I inquired "why did you say 'right eye,'" for by this time she had learned the significance of slips of the tongue. She argued "I mean not exactly 'right eye,' but some such unnecessary thing." I persisted for associations; she was reticent but blushed. She admitted having read a book the previous day about which she did not intend to tell me as I had forbade her to read such material. It was about the relationship of masturbation to nervousness, and she finally admitted having masturbated until several months prior to her illness. Numerous incidents were now brought forth: of her mother beating her when at four years of age she was found straddling a chair and masturbating; later of reading about some woman being tortured in a prison and erotic sensations on recalling the scenes read; of a feeling of shame developing on account of it and sensitiveness when among children of her age which she later attributed to her slight obesity, and then blamed the obesity for her practice, etc. There is no need to enter extensively into the myriad of associations which the patient brought forth during the subsequent interviews and the important part her strict disciplinary mother played in the formation of her varying characteristics of obstinacy and of complete submission. But what was quite important in the further course of the illness, was her sister's ideas of persecution and the patient's knowledge of

paranoia which she gained from reading text books on psychiatry during a brief residence in a sanitarium in the early part of her illness. She was impressed with the alleged incurability of paranoia and though she spoke of her sister's illness as only "nervousness" and refused to accept any other designation she unconsciously was aware of the true nature of her sister's condition. At this time, after about five months' analysis, the patient suddenly renounced all insight she gained during the interviews. She maintained that the conclusions were all wrong, that she was not at all a case of hysteria, she was simply "crazy" and should be sent to a lunatic asylum where she would find "peace." Yet at other times she would ask for advice whether she should resume her school work for her leave of absence was expiring and she would have to take more examinations if she ever desired to teach again. I refused to advise her, as I felt that primarily she did not like to teach. This I concluded after learning one more fact which was quite pertinent. The summer before her illness she was being courted, but she did not want to consider marriage, as she had made up her mind to follow her career of teaching. However, the analysis disproved this excuse, by uncovering her primary inadequacy for heterosexuality on account of her early sexual fixations. Though there was a conscious refusal to concede to unconscious homosexuality, the latter found expression through her neurosis. In her illness she found that tapping by her girl friend comforted her. The symptom which consisted of a "terrible tension" relieved only by a vibratory movement was the libido disintegrated in the primary components of masochism and rhythm. The tapping was a miniature flagellation and revived the original beating by her mother which correlated masochism and masturbation. The dieting (self torture) fitted in with her masochism and served also as a resistance (obstinacy) towards her mother.

Her protestations against the conclusions brought by the analysis seemed to wane, but now a new set of symptoms appeared, though the terrible tension of her original symptom was much less, in fact she rarely complained about it. This new set of symptoms alarmed me, as they consisted of ideas of reference. She complained one day that when coming to my office her girl friend was engaged in conversation by a woman who remarked that she was dieting. The patient expressed the belief that this woman was my aid. Also the day before while waiting for me in the lobby of the hotel where I previously had my office, she overheard two women speak about Christian Science and she expressed the belief that I purposely placed them there to talk the topic in order to see its effects on her. I waited patiently to see what else was happening. In fact I considered these as early symptoms of

paranoia. For the early history of the patient, and the fact that her sister was delusional made me think that all her previous symptoms were merely the forerunner of a paranoid condition; that she was merging from the hypochondriacal stage of paranoia to the persecutory stage. Soon the patient's ideas became more bold. She would occupy the entire interview hour in telling me about how she was followed by detectives. Then she complained of people repeating and quoting her phrases, that there must be a dictaphone placed in her house to overhear the conversations between her friend and herself. Finally the neighbors near her friend's home were all placed there by me as detectives to watch her, etc. By this time I began to review the events in the analysis which might have led to these ideas and I formulated the belief that these were brought out as a means of resistance against any further analysis as the patient knew from previous reading the status of paranoia as a therapeutic possibility. Also I felt that she had identified herself with her sister and in this way could further dispose of her homosexuality. In the next interview, when she again related some of her persecutory ideas, I remarked, "you don't believe this is happening, you are trying to block further analysis by this means." She appeared surprised, smiled and said, "But some of it is true, isn't it?" There was enough here to indicate that my conclusion was fairly well founded. She became more amenable and again began to associate more freely and discussed her paranoid symptoms from the viewpoint gained by the analysis. Occasionally she would playfully talk of "your detectives," and I felt that her ideas were losing hold. Unfortunately I could not continue to treat her as of her own accord she registered for the new term at school and is still teaching. Neither I nor Dr. Macumber had the occasion to examine her recently, but we have heard that she was resuming most of her normal duties, and had returned to live at home with her parents.

In spite of the obvious improvement in the patient's professional and social relationships, it is too early as yet to conclude that the condition was a psychoneurosis complicated with a paranoid trend. However, such a possibility seems plausible when consideration is given to the circumstances under which the paranoid symptoms developed. These paranoid symptoms were not present until an analysis was under way for the solution of the primary conversion symptoms, and seemed to serve the purpose of defense by the libido in its transference difficulty.

II. TREND IN ANXIETY-HYSTERIA

One other patient, whose case I will discuss but briefly, presented symptoms of a paranoid character in combination with anxiety-hysteria.

He was a young man of 25 years who was referred to me for treatment by Dr. A. A. Brill. The patient complained of confusion, states of amnesia while driving an automobile, fear of touching people lest he harm them, and of certain automatic acts such as opening the faucets and realizing them only after his wife called his attention to them. His symptoms began about four years ago and came on soon after his wife gave birth to a son. He was in partnership with two brothers-in-law and he developed ideas that they were interested in forcing him out of the business, that they were holding secret conferences about him, that they were watching him, etc. As a matter of fact all this proved to be untrue. The analysis uncovered many of his early experiences and activities such as standing on a street corner when six years of age in order to watch old people fall in the snow presumably in order to help them arise but in reality to enjoy their fall. (These activities were associated with early hostilities toward his father and he stressed his father's cruelty towards him. The patient here symbolically took revenge on his father by watching old people fall). Then came other memories of a seduction at about four years by a man boarder. As the analysis progressed he one day asked me whether it is possible to have intercourse without being aware of the act. Instead of answering this I asked him to tell me more about this and he then told me that he did not know how his wife became impregnated as he always had used condoms. But one night his wife awoke him and told him that he had just had coitus without a condom. Soon after that she became impregnated. Lately the patient would find himself attempting coitus with his wife during sleep, but always awakened during the act. It was readily seen that the patient was trying to reassure himself, by certain other automatic acts, that the coitus-act could be accomplished in a semi-conscious state. This doubt of his wife's fidelity awakened in him his entire homosexual experiences and he defended himself against the conflict by developing persecutory ideas by the well known paranoid mechanism. The patient recovered fully with perfect insight.

CONCLUSION

The occurrence of a paranoid trend in conversion-hysteria and in anxiety-hysteria seems possible though rarely observed. Theoretically, the concept of a double disposition for the repressed libido in the same person may here be invoked. This concept may strike one as an unnecessary formulation. It may be argued that where narcissistic fixation occurs (as in paranoia) object-libido is primarily avoided and there is no need for an hysterical illness to develop.

On the other hand, when hysteria manifests itself, it is certain that the stage of object-libido

has been reached. The neurosis merely represents the realization of that form of sexual activity which corresponds to fixation at the level of object-love, after the wish for such sexual activity had undergone the mechanisms characteristic of the unconscious. This objection can be met by Freud's statement that fixation occurs to some degree at all stages. It is moreover conceded⁵ that "to a certain extent there is a mutual reciprocity between the amount of libido which remains attached to the self and the amount finding external expression. In the course of a person's life libido frequently oscillates between internal and external expression according to the opportunity for external attachment and other various factors. This freedom of movement of the libido in both directions is requisite for mental health." Analytic observers have recognized in paraphrenia a marked "adhesiveness" of the libido which makes it difficult for it to flow externally again after it has once been withdrawn to the self. This is observed in those patients whose illness is primarily paraphrenia. When a narcissistic neurosis such as paranoia develops secondary to a psychoneurosis, there is the necessary recognition of a freedom of movement of the libido towards a further regressive level if the primary defence is in some way interfered with. This secondary regression is not as malignant as a primary one. Here, as in the normal, there is an interchange in the stages—the regression is only temporary and a return may be accomplished. The circumstances favoring this secondary regression, resulting in paranoid symptoms in a previously diagnosed hysteric is a threatened solution to the neurosis which may be due to various causes and is apt to occur during analysis. It is in this situation, when the libido is about to be detached from the phantasy of the object-love, that a further regression may take place when the incentive for recovery is impoverished by external circumstances.

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CLINICAL STUDIES OF QUINIDINE.*†

THE DRUG.

III. SOME RESULTS OF THE QUINIDINE TREATMENT OF AURICULAR FIBRILLATION.‡

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ABOUT 40 per cent of the cardiac irregularities are due to fibrillation of the auricles. In about half of these cases, the arrhythmia is associated with chronic valvular heart disease affecting the mitral orifice, particularly mitral stenosis. In approximately one quarter of the cases there is found evidence of myocardial disease without valve involvement. The remainder comprise a group in which are seen a relatively small number of individuals with aortic disease and a somewhat larger number in which the nature of the heart affection is undetermined.

A majority of patients with auricular fibrillation complain of unpleasant symptoms which are directly related to the presence of the irregularity. The more common abnormal sensations experienced are palpitation, precordial oppression and epigastric discomfort. Other symptoms of heart failure may be added, of which the number and severity are, in general, proportional to the ventricular rate. The number of ventricular contractions may range from 60 to 180 per. minute, and is commonly above 90. The rhythm is perpetually irregular and many ventricular contractions are ineffectual in propagating a pulse wave to the wrist. This gives rise to the *pulse deficit*. In order to maintain such individuals in relative comfort, it is necessary, by continuous digitalis medication, to keep the heart rate at or about 70. Their response to effort is limited because tachycardia is readily induced and is accompanied by an increase in the number of beats which fail to reach the peripheral circulation. On the other hand, many individuals with auricular fibrillation, properly cared for, lead fairly comfortable and useful lives for a number of years.

It is not an overstatement to assert that the restoration of the normal cardiac rhythm by quinidine sulphate in patients with auricular fibrillation is one of the most dramatic pharmacotherapeutic accomplishments in clinical medicine. Furthermore, this drug is unique in its action in that it serves to restore to normal a disturbed physiological mechanism.

* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 20, 1922.

† The first two papers in this series were:

I. Restoration of the Normal Cardiac Mechanism in Auricular Fibrillation by Quinidine, *Jour. Amer. Med. Assn.*, 1921, lxxvi, 1289.

II. Alterations in the Cardiac Mechanism after Administration of Quinidine to Patients with Auricular Fibrillation, with Consideration of Certain Toxic Effects of the Drug. *Arch. Int. Med.*, 1922 (in press).

‡ From the Hospital of the Rockefeller Institute for Medical Research.

Quinidine is obtained from cinchona bark as a by-product in the manufacture of quinine, of which it is the dextrorotatory stereo-isomer. It was at one time regarded as a cheap substitute for quinine, but was discarded as inferior in the treatment of malaria. Quinidine sulphate, $(C_{20}H_{24}O_2N_2) \cdot H_2SO_4 + 2H_2O$, which is employed in the clinic because of its greater solubility, occurs as minute, silky, white crystals. It is odorless, bitter, soluble in water, and is best administered in gelatin capsules.

THE MECHANISM OF AURICULAR FIBRILLATION AND THE ACTION UPON IT OF QUINIDINE.

The older theory of fibrillation regarded this disturbance in rhythm as due to the presence of multiple irritable foci in the auricle, which gave rise to a battery of impulses occurring in rapid succession, of which a variable number were transmitted through the auriculo-ventricular bundle to the ventricle. The latter responded with contractions of inconstant force and irregular rhythm. More recently there has arisen a newer concept, developed from the work of Garrey and of Mines, and amplified by Lewis. According to these investigators, a *circus contraction*, having its path about the mouths of the great veins, is the mechanism which is at the basis of both fibrillation and flutter of the auricles. A circus contraction has actually been demonstrated in the fibrillating auricle of the dog and has been shown to exist in man by the application of trigonometric formulæ to the human electrocardiogram.

Quinidine prolongs significantly the refractory period of the auricular muscle and so tends to terminate the circus contraction. On the other hand, the drug also retards fiber conduction in the auricle, an effect favoring continuation of the circus. Normal rhythm probably follows its administration when the first effect predominates over the second.

CLINICAL EXPERIENCE WITH QUINIDINE.

Since the introduction of quinidine into clinical therapeutics by Frey in 1918, reports of more than 300 cases of auricular fibrillation treated with this drug have appeared in the literature. In from 40 to 50 per cent of patients treated, it has been possible to restore the normal rhythm for varying periods of time. Since the more important points relating to the results of therapy may be illustrated from personal experience, the following discussion will be based largely upon a consideration of the first 25 patients with auricular fibrillation treated with quinidine in the Hospital of the Rockefeller Institute.

These 25 cases represent an unselected material. The group comprises 11 cases of mitral

stenosis, 7 cases of combined mitral and aortic valvular disease and 7 cases without demonstrable valve lesion. In 11 cases (44 per cent) the normal rhythm was restored.

Before attempting to alter the cardiac rhythm, it is well to combat heart failure, if this be present. Rest in bed, restricted fluid intake, a properly regulated diet, and digitalis, if necessary, will usually serve to build up a cardiac reserve power.

In administering quinidine, it has been found advisable to give the individual doses at intervals of 2 hours. For the drug is rapidly excreted and the greater the fractionation of dosage, the more rapidly is it eliminated from the body. The patient should remain in bed, under careful observation by nurse and physician and preferably in a hospital where graphic records can be made at frequent intervals. The reason for urging these precautions will appear from the subsequent discussion.

A satisfactory plan of treatment is as follows: *1st day:* 2 doses of 0.2 gm. (3 grains). These suffice to test for an idiosyncrasy to members of the cinchona group; *2nd day:* 3 doses of 0.4 gm. (6 grains); *3rd day:* 4 doses of 0.4 gm. (6 grains); *4th day:* 5 doses of 0.4 gm. (6 grains); *5th day:* 5 doses of 0.4 gm. (6 grains). Not more than 2.0 gms. (30 grains) are given in a 24 hour period. It is rarely necessary to continue therapy after the fifth day, for if normal rhythm has not ensued after 5 days of treatment, it will probably not result from further dosage; or, if it should appear, will persist for but a short period of time.

Cases in which the Normal Rhythm was Restored.—The first effect of quinidine is usually acceleration of ventricular rate. The action of any single dose is transitory, usually passing off in the course of 2 to 4 hours. Occasional premature beats are also not uncommonly observed. The auricular rate is slowed and auricular flutter is often the transitional mechanism between fibrillation and the normal rhythm. Regularization occurs for the most part on the second to the fourth day of therapy, and patients are commonly aware of the change when the rhythm alters. The total amount necessary has varied from 0.4 gm. to 8.4 gms. given over a period ranging from 1 to 7 days. The average dose has been 2.6 gms., given in a 3 day period.

Four patients who have fared extremely well have been instances of myocardial disease, without valve lesion and with but slight cardiac enlargement. It has been maintained by most observers that short duration of fibrillation predisposes to a favorable outcome. Yet the following instance indicates that even when the arrhythmia has been known to exist for a period of years, the sinus may resume activity and a normal rhythm ensue.

J. W. H., Hosp. No. 4429, male, age 43. He had several attacks of malaria, and one attack of dysentery. He had syphilis 21 years ago and received thorough treatment both with mercury and iodide, and salvarsan. The Wassermann reaction on the blood serum was negative on admission to the hospital. His cardiac symptoms first appeared 10 years ago, fibrillation 7 years ago. He had taken no digitalis. His chief complaint was "palpitation."

Examination revealed a large man. The heart shadow in the teleroentgenogram extended 11.5 cm. to the left, 5 cm. to the right. There were no cardiac murmurs. The average ventricular rate was 80. The blood pressure was 140 mm. Hg. systolic; 96 diastolic.

He was given 3.2 gm. of quinidine in 3 days, according to the plan previously outlined, and on the evening of the 3rd day, after slight tachycardia, with maximum ventricular rate of 104, normal rhythm with rate of 83, was established. The patient returned to his home in Kansas City and was actively at work in the real estate business for 3½ months, during which time the normal mechanism prevailed without further medication. At the end of this period, there was sudden reversion to fibrillation. He returned to the hospital for further treatment. The ventricular rate was 80 to 90. After 3.2 gm. of quinidine, normal rhythm was again restored, the ventricular rate averaging 70 per minute. He is again at work.

In women with heart disease, especially when mitral stenosis is present, the strain of labor is often poorly borne. Fibrillation of the auricles may be induced, with accompanying symptoms of heart failure. In such a patient an astonishingly small amount of quinidine served to bring fibrillation to an end.

A. J. N., Hosp. No. 4393, female, age 32. The patient was admitted to the hospital complaining of shortness of breath and swelling of the legs and abdomen. She had growing pains during her 13th and 14th years. There was no history of sore throats or definite rheumatic infection. She had known for 5 years that she had heart trouble, but the rhythm was regular.

The present illness began with the birth of her child, 6 weeks before admission to the hospital. She had felt fairly well during pregnancy. Labor began at the end of 7½ months and after it had lasted 24 hours, the baby was taken from her with low forceps under ether. She noticed immediately after the birth of the child that she was somewhat short of breath. She was kept in bed for 3 weeks and given intermittent courses of digitalis. She then remained at home for 3 weeks, doing her housework up to the time of admission to the hospital.

On examination there was dyspnea, orthopnea

and cyanosis. There were signs of a large right hydrothorax and moderate ascites. There was marked edema of the feet and lower legs. The heart was displaced to the left, but not markedly enlarged. The auscultatory findings were characteristic of mitral stenosis and auricular fibrillation.

After 2 weeks rest in bed, restricted fluid intake and removal, in three aspirations, of 3,300 cc. from the right pleural sac, the edema was gone and the symptoms relieved. The heart rate at this time averaged 95, but the rhythm was still irregular. She was given 0.2 gm. of quinidine at 11 A. M. and again at 1 P. M. At 4 P. M. an electrocardiogram still showed fibrillation. The following morning, the normal mechanism, with rate of 88, was recorded.

This patient has now been under observation for 6 months, during which the sinus rhythm has persisted without further medication. She is able to perform her household duties without effort.

The duration of normal rhythm after a single course of treatment has been variable, ranging from a few hours to more than 6 months. In one man with syphilitic myocarditis, in whom the duration of normal rhythm after one course of therapy was from 20 to 23 days, the sinus mechanism has been maintained, with one brief interruption, for over 10 months, by small daily doses. Having once learned a patient's tolerance for the drug, cumulative effects need not be feared; for quinidine is rapidly excreted.

Unpleasant symptoms due to quinidine have been few in patients in whom the normal mechanism has been restored. In the literature are contained reports of several instances of embolism following establishment of regular rhythm, and the suggestion has been made that they were due to the expulsion of small bits of clot from one of the auricles. It must be remembered that embolism not infrequently occurs in heart disease with fibrillation when not treated with quinidine. The accident is always unfortunate, sometimes fatal, but is unavoidable. The following is such a case:

K. C., Hosp. No. 4504, female, age 44, was admitted to the hospital complaining of shortness of breath and weakness. She had frequent attacks of tonsillitis and 3 attacks of chorea between the ages of 6 and 14. Eight years ago the tonsils were removed. She had symptoms referable to the heart for two years and it is probable that she was suffering from fibrillation of the auricles during this period.

Examination showed no dyspnea at rest, and no edema or cyanosis. The cardiac dulness extended 12.5 cm. to the left in the 5th space, 4.5 cm. to the right in the 4th space. The auscultatory findings were those of mitral stenosis. She

had been taking digitalis before coming to the hospital; the ventricular rate was 80. The blood pressure was 112 mm. Hg. systolic; 82 diastolic.

She was kept in bed and given in all, 0.5 gm. digitalis in the form of digitan. On the 10th day of hospitalization, quinidine treatment was begun. During a 6 day period, 6.8 gm. were administered. The patient complained at various times of headache, tinnitus aurium and slight epigastric discomfort. There was slight acceleration of ventricular rate on each day. At 8 P. M. on the 6th day, normal rhythm was observed by the nurse to be present. At 8.40, quite suddenly the patient fell unconscious to the floor. After being put back to bed, she had a generalized convulsion, involving both arms and legs. She became very noisy, restless and difficult to manage. When examined at 9.30 she was still unconscious and quiet. There were no obvious signs of a local cerebral lesion. At 10.15 there was another convulsive seizure. By 1.30 the following morning, consciousness had returned. She vomited twice, and then slept during most of the remainder of the day.

Normal rhythm, with rate of about 90, persisted for 36 hours. Then fibrillation recurred, with ventricular rate of 126, 117 beats coming through to the wrist. Digitalis served promptly to control the heart rate.

It is probable that the attack of unconsciousness with convulsions was due to a small cerebral embolus, which was whipped off from a thrombus in the left auricle. Fortunately it lodged in a silent area in the brain and left no residual effects.

Several sudden and unexplained deaths have been reported by competent observers following the administration of quinidine. It is possible that some of these fatalities may have been due to the occurrence of ventricular tachycardia, and ventricular fibrillation, to which reference will be made later. On the other hand, as in the one instance which we have observed, clinical observation and necropsy may fail to reveal the reason for exitus.

J. P., Hosp. No. 4511, female, age 49, was first seen in October, 1919, complaining of shortness of breath and swelling of the legs and abdomen. She had frequent sore throats and had influenza in the 1918 epidemic. Symptoms referable to the heart had been present for 3 years. Edema was first noticed 4 days before admission to the hospital.

Examination revealed general anasarca, an enlarged heart, auricular fibrillation, but no evidence of valvular disease. The blood pressure was 144 mm. Hg. systolic; 84 diastolic. She responded well to the usual forms of therapy, including digitalis. The tonsils were large and badly infected, and were removed under local

anesthesia. She left the hospital free from symptoms, still taking digitalis in order to maintain a slow ventricular rate.

The patient was not seen for 2½ years. During this time she did light housework and took occasional doses of digitalis at irregular intervals. Slight exertion caused dyspnea and edema of the legs was present almost constantly.

She was readmitted to the hospital on April 3rd, 1922. At rest she was fairly comfortable. The lungs were clear. The heart was enlarged, dulness extending 15.5 cm. to the left in the 5th space, 5.5 cm. to the right in the 4th space. The rhythm was totally irregular. There was a systolic murmur at the apex, transmitted to the axilla. The pulmonic second sound was accentuated. The liver edge was felt just below the costal margin. The blood pressure was 156 mm. Hg. systolic; 82 diastolic. There was brawny edema of the ankles, legs and buttocks.

With rest, limited fluid intake and digitalis, there was marked loss of weight from 70.6 to 65.8 Kg. in 3 days. The edema disappeared. The heart rate averaged 71, with 67 beats felt at the wrist.

On April 11th, she received quinidine, 0.2 gm. at 11 A. M. and 1 P. M. There was slight acceleration of ventricular rate to 98 at noon. The patient complained of flushing, palpitation and dizziness. On April 12th, the heart rate at 8 A. M. was 68; these symptoms had disappeared. She was given quinidine, 0.4 gm. at 12 noon, 2 and 4 P. M. Again there was tachycardia, the heart rate at 6 P. M. being 100, with 74 beats at the wrist. There was no alteration in rhythm. She complained of flushing, headache, palpitation and nausea. She passed a comfortable night. On April 13th, all symptoms had disappeared; the heart rate was 77. Quinidine 0.4 gm. was given at 11.30 A. M., 1.30, 3.30 and 5.30 P. M. There was slight increase in heart rate, with maximum of 114 per minute at 2 P. M. There was some flushing after the second dose. At 6 P. M. there was headache. The patient passed a fairly comfortable night. She slept, however, only three or four hours, according to the nurse's chart.

On April 14th, at 6 A. M., the nurse noted that the heart rhythm was regular, 69 to the minute, with no pulse deficit. The patient was seen at 7.35, when she said she felt very well but noted that her heart gave an occasional jump. At 7.38, the nurse re-entered the room, found her moaning, with face markedly cyanotic, hands clenched, pulse not perceptible and respirations deep and sighing. At 7.40 A. M. respirations ceased.

Necropsy was performed four hours after death. The heart was markedly dilated, especially the right auricle. No ante-mortem clots were found in any of the chambers, the walls of which were quite smooth. The mitral valve was

a little puckered in places, but there were no organized or fresh vegetations on any of the valve leaflets. There was definite hypertrophy, especially of the left ventricle. The heart weighed 400 gms. The coronary arteries were patent and contained no thrombi or emboli.

The lungs were emphysematous. The pulmonary arteries were carefully dissected out to their small ramifications, but no pulmonary embolus was discovered.

The other necropsy findings were irrelevant to the present discussion. Permission to examine the brain was not obtained.

The question is often asked, "Are patients in whom regular rhythm has been restored better off than they were as fibrillators?" When the normal mechanism can be maintained, the answer is an unqualified "Yes." They are better because consciousness of the heart's action and the sense of substernal oppression have disappeared; they are better because it is no longer necessary continually to take digitalis, as patients with fibrillation usually must in order to maintain a slow ventricular rate; they are better because the response of the heart to effort is better regulated; and they are better because they know that the heart rhythm is regular, like that of a normal individual.

CASES IN WHICH RESTORATION OF THE NORMAL RHYTHM WAS NOT ACCOMPLISHED.

This group of 14 cases was distinguished clinically by the fact that in all there was conspicuous cardiac enlargement. This may be taken as evidence either of serious derangement of cardiac mechanics by valvular disease or of extensive myocardial involvement, or perhaps of both. The average duration of symptoms and the known duration of fibrillation in these patients did not differ materially from the figures for the first group. The amount of quinidine given in one course ranged from 1.6 to 8.4 gms., administered in from 2 to 10 days. The average dose was 4.6 gms., given in a 5 day period. These averages are a little higher than for the cases in the first group. Unpleasant symptoms were common. In the order of frequency these were: headache, palpitation, nausea or vomiting, epigastric distress, giddiness, diarrhea, precordial pain and fever. Tachycardia was the rule and in one case persisted until outspoken heart failure resulted. In this case the symptoms were promptly relieved by digitalis medication.

Two abnormal heart rhythms which give evidence of intoxication of the heart muscle by quinidine merit special consideration. The first of these is the *extrasystolic irregularity*, consisting of frequent ventricular premature contractions, sometimes coupled with normal beats. In quinidine as in digitalis therapy, this arrhythmia is an

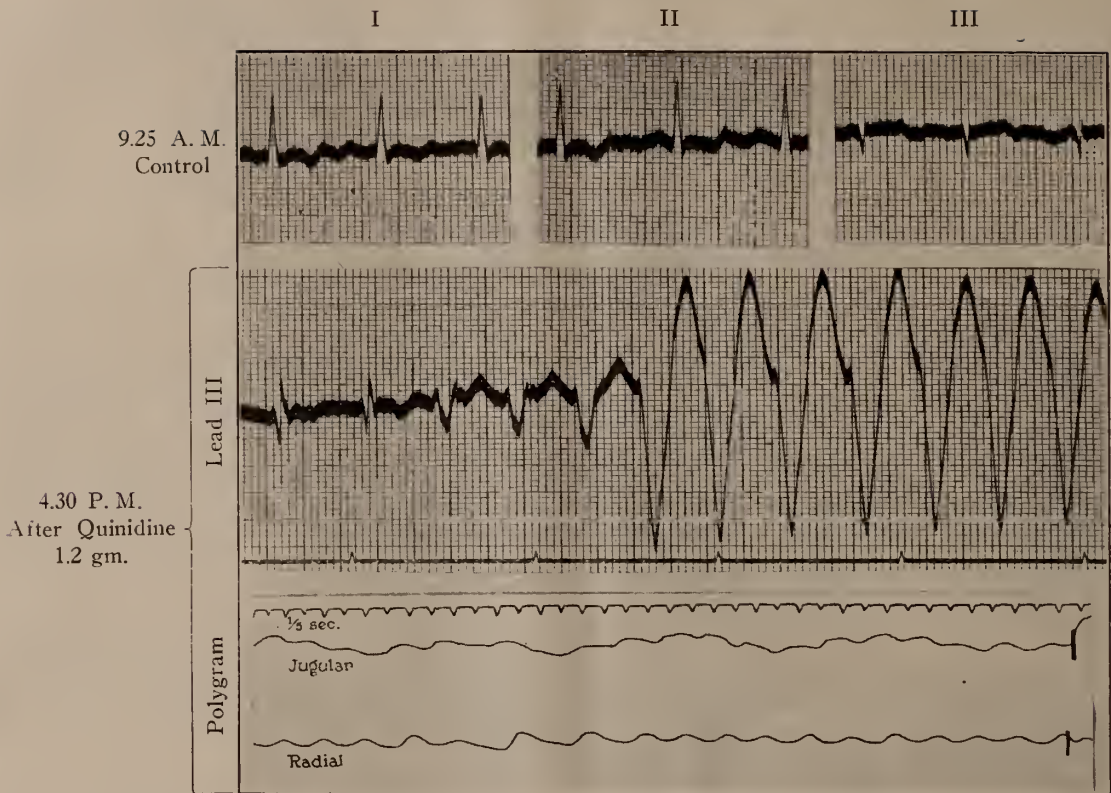


FIG. 1. 9.25 A. M. Electrocardiogram (Leads I, II and III), shows auricular fibrillation. Quinidine 0.4 gm. given at 10.30 A. M., 12.30 and 2.30 P. M. 4.30 P. M.—Electrocardiogram (Lead III), shows a series of ectopic ventricular complexes followed by a rapid succession of ectopic beats having their origin in the left ventricle (ventricular tachycardia). The polygram, made at the same time, serves to illustrate the difficulty of diagnosing the arrhythmia by the use of jugular and radial tracings.

indication to desist from further exhibition of the drug. If the warning is not heeded, the second and more serious irregularity may follow. This is termed *ventricular tachycardia* and consists of a rapid volley of ectopic ventricular beats occurring at fairly regular intervals. Though this irregularity is readily detected with the electrocardiograph, it is difficult to diagnosticate with accuracy either by the ear or by means of polygraphic tracings (See Figure 1). As is evident from the case whose records are here reproduced, ventricular tachycardia may result from comparatively small doses of quinidine, *i. e.*, 1.2 gm. This arrhythmia assumes great clinical significance if it is borne in mind that in dogs injected with digitalis or strophanthin it is the immediate forerunner of ventricular fibrillation and death. Ventricular tachycardia has been observed five times in our series of cases, but has been promptly recognized and quinidine therapy at once discontinued. Under these circumstances it was transitory, disappearing in the course of several hours.

In the light of present knowledge, it is as yet difficult to select from the various cases of auricular fibrillation which present themselves for treatment those which will do well with quinidine. It is suggested that patients with large hearts, especially if there are multiple valve lesions, be treated with caution. Cases without valvular disease and with but little evidence of hypertrophy have, in our relatively small series, fared well.

In view of the possibility of the occurrence of occasional embolic phenomena and of serious disturbances in the cardiac rhythm it must be urged that, until the criteria for choosing favorable cases are more clearly defined, patients with auricular fibrillation receive quinidine in bed, under careful supervision and preferably in a hospital, where the behavior of the heart can be studied with the aid of graphic records. Carefully administered, this drug is a therapeutic agent of great value; indiscriminately given, it may, on occasion, be expected to cause disastrous effects.

HELIO THERAPY IN TUBERCULOSIS.*

By HORACE LO GRASSO, M.D.,

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HISTORY tells us that the pagans worshipped the sun as a source of health and happiness. The Greeks used the water lens to focus the sun's rays on sores and wounds. Thus while the step to heliotherapy may be a step backward, nevertheless, it is a step to nature and health.

Too long have the energies of the solar spectrum been latent energies to the modern medical profession. In our enthusiasm to find a cure for diseases we have been looking for something complicated, something mysterious, while out in the light of the sun lies the secret of health and the cure of ills.

While Bonnet, Poncet, Ollier and Bernard stand as modern pioneers in that they first recognized the value of the sun in the treatment of wounds and joint and bone disease, it is Dr. Rollier that we must look upon as the father of heliotherapy; for it was he who in 1903 first introduced it on a large scale and on a sound scientific basis.

The Rollier method of solar radiation was instituted at the J. N. Adam Memorial Hospital in 1913 by Dr. John H. Pryor after an exhaustive study of the method in various clinics of Europe. At the beginning of our experiment, heliotherapy was ridiculed both by the laity and by the medical profession, but with the indomitable force of will and the enthusiastic support of Dr. Pryor back of us we succeeded not only in dispelling the apathy and gaining the hearty cooperation of the citizens and physicians of Buffalo, but in so winning their confidence that the city is now investing over a million dollars in our new addition already under construction. Starting with but a few cases in 1913 we have now under treatment 175, and, with the completion of our new buildings, the number will be increased to about 275. The work will stand as a fitting monument to Dr. John H. Pryor, the undaunted pioneer of heliotherapy in this country.

The J. N. Adam Memorial is one of Buffalo's municipal hospitals and is situated in the beautiful Cattaraugus Hills at an elevation of 1,600 feet above sea level, in the village of Perrysburg. It is 42 miles from Buffalo and 10 miles from Lake Erie. It is well protected from the prevailing winds by a large tract of woodland. The location, although ideal for this part of the country, does not enjoy the eternal sunshine and clear skies with which centres of heliotherapy are usually associated by those who are not familiar with solar radiation.

Dr. Rollier himself, with the whole Swiss Alps to choose from, has weeks and months of dis-

agreeable weather when sun-cure has to be discontinued or curtailed. Therefore, let us not feel discouraged and lose hope because we do not happen to be blessed with bountiful sunshine of our Middle, Western and Southern States. Let us give our patients the benefit of whatever sun we have. We cannot be following the sun around the world.

Solar radiation can be successfully practiced anywhere and our results at Perrysburg should arouse not only the medical profession but every municipality to encourage the building of suitable quarters in connection with tuberculosis hospitals where the so-called surgical cases can have the sun-treatment.

The secret of our success is that we have scrupulously followed Dr. Rollier's method which is based on the conclusions derived from years of experience.

In visiting institutions where heliotherapy is supposed to be practiced, I have found a disregard of even fundamental principles of the sun-cure. For instance, patients with knee lesions were seen taking radiation in chairs, or on the floor, fully dressed, with the trouser leg rolled up to expose the knee. In foot cases, all the clothing was worn except the shoe and stocking, and those with elbow lesions simply drew up the sleeve. Thus the treatment was purely local, and those in charge were evidently losing sight of the fact that surgical tuberculosis is only a manifestation of a general disease in which resistance plays a major rôle, and in which we must bring into play every aid at our command. Then I have frequently seen examples of the other extreme, where the whole body was exposed for several hours at a time the very first day. This treatment is too drastic, and is not only dangerous for patients in a weakened condition but is likely to prove harmful even to the most robust. Again, we noticed that not only was no provision made for immobilization and the prevention and correction of deformities, but patients were permitted fatiguing exercise, in spite of the accepted fact that rest is one of the most potent factors in the cure of tuberculosis. In our work, we discard all casts so that the sun can have access to the whole body, but we have worked out other contrivances, which I shall describe later, which serve to fix the part without interfering with insolation. Sun-cure, to be of value, must be correctly given; and, unless it is, a great deal of harm may result from its use.

It is best that the patient, before he is started on the sun, should be gradually accustomed to the out-of-door life. The length of time required for this preliminary process depends upon the physical condition of the patient and the season of the year. A robust patient used to out-door living may be started at once during the warm months; while the hectic emaciated and bed-ridden patient must be handled most cautiously.

* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 18, 1922.

A slight breeze striking the body in these cases will cause irreparable harm even during the warm weather.

It is advised before the treatment is instituted, that a record be made of the temperature and pulse and of the blood and urine findings. Cases with temperature and with emaciation must be insolated more gradually and less intensely and it may be necessary to discontinue the radiation for a few days if it is found that the temperature rises.

No sun-bath must be given for at least an hour before and two hours after the mid-day meal. During the hot summer months no radiation must be given during the middle of the day as the sun at this period is very depressing and is likely to cause reaction, such as rise of temperature, nausea, rapid pulse, headache and other constitutional disturbances.

After each insolation the patient may be rubbed with spirits of camphor, and, if the skin is very sensitive, with some vegetable oil such as coconut or olive oil.

The following method, which is practically the one used by Dr. Rollier, is carried out at the J. N. Adam Memorial Hospital:

First Day—The patient with his eyes protected from the sun by colored glasses or a towel and his head by a linen cap or a bonnet, is placed in bed and rolled out on the sun porch, dressed only in trunks and covered by sheets or blankets depending upon the season. The feet are exposed and bathed in the sun's rays for five minutes, three or four times at hour intervals.

Second Day—The feet are insolated ten minutes and the legs from ankles to knees five minutes, three or four times at hour intervals.

Third Day—The feet are insolated fifteen minutes, the legs from ankles to knees ten minutes, and the thighs five minutes, three or four times at hour intervals.

Fourth Day—The insolation of the previously exposed parts is increased by five minutes, and the abdomen is exposed five minutes, three or four times at hour intervals.

Fifth Day—Again the insolation of the previously exposed parts is increased by five minutes, and the chest is exposed five minutes, three or four times at hour intervals.

Sixth Day—If the condition allows it, the patient is turned on his abdomen, and the same course as described above is repeated.

Provided that the patient's condition allows it, instead of waiting for the sixth day to turn him on his abdomen in order to insolate the back of the body, from the first day we insolate the front and back of every exposed part alternately three or four times a day at hour intervals.

The solar radiation is increased five or ten minutes each time until three or four hours daily are taken. During insolation sinuses and ulcers

are covered only by a wire screen so as to allow the rays of the sun to play upon the lesions.

If during this preliminary treatment for any reason the sun bath is interrupted, the insolation should be resumed at a stage a little earlier than that at which it was stopped.

The above method of insolation is the most satisfactory but to some it has been found somewhat complicated. We have tried the following simpler method in which the whole body is exposed from the very first day and have found it satisfactory during the warm weather and with robust patients.

The first day the patient, using the same eye and head protection as with the above method, is insolated for two minutes three times in the morning and three times in the afternoon at hour intervals. Each of the six exposure periods is increased two minutes daily for fifteen days, when the total daily period of radiation will have reached three hours.

The number of exposures may then be reduced to two in the morning and two in the afternoon at hour intervals.

Strong and robust patients may take four hours of sun a day but three hours is sufficient for the majority of patients.

On days when sun-cure is not feasible an air bath is given by exposing the naked body to the air. The duration of this air exposure depends upon the amount of tan and the physical condition of the patient. Up cases with deep pigmentation may be exposed five to fifteen minutes at a time with no ill effects. I have allowed some children to play in the snow for as long as an hour at a time.

At this point I wish to emphasize the importance of wind protection, when giving air baths during cold weather. It is absolutely necessary that no breeze should strike the body. Even when exercising, well protected places must be selected, unless the days are very calm.

Throughout the summer months our children rarely dress but go to their meals and roam around the grounds and woods in their trunks.

During the winter months when the sun has not been available, we have for the last seven years used the Alpine Sun Lamp. Our results in superficial lesions have been satisfactory, but we have not noticed the favorable general results that have been lately reported.

In the last two years we have used in cases of stubborn sinuses and ulcers that have not responded to sun treatment, the Thezac Porsmeur lens in conjunction with the general exposure. This is a bi-convex lens, 12 inches in diameter with a focus of 72 inches. It is so focused on the lesion that it forms a circle from 6 to 8 inches in diameter. The rays are thus focused for five minutes the first day and the period is gradually increased each day until an hour or two of exposure is reached. This lens has also been found

very useful in alleviating pain. Mrs. G. T. Post of Newport, R. I., presented to us the first lens. We have at present eighteen of them in constant use.

This last winter we have been experimenting with the arc light but I am not ready to report on it as we have not yet given it a fair trial.

None of the artificial means by which heliotherapy has been imitated have given results that can begin to compare with those of the sun-cure, and up to the present the natural sunlight, free from dust and smoke, stands unchallenged.

In the course of the sun treatment the skin gradually takes on a bronze hue, then a copper color, and finally a beautiful chocolate brown. As pigmentation progresses, the skin becomes supple and velvety and free from blemishes.

What surprises our visitors the most is the perfect physical development and firm musculature of patients who have been in bed for even years.

We have found, as Dr. Rollier has, that the favorable progress of the cure is in direct proportion to the intensity of the pigmentation. Patients do not seem to show much improvement until tanning takes place.

Persons of the brunette type tan the best while the freckled and red-haired are the poorest subjects. The latter burn easily but with perseverance they will finally tan. It sometimes takes a year for this type to show pigmentation.

The effect of solar radiation on the general condition of the patient is very gratifying to patient and physician alike. The haggard and spiritless appearance gives way to one of cheerfulness and animation. There is a rapid alleviation of pain and usually within two weeks complete disappearance; temperature gradually comes down to normal; appetite returns; weight and strength are taken on rapidly and the blood condition improves. Both the haemoglobin and red cells increase, leucocytosis if present becomes reduced and an actual lymphocytosis takes place.

The outstanding local result in the not too advanced cases of joint tuberculosis is the gradual restoration of motion, partial or complete, in the affected joint. Whereas in the ordinary expectant treatment with casts, or by the operative procedure, the prognosis depends upon the completeness of the ankylosis, in heliotherapy the aim is to restore the full function of the joint.

The action of the sun upon bone tissue is one of repair. There is an intense recalcification and a spontaneous expulsion of sequestra. The effect upon lymph nodes is one of gradual shrinkage and in broken down glands very often one of absorption or calcification.

The effect on effusions is one of absorption. This is best noticed in peritonitis and pleurisy.

Abscesses are usually absorbed but they frequently become calcified. Oftentimes they have to be repeatedly aspirated.

Sinuses at first react, as shown by profuse discharge and sloughing, but this is followed by the formation of healthy granulations and the gradual drying up and healing of the sinus.

The discarding of all casts in heliotherapy has led many to believe that immobilization is dispensed with in sun-cure. As I have brought out in previous articles, immobilization is one of the requisites in solar radiation. I cannot emphasize it too strongly that the Rollier method of heliotherapy is not mere insolation, but a combination of the sun treatment along with a specially devised method of fixation by rest in bed, by traction and by positions arranged with hard pillows—a combination which increases the resisting power of the patient, preserves or restores the natural function of the joint and prevents or corrects deformity.

A bed with a surgical spring is employed in Pott's disease and in bone and joint tuberculosis of the lower extremities.

In children, immobilization is accomplished by means of straps made of webbing placed around the chest and legs and fastened to the side of the spring. Adults as a rule do not need any artificial immobilization. Traction is effected by leather cuffs that grip the thigh above the knee and the leg above the ankle. These are connected by straps that buckle at the side so that the pull will be at both the knee and the ankle and may be increased or decreased at will at either joint by shortening or lengthening the side straps. In case of tuberculosis of the knee the leather brace above the knee is discarded.

In Pott's disease immobilization is accomplished in children as stated above while with adults we use absolute rest in bed. A hard pillow is placed under the kyphos and, when the patient is turned on his stomach, a triangular pillow with the base up is inserted under his chest, thus producing a compensating lordosis in both positions. In this way the deformity, unless very severe and ankylosed, is gradually reduced without interfering with complete insolation of the body.

In tuberculosis of the hip, if there is a flexion deformity, the flexion is gradually reduced by traction, pulling in the direction of the deformity. The limb is supported on an incline of wood or hard pillows the angle of which is gradually reduced until the limb is in line with the body. When the patient is turned on his stomach the traction is removed and the incline is then placed in the opposite direction. Abduction, adduction and rotation are corrected by means of a side working extension that grips the leather cuff above the knee and fastens on a roller that runs along the side of the bed. After the flexion deformity, if present, has been reduced, the hips are placed in hyperextension by placing a small hard pillow under the hips.

In tuberculosis of the knee immobilization is effected as in the cases of spine and hip. De-

formity is corrected by traction as in this disease. Whereas in hip the traction pulls from above both the knee and ankle, in the case of the knee the pull is only from above the ankle. Subluxation of the tibia is prevented by placing a pad underneath the head of the tibia and corrected by placing the leg on a splint suspended with rubber bands. After the knee is straightened the whole limb is placed on an incline made of board or pillows to avoid equinus.

In tuberculosis of the foot and ankle the limb must be placed, as in the case of knee tuberculosis, in an inclined plane to obviate equinus, which is sure to take place unless special precaution is taken. A splint may be used with a joint at ankle so that the foot may be kept, or brought, to its normal angle.

In tuberculosis of the shoulder joint, no special immobilization or traction is used unless there is considerable displacement, in which case weights are hung from a leather cuff fastened just above the elbow. The weight of the arm itself, which acts as a natural tractor, is usually sufficient in these cases.

In tuberculosis of the elbow, the joint is immobilized in half flexion by means of a wire or celluloid splint open in front. It is jointed at elbow and includes hand at slight radial flexion.

In tuberculosis of the wrist and joints of the hand we use a similar splint, except that the arm is not included.

In tuberculosis of all joints except the spine, after the flexion deformity has been reduced, we repeatedly flex and extend the joint by degrees so slight as not to produce spasm or pain.

In peritonitis we keep the patient in bed until all sinuses have been healed and there is no more evidence of fluid present.

In tuberculosis of the genito-urinary tract, if there is a marked cystitis we insist upon absolute rest in bed.

In tuberculosis of the lymph nodes no bed treatment is required outside of the three or four hours of the sun treatment, unless it is indicated by poor physical condition.

The same may be said in cases of tuberculosis of the eye, rib, face and upper extremities.

We believe in only moderate exercise even with our best cases.

During the last year I have worked on a bed which I hope will make the use of pillows for the correction and prevention of deformities unnecessary. This bed has a surgical spring with several joints by which different angles may be obtained at will. The correct positions are thus obtained with less effort to patients and attendants. Canvas may be used on two or three sides of the bed for wind protection, which is essential during the cold weather.

Sinuses and ulcers are covered with a screen during insolation to protect from flies and to allow the sun access to the part. They are

cleaned with alcohol and dressed with a gauze moistened with same.

The only surgical interference that we have used is aspiration. Occasionally when the pus has been very thick, I have resorted to the use of a very narrow-bladed knife. A healthy part of the skin is always chosen for the aspiration or incision to avoid the possibility of a sinus. After the aspiration or evacuation of the pus, a slight pressure with a piece of gauze is applied to prevent bleeding into the abscess cavity.

Dr. Rollier, outside of aspiration, condemns any and all surgical interference. We believe that there are times when surgery is advisable, but even then it should be judiciously combined with heliotherapy. The operation should be delayed until the sun has had a chance to do its work not only on the affected part but on the general condition of the patient, thus assuring a more favorable result. We have seen many instances in which a few months of sun-cure have changed the whole aspect of cases which at first had appeared hopeless.

Dr. Rollier's writings seem to give the impression that the sun can restore motion in any joint even where there has been considerable destruction and ankylosis of long standing. Unfortunately, our experience has not always borne out this result, but we feel satisfied that there is no method that will do more for surgical tuberculosis than heliotherapy under careful orthopedic supervision.

As recovery with sun-cure is necessarily a rather slow process, the prolonged treatment often reacts upon the mental attitude of the adult patient and that doubtless is why our best results are had among the children. Fortunately, deep X-ray therapy promises to come to our aid by shortening the duration of the sun-cure of surgical tuberculosis by one-third to one-half. Through the courtesy of Dr. Gaylord, director of the State Institution for the Study of Malignant Diseases, we have treated during the winter months twenty of our surgical cases, and we are so well satisfied with the results that we have already under construction a special building for deep X-ray treatment. This will be ready some time during the summer. In the meanwhile we are taking advantage of Dr. Gaylord's kind offer and are radiating our cases at his institution.

STATISTICS

In compiling our statistics, we have adopted the following temporary classification for our results of treatment:

Tuberculosis of Bones and Joints.—Apparently recovered. Cases in which all symptoms such as pain, fever, etc., have disappeared, and all sinuses and ulcers have healed. The patient must have been up and walking about with no return of symptoms or signs for at least six months.

Arrested. Cases in which all symptoms such as pain, fever, etc., have disappeared, and all sinuses and ulcers show no activity or have healed. The patient may be up and walking about, or may still be in bed. Improved. Cases in which all symptoms and signs show evidence of improvement.

Peritonitis.—Apparently recovered. Cases in which all symptoms such as pain, fever, etc., have disappeared, and all fluid in the peritoneal cavity has been absorbed and palpable masses in abdomen have been reduced. All sinuses and fistulas must be healed. The patient must be up and walking about at least three months without evidence of return of symptoms or signs.

Arrested. Cases in which all symptoms such as pain, fever, etc., have disappeared, and all fluid has been absorbed. Sinuses and fistulas must either be healed or show no signs of activity.

Improved. Cases in which all symptoms and signs show evidence of improvement.

Cervical Adenitis.—Apparently recovered. Cases in which all symptoms such as fever, etc., have disappeared, and all abscesses and ulcers have healed. The lymph glands must be unpalpable or reduced to nodelike enlargements. This condition is to have existed without any return of symptoms or signs for at least three months.

Arrested. Cases in which all symptoms have disappeared, and all abscesses and ulcers show no evidence of activity or have healed, and the glands have been reduced, but not necessarily to nodelike enlargements.

Improved. Cases in which all symptoms and signs show evidence of improvement.

Tuberculosis of the Kidneys.—Apparently recovered. Cases in which all symptoms such as fever, pain, etc., have disappeared and the periods of urination have become normal or their frequency has diminished. The urine findings must be negative both by microscopic examination and by animal inoculation. Cystoscopic examination must show healed lesions, if tuberculous cystitis was present. This condition must have existed for at least six months.

Arrested. Cases in which all symptoms such as fever, etc., have disappeared, and frequent and painful urination has abated. Urine findings may be positive or negative.

Improved. Cases in which all symptoms and signs show evidence of improvement.

Tuberculous Epididymitis.—Apparently recovered. Cases in which all symptoms such as pain, fever, etc., have disappeared, and all enlargement and hardening of epididymis and spermatic cord have been reduced, and sinuses and ulcers have healed. This condition must have existed for at least three months.

Arrested. Cases in which all symptoms have disappeared, and all sinuses and ulcers show no activity or are healed. The enlargement and hardening of the epididymis and spermatic cord must be diminished.

Improved. Cases in which all symptoms and signs show evidence of improvement.

RESULT OF TREATMENT OF SURGICAL TUBERCULOSIS FROM 1913 TO 1922 IN ALL CASES WHO REMAINED IN THE HOSPITAL OVER THREE MONTHS

AVERAGE LENGTH OF STAY, 12 MONTHS, 27 DAYS

	Glands	Peritonitis	Spine	Hip	Sacro-Iliac	Knee	Ankle and Foot	Shoulder	Elbow	Wrist and Hand
Apparently Recovered	244-83%	63-81.8%	16-32%	35-60.4%	....	13-46%	13-72.2%	....	4-57.1%	15-78%
Arrested	28-9.4%	10-12.9%	14-28%	11-18.9%	2-100%	9-32.1%	3-16.5%	3-100%	3-42.8%	4-21%
Improved	18-5.8%	....	8-16%	7-12%	....	3-10.5%	2-11%	....	....	....
Unimproved	4-1.4%	4-5.1%	9-18%	4-6%	....	2-7%	....	....	....	....
Dead	4-0.4%	....	3-6%	2-3.4%	....	1-3.5%	....	....	....	....
	294 or	77 or	50 or	59 or	2 or	28 or	18 or	3 or	7 or	19 or
Total	44.1%	11.5%	7.5%	9.3%	.3%	4.2%	2.7%	.4%	1.0%	2.8%

	Humerus	Femur	Ischium	Sternum	Osteo-myelitis	Kidney	Epididymitis	Eye	Lupus	Total
Apparently Recovered	....	2-50%	1-100%	2-66 $\frac{2}{3}$ %	8-50%	4-16.4%	6-66.6%	15-93.7%	2-50%	443 or 66.5%
Arrested	1-100%	1-25%	....	1-33 $\frac{1}{3}$ %	6-37.5%	13-54.4%	2-22.2%	1-6.25%	1-25%	113 or 16.9%
Improved	....	1-25%	....	....	2-12.5%	4-16.4%	1-11.1%	....	1-25%	46 or 6.9%
Unimproved	....	....	....	....	....	2-8.2%	....	....	....	25 or 3.7%
Dead	....	....	....	....	....	1-4.1%	....	....	....	8 or 1.0%
	1 or	4 or	1 or	3 or	16 or	24 or	9 or	16 or	4 or	635 or
Total	.15%	.6%	.15%	.4%	2.4%	3.6%	1.3%	2.4%	0.6%	100%

We have discharged from 1913 to 1922 six hundred and thirty-four cases of surgical tuberculosis that remained in the hospital three months or more.

Seventy-eight per cent of the adults and eighteen percent of the children discharged showed a pulmonary lesion.

Fourteen per cent of the bone and joint cases in adults and twenty-one per cent in the children had multiple surgical lesions.

Fifty per cent of the bone and joint cases in adults and forty-four per cent in children had sinuses and secondary infections.

Thirty-six per cent of the bone and joint cases in adults and twenty-seven per cent in children had had surgical interference.

Seventy-six per cent of all of our joint cases were discharged with partial or full motion.

The average duration of illness of all of our bone and joint cases before admission was two and one-half years.

Of the cases that died among the gland cases the cause of death was other than tuberculosis. Of the three cases of Pott's disease, two died of influenza during the epidemic and one had a psoas abscess rupturing into the intestine, causing death within a few days.

The knee and epididymitis cases also died of influenza during the epidemic. The two hip cases were far advanced, of several years' duration, and showed amyloid changes.

A large number of our unimproved cases were in an advanced stage of the disease and practically all had sinuses and secondary infection. Some showed amyloid changes.

Many of our arrested and improved cases, if they had remained long enough in the institution, might have been discharged as recovered. As soon as a patient feels good and is allowed to be up and about he is likely to become restless and anxious to go home. This restlessness is increased by the imprudent remarks of friends and relatives who judge only from outward appearances. A little better judgment and more perseverance on the part of both patient and family might have assured better results.

Statistics clearly prove that solar radiation can be successfully applied not only in surgical tuberculosis, but in cases of puerperal sepsis, anemia, rickets, osteomyelitis and non-healing wounds, and in convalescence from all wasting and infectious diseases. I merely mention this in the hope that the interest of the medical profession will enkindle in the mind of the layman an enthusiasm and a strong public opinion which will not rest until there is in connection with every general hospital a convalescent centre in the suburban district where the patient can share in the healing qualities of the sun and the invigorating influence of fresh air.

In conclusion I would like to call your attention to the fact that the sun's rays are even more powerful in their prophylactic energies than in

their therapeutic properties. We should not wait until disease has laid its withering hand on the flowers of the race before we place them in the light that they love and on which their health depends. Instead of plunging our civic pride and expending our civic funds on school buildings exteriorly magnificent in their architectural proportions and interiorly perfect in their arrangement to satisfy every whim and convenience of pupil and teacher, it would be better to use a little common sense and provide school buildings every class room of which will be flooded at all times with sunshine and fresh air. Instead of squandering large sums of money in elaborate and expensive indoor gymnasiums let us give our children playgrounds and parks for outdoor recreation. Though we may now save even after disease has inflicted its wound it would be far better if there never was a wound.

PRODUCTION OF ANTI-SHEEP AMBOCEPTOR IN A MULE.*

By RUTH GILBERT.

(From the Division of Laboratories and Research, New York State Department of Health, Albany. Augustus Wadsworth, M.D., Director.)

MOST of the amboceptor used in the complement fixation test for syphilis has been produced in rabbits. As some of the animals die during immunization and others do not produce a satisfactory product, considerable time is spent in caring for, inoculating and bleeding them, as well as in testing trial bleedings and standardizing the amboceptor. The use of a large animal would, therefore, be very desirable where much of this reagent is required.

O'Brien¹ refers to anti-sheep amboceptor in horse serum. His article deals with the rate of production of various constituents of the blood of immunized horses after a large bleeding.

Boerner² reports examining serum from 200 horses, four of which contained natural anti-sheep amboceptor.

Kolmer and Rule³ mention the use of the horse in the production of amboceptor.

In June, 1920, it was decided to attempt the immunization of a horse with sheep cells. Horse number 47 was chosen for the purpose. It had been used from July 13, 1916, to August 5, 1918, for the production of anti-meningococcus serum; from February 5, 1919, to April 7, 1920, for diphtheria antitoxin and from April 7, 1920, until June 29, 1920, it was bled for serum to be used in media preparation. A trial bleeding showed no natural anti-sheep amboceptor in the undiluted serum. Intravenous inoculations of washed sheep cells were made on Tuesdays and Fridays. Twenty cc. of fifty per cent cells were

* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 19, 1922.

given as a first dose. This was increased until at the end of four weeks 400 cc. of fifty per cent cells were given. This dose was not further increased during the next four weeks. When 150 cc. of fifty per cent cells had been given, a preliminary dose of 5 cc. of packed cells diluted with saline solution to 50 cc. was given about an hour before the remainder of the dose was injected, as it was thought this procedure would tend to prevent an anaphylactic shock.

The temperature of the horse on the mornings following the inoculations was normal, except on one occasion when it was found to be 101.4° F. The temperature on the evenings after the inoculations varied from nearly normal to 104° F. The treatment did not appear to harm the animal. It ate well and appeared to be in normal condition.

The titre of the amboceptor in the serum rose very slowly. After seven and a half weeks of inoculations 0.06 cc. of a 1-200 dilution gave complete hemolysis of 0.1 cc. of five per cent sheep red blood cells in the presence of 0.1 cc. of 1-10 guinea pig complement.

The eighteenth inoculation was given without the preliminary small dose of cells in the hope that the shock might increase the production of amboceptor. Six days after the nineteenth dose had been given a large bleeding was made followed by a dose of 410 cc. of fifty per cent cells the next day. Six days later two doses of 400 cc. were given on successive days. After an eight-day interval a single dose was given and after five days the horse again received two successive doses. Seven days afterwards the last dose of 475 cc. was given. A full bleeding was made five days later. The titre of the amboceptor dropped during this treatment. The trial bleeding taken before the last inoculation showed complete hemolysis in 0.07 cc. of a 1-100 dilution only.

A litre of the serum from the first full bleeding was precipitated by one of the chemists† in the State Laboratory according to the method used for antitoxin. The euglobulin, pseudoglobulin and albumin fractions were tested. As in the case of rabbit serum, Gilbert and Van Saun⁴ found that the hemolytic amboceptor was present in both the euglobulin and pseudoglobulin fractions and only a faint trace was present in the albumin fraction. In this instance both the euglobulin and pseudoglobulin fractions gave complete hemolysis with 0.07 cc. of a 1-400 dilution. The albumin fraction produced only a trace of hemolysis when undiluted; 0.07 cc. of a 1-200 dilution of the unfractionated serum gave complete hemolysis.

Agglutinins for sheep cells were found to be present in the fractions of the serum containing the amboceptor. In the case of the pseudoglobulin fraction there was slight agglutination in the

1-1000 dilution, the euglobulin in the 1-160 and in the whole serum in the 1-80 dilution. No agglutinins were present in the albumin fraction. Amboceptor with agglutinins present in such high dilutions when compared with the titre of the hemolysins is unsatisfactory for use in the complement fixation test.

It had been noticed that normal rabbits whose blood contained natural amboceptor were usually satisfactory for the production of hemolysins. It was thought advisable, therefore, to have the serum from a number of normal mules and horses tested for natural anti-sheep amboceptor.

Trial bleedings from sixteen mules, seven horses and one colt were tested for hemolysins and agglutinins for sheep red blood cells. The serum from three of the mules showed considerable hemolysis when tested undiluted, one specimen causing nearly complete hemolysis through 0.02 cc. and another through 0.03 cc. The serum of one of the horses contained a trace of amboceptor when tested undiluted. The serum from the colt contained a slight amount of amboceptor, partial hemolysis being obtained with 0.1 cc. of undiluted serum. A trace of hemolysis was produced by the serum when diluted 1-10. The serum from these animals showed no agglutinins for sheep cells. The serum from seven of the others (four mules and three horses), however, did contain agglutinins for these cells.

It was decided to immunize the mule whose serum showed hemolysis in 0.03 cc. (the animal giving the slightly better reaction had diphtheria antitoxin in sufficient quantity to warrant its use for that purpose). The immunization was commenced March 22, 1921. Intravenous inoculations were made twice weekly. The first dose consisted of the cells from 20 cc. of sheep blood. The dosage was increased as rapidly as possible, but since, after the fifth dose, each inoculation generally produced a marked reaction in the mule, either at the time or soon after, 185 cc. of packed cells was the largest amount that could be given. The titre of the amboceptor increased rapidly. The serum taken twenty-four days after the first inoculation had a titre of 1-1400—that taken fifteen days later had a titre slightly above 1-2000. The agglutinins in the serum stayed very low, there being merely a trace in the 1-500 dilution.

Full bleedings were made on April 15, 23 and 30, 1921, and on May 14. After this the animal was allowed to rest until August 16 at which time the titre of its serum was about 1-100. Small doses were then given beginning with 5 cc. of packed cells and not exceeding 20 cc. of packed cells. In ten days the titre of the serum was 1-1200.

As the routine work in the diagnostic department was heavy the animal was a second time allowed to rest. October 14, 1921, the inocula-

† I am indebted to Mr. C. J. Wood for this work.

tions were again started and continued until the 28th. Fifty cc. of packed cells were given as the last dose. The titre of the bleeding made November 4, 1921, was 1-1600. On the 13th and 17th of January, 1922, 40 cc. of packed cells were given. The bleeding made seven days later had a titre of 1-2500. Traces of agglutinins were present in the 1-300 dilution only.

Each time that the mule was inoculated it reacted so markedly that often the full dose prepared could not be given. The animal's temperature would rise after the inoculation and sometimes remain high for several days. It refused to eat and sometimes its legs would swell. Occasionally there were nosebleeds, chills and perspiring at the time of inoculation and afterwards the animal would be reported "down in the stall." The best product, however, seems to be obtained by giving a few doses of sufficient size to induce a marked reaction.

One of the workers in the State Laboratory* following the method of Clock and Beard (*Jour. Inf. Dis.*, 1917, 21, 404), has found that amboceptor preserved with an equal volume of glycerine keeps its titre for at least a year, and that the species of bacteria and moulds usually found as contaminants will not develop in amboceptor thus preserved. She has not been able to determine that the glycerine used has any effect on the complement fixation test. Large amounts of amboceptor have been preserved by this method.

A series of 422 complement fixation tests for syphilis were made in duplicate, using amboceptor produced in rabbits and amboceptor from the mule. The results of 415 of these tests agreed exactly. In the seven other instances the differences were so slight that they fell well within the limits of experimental error. Since May 16, 1921, the amboceptor from the mule has been used in all of our routine tests. It has been found satisfactory in every respect.

CONCLUSION:

We were unsuccessful in producing satisfactory amboceptor in a horse whose serum before immunization contained no detectable amount of natural anti-sheep amboceptor.

The concentration of the serum by the method used for antitoxin did not improve the product since the agglutinins were present in marked degree in the same fractions as the amboceptor.

By using a mule with a considerable amount of natural anti-sheep amboceptor in its serum large quantities of a high titre amboceptor were produced.

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- (4) Gilbert and Van Saun: *Am. Jour. Syph.*, 1918, 2, 755.

* I am indebted to Miss H. V. Langworthy for this work.

Deaths.

- BARIGHT, HERBERT EDWIN, Saratoga Springs; University of Michigan, 1893; Fellow American Medical Association; New York Academy of Medicine; Member State Society. Died May 27, 1922.
- BARRETT, FREDERICK JAMES, New York City; College of Physicians and Surgeons of New York, 1905; Fellow American Medical Association; Member State Society; Consulting Physician Lincoln Hospital; Associate Physician New York Post-Graduate Hospital. Died April, 1922.
- BEAUDRY, ELMER B., New York City; New York University, 1883; Member State Society; Associate Obstetrician Union Hospital; Pediatricist Fordham Hospital. Died May 22, 1922.
- BROWD, EPHRAIM K., New York City; New York University, 1886; Member State Society; Alumni St. Mark's Hospital; Gynecologist People's Hospital. Died May 15, 1922.
- CHILDS, JOHN H., New York City; College of Physicians and Surgeons of New York, 1905; Fellow American Medical Association; Member State Society. Died May 24, 1922.
- CLAIBORNE, JOHN HERBERT, New York City; University of Virginia, 1883; Fellow American Medical Association; American College of Surgeons; Member State Society; Academy of Medicine; Consulting Ophthalmologist Flushing Hospital. Died May 27, 1922.
- FAY, FRED SINCLAIR, Syracuse; Syracuse University, 1893; Fellow American Medical Association; Academy of Medicine; Member State Society; Obstetrician Onondaga General Hospital. Died April 9, 1922.
- FORSYTH, CHARLES BURDETT, Alexandria Bay; Bellevue Medical College, 1898; Fellow American Medical Association; Member State Society. Died May 22, 1922.
- HUGHES, HERBERT G., Cambridge; Indiana University, 1918; Fellow American Medical Association; Member State Society. Died May 17, 1922.
- MAYNARD, EDWARD H., Nyack; College of Physicians and Surgeons of New York; 1873; Fellow American Medical Association; Member State Society; Visiting Physician Nyack Hospital. Died May 8, 1922.
- RANDALL, ALBERT B., Liverpool; New York University, 1879; Member State Society; Consulting Obstetrician Syracuse Memorial Hospital. Died April 18, 1922.
- REESE, FRANK DE WITT, Cortland; Long Island College Hospital, 1885; Fellow American Medical Association; Member State Society; Chief Surgical Staff Cortland County Hospital. Died May 2, 1922.
- ROUCHEL, LAURENTINE, Croghan; Buffalo Medical College, 1881; Member State Society. Died April 24, 1922.
- SHEARER, JOHN S., Ithaca; Cornell Medical College, 1893; Member State Society; Professor of Physics at Cornell University, Ithaca. Died May 16, 1922.
- SPARKS, AGNES, Brooklyn; University of California, 1879; Member State Society. Died April 16, 1922.
- TUCKER, WILLIS GAYLORD, Albany; Albany Medical College, 1870; Member State Society. Died April 22, 1922.
- WILSON, CHARLES M., Gouverneur; Bellevue Medical College, 1871; Fellow American Medical Association, Member State Society. Died April 4, 1922.
- WYETH, JOHN ALLAN, New York City; Louisville, 1869; Bellevue Medical College, 1873; Ex-President and Fellow American Medical Association; Member State Society; Academy of Medicine; President and Founder of New York Polyclinic Medical School and Hospital. Died May 28, 1922.

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The outstanding event in the story of the State Society during the past year is the awakening of interest in medico-political affairs.

For the first time, every one of our 9,500 members has been directly advised, on several occasions, of the progress of the law-makers while in session, and not, as formerly, after approval or veto by the Governor.

Every member has been advised of the action of each legislator on each of the measures affecting the medical profession and the public health.

Every member may make his own deduction, and fails in his duty to his State, and to his community if he neglects to employ his information in approval or condemnation of the position of his elected representative.

Every member, and especially the family internist, is potentially influential, possesses some quality of leadership. If he discharge his duty he will without delay affiliate with his local political organization, and join the discussion of possible candidates, so that those may be nominated who will pledge their support to salutary public effort and so that renomination may be refused to those whose record is known to be unsavory.

The JOURNAL will feature publicity affecting the welfare of the profession—invites free discussion and correspondence and desires the cooperation of every member.

N. B. V. E.

LEGISLATION.

The Council has voted the necessary funds to continue the Legislative Bureau for another year, and your Chairman of the Committee on Legislation has received permission to associate five members of the Society throughout the State as a special Advisory Committee on Legislation, in addition to the two members of the Committee on Legislation.

Bills are now in preparation for submission to the various bodies which are interested in better health for the people of this State, and shortly the County Presidents and Legislative Chairmen will receive copies and will be asked for their opinions.

(1) In the meantime County Societies must guard their elective privileges and see that no man is elected or appointed to the Chairmanship of the local Legislative Committees who is backward in work and slow in passing out information. For it is to him that each member must look for information in the critical moment.

(2) County Societies should make appropriations for the work of their County Legislative Committees. It is not fair to ask the man who

assumes this important job to pay out of his own pocket the expenses of passing the information along.

(3) County Societies should prepare the way for educating the public, through the doctor in the home community as to what constitutes good health and how to maintain it.

Each physician in the community is responsible for the standard of lay medical education in his vicinity and while plans are on foot for extending aid and ideas to the doctor in the small community, it behooves the larger County Societies to increase their efforts and enlarge their scope in this direction, that this may be accomplished as each individual Society can so do to the fullest extent.

Brooklyn had a "Cancer Week."

Other Societies have had a "Health Week."

What has your Society ever done for the people in the County?

J. V. V.

WHEN SUED OR THREATENED WITH SUIT THE MEMBER MUST ACT PROMPTLY.

1. When threatened with suit or actually served with papers, notify the Secretary, Dr. Edward Livingston Hunt, 17 West 43d Street, New York City, immediately.

2. Fill out and return the blank that he will send to you without delay.

3. If papers have been served note on the wrapper the date of service and mail them to the Counsel, George W. Whiteside, Esq., 27 William Street, New York City, immediately.

4. If protected under the group insurance plan with the Aetna Life Insurance Co., notify Mr. Whiteside of your policy number and the date of its issuance; also notify the local agent of the Aetna Life Insurance Co. If the matter is pressing telegraph Mr. Whiteside.

5. To be entitled to defense, you must be a member in good standing of your county society, your county and state dues and assessments fully paid, and you must likewise have been in good standing when the treatment occurred which is the basis of the suit.

6. If in doubt as to your right write to Counsel.

The group insurance plan of the Society furnishes you in addition to the malpractice defense of the Society, indemnity against financial loss on these claims and freedom from financial worry. If not covered consult the nearest agent of the Aetna Life Insurance Company.

G. W. W.

WORKMEN'S COMPENSATION LAW.

Attention is called to the following amendments to Article 2, Section 13, of the Workmen's Compensation Law. These become effective July 1, 1922, and are of especial interest to the practitioner of medicine in New York State.

Explanation—Matter in *italics* is new; matter in brackets [] is old law to be omitted.

Article 2, Section 13. Treatment and care of injured employees. The employer shall promptly provide for an injured employee such medical, surgical or other attendance or treatment, nurse and hospital service, medicine, crutches and apparatus *for such period as the nature of the injury or the process of recovery may require* [during sixty days after the injury; but the commission may where the nature of the injury or the process of recovery requires a longer period of treatment require the same from the employer.] If the employer fail to provide the same, after request by the injured employee such injured employee may do so at the expense of the employer. The employee shall not be entitled to recover any amount expended by him for such treatment or services unless he shall have requested the employer to furnish the same and the employer shall have refused or neglected to do so, or unless the nature of the injury required such treatment and services and the employer or his superintendent or foreman having knowledge of such injury shall have neglected to provide the same; *nor shall any claim for medical or surgical treatment be valid and enforceable, as against such employer, unless within twenty days following the first treatment, the physician giving such treatment, furnish to the employer and the industrial commissioner a report of such injury and treatment, on a form prescribed by the industrial commissioner.* All fees and other charges for such treatment and services shall be subject to regulation by the commissioner as provided in section twenty-four of this chapter, and shall be limited to such charges as prevail in the same community for similar treatment of injured persons of a like standard of living.

PROTESTATION OF THE "SOCIÉTÉ DES SCIENCES MÉDICALES DE VICHY" AGAINST A CALUMNIOUS CAMPAIGN

The *Société des Sciences Médicales de Vichy* begs to call the attention of all the physicians on a calumnious campaign against all the French watering places and Vichy especially.

Our enemies distribute in the large hotels of the Riviera and the booking offices of the foreign countries and France shameful pamphlets written in bad English, accusing Vichy of being a "superficial" spa, where the managers of the hotels overcharge their guests especially when they are foreigners.

In London and in the "Rheinland" they project on the screens of the pictures palaces and the stage curtains the pretended prices of the Vichy hotels.

Besides a so-called V. Schulmann, asserting himself as a manager of the big hotels of French watering places and of the big hotels of Vichy, where he is quite unknown, propagates calumnious libels, as well against the French managers and the physicians of the French watering places, as against the doctors of large cities, who dare direct their patients towards the French watering places and Vichy.

To protest against this hateful campaign, the managers of Vichy have had the "minimum and maximum" prices of their hotels published by the *Syndicat d'Initia-*

tive and the *Société des Sciences Médicales de Vichy* lodged a complaint against unknown, in order to find out, if possible, the individual, calling himself Schulmann.

SECTION OF PEDIATRICS OF THE ASSOCIATED OUT-PATIENT CLINICS

The Section on Pediatrics of the Associated Out-Patient Clinics, which in 1914 adopted standards for Class A, B and C clinics, was reorganized on May 10, 1922, with the following officers: Chairman, Roger H. Dennett, M.D.; Vice-Chairman, William P. St. Lawrence, M.D.; Executive Secretary, Gertrude E. Sturges, M.D.; Executive Committee, Murray Bass, M. D., Stafford McLean, M.D., Marshall C. Pease, Jr., M.D., Mark S. Reuben, M.D., Frank Howard Richardson, M.D., Louis C. Schroeder, M.D., Charles Hendee Smith, M.D., and the officers.

It was the opinion of the Section that the grading of clinics by an approved standard would serve as a strong lever in the improvement of clinic service. The Executive Committee of the Section was consequently instructed to proceed with the revision of the former standards and with the grading of the pediatric clinics represented in the Association.

The Section also discussed the desirability of a model pediatric clinic as a demonstration. Since it was thought that the operation of such a clinic would be an excellent method of stimulating the improvement of pediatric clinics, it was decided that the Section propose the plan to the Executive Committee of the Associated Out-Patient Clinics and request funds to assist in such an enterprise. It was agreed that the selection of a place for the demonstration should be on a competitive basis, that the competition should be open to all member institutions of the Associated Out-Patient Clinics, and that the principles governing the selection of a demonstration site shall be agreed upon in advance and made public.

SOUTHERN MINNESOTA MEDICAL ASSOCIATION

JUNE 19TH AND 20TH, 1922.
ROCHESTER, MINNESOTA.

Morning sessions of Monday, June 19th, and Tuesday, June 20th, will consist of Surgical and Medical Clinics, and Demonstrations in St. Mary's Hospital, Colonial Hospital, Worrell Hospital, Curie Hospital, Olmstead Hospital, Clinic Building.

The afternoon will be devoted to scientific papers. Among the speakers from outside the state will be: Drs. W. B. Cannon, Boston, Massachusetts; Judson Daland, Philadelphia, Pennsylvania; Fred H. Albee, New York City, New York; William B. Coley, New York City, New York; George E. Shambaugh, Chicago, Illinois; Willis Campbell, Memphis, Tennessee; Herman L. Kretschmer, Chicago, Illinois; Preston H. Hickey, Detroit, Michigan; Nathaniel G. Alcock, Iowa City, Iowa; George V. I. Brown, Milwaukee, Wisconsin; M. G. Seelig, St. Louis, Missouri; George W. Heuer, Cincinnati, Ohio.

A banquet will be held at the Gymnasium, High School Building, on Monday evening, June 19th, 1922, at 6 p. m.

NOTES FROM THE NEW YORK STATE DEPARTMENT OF HEALTH

The Department is continuing a thorough study of epidemic jaundice as it has appeared throughout New York State. The first recorded focus in the State was at Berkshire in Tioga County in March, 1920, and subsequent reports came from Chenango County during February, 1921. However, with these exceptions nearly all the cases have occurred during the last six months of 1921 and the first four months of 1922, more than half of them during November and December, 1921. Two recent outbreaks were reported during April, 1922, one from Chautauqua County and one from Delaware County.

In the April issue of the *NEW YORK STATE JOURNAL OF MEDICINE* there was reported a local outbreak of jaundice which occurred during the past winter in Cooperstown, N. Y. At present seven hundred cases, which were studied in twenty-five counties in the state, are being analyzed with a view to comparing the symptoms and epidemiology of this state-wide epidemic with earlier known epidemics of jaundice which have been reported in the United States and in foreign countries.

Laboratory studies of blood, urine, and fecal specimens from these human jaundice cases in New York State have so far failed to demonstrate the presence of *leptospira icterohæmorrhagiæ* or any other specific etiological agent. It is of interest to note that among the seven hundred cases studied 362 or 52 per cent were between five and fourteen years of age.

INFECTION OF LABORATORY WORKER DURING THE INVESTIGATION OF INFECTIOUS JAUNDICE

Although the laboratory investigation of cases of what appeared to be epidemic jaundice, occurring in New York State during the summer and fall of 1921, failed to establish the etiological relationship of the *leptospira icterohæmorrhagiæ* to the disease, cultures of this organism were obtained from twenty-two of the rats examined in connection with the study. Furthermore, while preparing for the inoculation of a rabbit with one of these cultures, which had been passed through two guinea pigs, a worker at the State Laboratory in Albany pricked her finger with the needle of the syringe containing the culture. Ten days later the febrile reaction started, with general malaise, nausea and vomiting. The temperature rose to 104° and continued, remitting, then fell gradually and reached normal on the tenth day. There was great prostration, but no disturbance of the pulse rate-temperature ratio, no jaundice and no other symptoms. No organisms could be identified definitely as *leptospira icterohæmorrhagiæ* in the first blood specimens taken after forty-eight hours. A guinea pig inoculated with the specimen, however, developed jaundice in twelve days, but examination of its blood failed to reveal the spirochaete. A second guinea pig, inoculated with a blood specimen taken at the end of seventy-two hours, also developed jaundice and the organisms were found in the blood at autopsy. Cultures were obtained from both animals. This case is the only human one studied, so far, during the investigation, in which *leptospira icterohæmorrhagiæ* has been isolated from the patient's blood, and presents, the investigators believe, the first instance of human infection developing from cultures isolated from rats in this country.

IMPORTANCE OF CLEANING THE BABY'S EYES

A case of ophthalmia neonatorum, gonorrhoeal in origin, was reported recently by a physician with the statement that he had treated the father of the child for gonorrhoea and therefore was awake to the necessity of guarding against ophthalmia in the child. He stated that he had instilled two drops of 2 per cent solution of silver nitrate into each eye at the time of birth. In spite of this, within fifty-six hours an inflammation appeared which proved to be specific. The question the physician raises is: "Why did this infection appear in spite of this precaution?" There is no doubt that contact with silver nitrate in that strength will kill the gonococcus immediately and the explanation offered is that perhaps the child's eyes were not thoroughly cleansed before the nitrate was instilled. This we know to be a very important procedure.

Regulation 17, Chapter IV, of the New York State Sanitary Code requires of the midwife that "As soon as the child is born, and if possible before the expulsion of the after-birth, the eyes should be washed with boric acid solution. The eyelids must then be separated and two drops of a one per cent (1%) solution of silver nitrate dropped into each eye and the lids brought together."

The Department suggests that physicians arriving some hours after the birth of a child would do well to use the boric solution prior to the application of the prophylactic measure.

LABORATORY DIAGNOSTIC SERVICE

The Division of Laboratories and Research is sending out from the State Laboratory at Albany boxes of diagnostic outfits "for the physician's handbag." These have now been sent to all physicians in the State except those in New York City, Rochester and Buffalo. As rapidly as possible corked culture tubes which will keep at ordinary temperatures are being substituted for common culture tubes.

The State Laboratory is now in a position to supply a limited number of Keidel tubes for blood cultures on requests from physicians. It is hoped that it will soon be possible to place these tubes in all laboratory substations throughout the state.

Type 1 antipneumococcus serum is distributed for administration (in type 1 cases) by physicians who have been designated by local health officers. There are comparatively few names of physicians on this list and the laboratory will be glad to make additions at any time.

NEW STATISTICAL TABLES

The Division of Vital Statistics is completing the preparation of new tables of descriptive statistics of births, marriages, infant mortality and epidemic influenza-pneumonia. For the first time in the history of the State's vital statistics these tables will be available in printed form during the present year. Many of the tables will be continued as standard forms on an annual basis. The marriage statistics for 1916, 1917 and 1918 are now being printed as a special report while those for 1919, 1920 and 1921 will be included in the annual report. The influenza-pneumonia statistics are also being printed as a special pamphlet. Special tables of infant births and infant mortality statistics will appear in the annual report. The completion of these tables will mark another definite achievement in advancing the vital statistics of New York State to a much higher level, placing the general scope of the report on a basis more comparable with those issued by the United States Bureau of Census and the more important foreign statistical offices.

PRUNES

The Pursuit of Anatomy

Legs! Legs! Legs!
Here, There and Yonder,
Everywhere I Gance,
Everywhere I Wander,
Twenty Thousand Miles
Of Fibulary Styles,
Dance,
Dance,
Dance,
Here, Boys, Here!
There, Boys, There,
Aunt Fanny's Fibula
Is Out for the Air!
Run, Boys, Run!
Aunt Tabby's Tibia
Is Shaking in the Sun!
Legs! Legs! Legs!
Some Are Much Too Round,
And Some Are Quite All Right,
But None of Them is Found
Keeping Out of Sight!
Legs! Legs! Legs!
Filling Up the Street,
And Yet I Ain't So Old
That They Ain't No Treat
Some of Them Have Crooks,
Some of Them Are Straight,
But They All, by Their Looks,
Have a Heart for Any Fate!
—DON MARQUIS in the Sun.

Adventures in Physiology

By F. F. V. in the *Tribune*.

We have taken a new lease on life. We have forsworn tobacco. It was gradually killing us. We know it was, because we read about it in a pamphlet. The things it was doing to our eyes and ears, our heart and lungs, our liver and kidneys, our blood and lymph, our spleen and ductless glands were disconcerting and depressing. After reading of its ravages we marveled at the native resistance that enabled us to remain conscious for a part of each day.

We debated the renunciatory step thoroughly. We even considered talking it over with our wife. Then we remembered that her judgment might be biased by painful memories of our last attempt to free ourself from the clutches of the noxious weed, and didn't.

After due consideration we decided that life would be too short anyway to do all the things we've always wanted to and, to date, have never dared to. So we dumped the tobacco tin into the garbage pail. We gave our last half-dozen cigarettes to the elevator boy. We entered the battle on the side of Right and Purity.

We were filled with the warmth of Virtue. We fancied we could hear our grateful liver murmur its relief and the emancipated blood corpuscles sing as they voyaged through arteries no longer doomed to premature hardening. Our lungs shouted for joy. Our spleen spoke kindly to us. The editorial and collective. We were in tune with the Infinite at last.

Today we present to the customers a denarcotized column, fashioned by one whose intellect has been redeemed from premature decay—we think that's what the pamphlet says—and whose heretofore abused body is rapidly freeing itself from insidious poison.

We have taken, we repeat, a new lease on life.

"Hey, Bill!"

"What is it?"

"Your doctor's out here with a flat tire."

"Diagnose the case as flatulency of the perimeter, and charge him accordingly," ordered the garage man. "That's the way he does biz."

MEETING OF THE COUNCIL.

A meeting of the Council of the Medical Society of the State of New York was held in Albany on Thursday, April 20, 1922; Dr. Arthur W. Booth, President, Dr. Edward Livingston Hunt, Secretary.

The meeting was called to order at 12:15 P. M. and on roll call the following answered to their names: Drs. Arthur W. Booth, James F. Rooney, E. Eliot Harris, George M. Fisher, Nathan B. Van Etten, E. Livingston Hunt, Arthur D. Jaques, Arthur J. Bedell, E. MacD. Stanton, Ethan A. Nevin, Harry R. Trick, and James N. Vander Veer.

A quorum being present, Dr. Booth announced the meeting open for business.

In accordance with the By-Laws, that the Council shall elect an Executive Committee consisting of the President and Secretary and five members to be nominated by the President, the President nominated the following: Drs. E. Eliot Harris, Seth M. Milliken, Harry R. Trick, Henry Lyle Winter, and Joshua M. Van Cott.

Moved and seconded that they be elected. Carried.

The President presented the following as members of the Committee on Publication: Drs. Nathan B. Van Etten, Chairman; Edward Livingston Hunt, James N. Vander Veer, Parker Syms, and E. Eliot Harris.

Moved and seconded that they be appointed. Carried.

Dr. Harris read the following letter:

"MY DEAR DR. HARRIS:

I understand a resolution was passed by the House of Delegates relating to X-ray technicians, and as an important conference is to take place on Friday, April 28th, at 4 P. M., your attention is called to the same.

The object of the conference is in reference to the interpretation and administration of the sanitary code relating to the regulations governing the conduct and maintenance of X-ray laboratories in the City of New York. This conference will open the whole subject for discussion. It would be well for the Council to be represented at the conference as the Commissioner of Health has asked the Counsel of the Society, Mr. George W. Whiteside, to aid in the application of the Medical Practice Act to the lay X-ray technician.

Very sincerely yours,

LEON T. LEWALD.

Moved that a committee be appointed to attend the conference on the interpretation of the sanitary code regulating the conduct and maintenance of X-ray laboratories. Seconded.

Motion amended, that this Committee be authorized to confer with the Health authorities in regard to the matter, but that it be not given any power to act for the State Society. Seconded and carried.

The President appointed as this Committee Drs. E. Eliot Harris and Dr. Edward Livingston Hunt, assisted by Mr. Whiteside, Counsel of the Society.

Dr. Vander Veer, Chairman of the Committee on Legislation, presented a verbal report of his committee. Dr. Vander Veer asked for an appropriation for the coming year and stated that there was still \$600 unexpended of the appropriation granted the Committee for last year.

Moved that the unexpended balance of \$600 be appropriated for the Committee on Legislation until the next meeting of the Council. Seconded and carried.

Moved that the JOURNAL be not used to in any way suppress any expression of opinion; and that its cor-

respondence columns be open for all proper communications; and that "proper" communications will be deemed those which are not slanderous or libelous in their nature. Seconded and carried.

Moved that Dr. Frederic E. Sondern be continued as Editor until the next meeting of the Council. Seconded and carried.

Moved that the Committee on Publication be requested to report on the appointment of an Editor at the next meeting of the Council. Seconded and carried.

Moved that a committee of three be appointed to send in a report considering suggested amendment to the Constitution and By-Laws on the increase of dues and give reasons therefor. Seconded and carried.

The President appointed Drs. James F. Rooney, Arthur D. Jaques and Harry R. Trick.

Moved that the place of the next Annual Meeting be left to the President to report at the next meeting of the Council. Seconded and carried.

Moved that the next meeting of the Council be held on Saturday, May 13th, at 2:30 P. M. in New York City. Seconded and carried.

Moved that the next meeting of the Executive Committee be held on Saturday, May 13th, at 1:30 P. M. in New York City. Seconded and carried.

Moved that the President be authorized to extend a vote of thanks to the Committee on Arrangements and to all who participated in making the Annual Meeting in Albany a success.

There being no further business the meeting adjourned at 1:20 P. M.

EDWARD LIVINGSTON HUNT,
Secretary.

County Societies

MEDICAL SOCIETY OF THE COUNTY OF SENECA,

REGULAR MEETING, SENECA FALLS, N. Y.,
THURSDAY, MAY 11, 1922.

The meeting was called to order at the Citizens Club by the President, Dr. Currie. The minutes of the last meeting were read and approved.

The following candidates were nominated for election at the Annual Meeting in October: For President, John F. Crosby, Seneca Falls; Vice-President, C. S. Barnes, Waterloo; Secretary and Treasurer, W. M. Follette, Seneca Falls; Delegate to the State Society, R. M. Elliott, Willard; Alternate, R. S. Pettibone, Willard; Censors, Drs. F. W. Lester, C. B. Bacon, and W. H. Montgomery.

Dr. F. W. Lester, Chairman of the Legislative Committee, gave a resume of medical affairs pending at Albany and stated that the County was represented at the hearing before Gov. Miller on the Chiropractic Bill by Drs. Lester and Follette.

On motion duly seconded and carried the present Legislative Committee was continued in office.

Dr. Robert Knight, Chairman of the Anti-Cancer Campaign Committee, made a report of his activities the past six months.

On motion duly seconded and carried the present Committee was continued in office.

On motion of Dr. Cole, duly seconded and carried, the place for the next annual meeting was left to the President of the Society.

On motion duly seconded and carried the Secretary was instructed to write the Legislative Committee of the State Society that the local county society was represented at the hearing before Gov. Miller on the Chiropractic Bill.

SCIENTIFIC PROGRAM

"Chronic non-suppurative Osteo-periostitis," Clarence F. Coon, M.D., Syracuse.

Discussion by Drs. Lester, Brandt and Menzies.

"The Significance of the Various Tests in the Diagnosis of Kidney Diseases," John R. Williams, M.D., Rochester.

Discussion by Drs. Letellier, Brandt, Coon, Lester and Knight.

On motion duly seconded and carried a vote of thanks was extended to Drs. Coon and Williams for their interesting and instructive papers.

The Secretary was also requested to write the Citizens Club and express the appreciation of the Society for the use of their rooms.

MEDICAL SOCIETY OF THE COUNTY OF WASHINGTON,

SEMI-ANNUAL MEETING, CAMBRIDGE, N. Y.,
TUESDAY, MAY 9, 1922.

The meeting was called to order at the Mary McClellan Hospital at 11 a. m.

Members present: Drs. Paris, Pashley, Park, Prescott, Banker, Lee, Stillman, Cuthbert, Blackfan, Fortuine, Casey, Hutchens, Heath, Davies, Leonard, Tenney, Oatman, Orton, Madison, Rogers, Ketchum, McKenzie, Sumner, Byrnes.

Visitors: Drs. Charles Duryee, Otto Lehman and John J. Raney. The minutes were read and approved.

The President read some communications from the State Legislative Committee and told of the work of the Comitia Minora and members of the Society in legislative matters.

The Treasurer reported 28 members paid and \$102 in bank.

Dr. Leonard as delegate to the State Society gave a very interesting report. Dr. Leonard was tendered a vote of thanks.

Dr. Davies as chairman of the committee reported favorably on Dr. Wadsworth's laboratory recommendations, the committee was continued and asked to present the matter to the Board of Supervisors. Dr. Hutchens gave a scientific and interesting paper on the clinical importance of estimating Blood Sugar.

The Vice-President, Dr. Blackfan, gave an interesting address on Medicine of the Past and Present in Rural Communities.

The meeting then adjourned for a luncheon which was furnished by the Mary McClellan Hospital. The Hospital was tendered a vote of thanks for their entertainment.

AFTERNOON SESSION

Dr. Duryee, "Post Graduate Work in General," spoke of the value to the general practitioner of the courses given by the State Department of Health and urged the members to take advantage of this opportunity.

Dr. Raney, "A Practical Consideration of the Maxillary Sinus," illustrated by two patients, one of which was a cured case, the other still under treatment.

Dr. Fortuine, "Three Cases of Gas Gangrene." All of these cases were injured where the infection by animal manure was possible. The foetid odor and presence of bubbles of gas were diagnostic symptoms. The pulse rate exceeded the temperature. Treatment by amputation of dead parts, free incisions and Dakin Solution.

Dr. Prescott, "A New Aid in Obstetrics." This aid consists of a chair that is given gentle vibrations by an electric motor, and used in the first and second stages of labor.

On motion duly seconded and carried the speakers were given a vote of thanks.

MEDICAL SOCIETY OF THE COUNTY OF FRANKLIN,

SEMI-ANNUAL MEETING, SARANAC LAKE, N. Y.,
TUESDAY, MAY 9, 1922.

After a dinner served at the Berkley Hotel, the business session was called to order in the Free Library Building at 2 o'clock.

The following members were present: Drs. Packard, Abbott, Harrigan, A. L. Rust, Cone, Farrell, Kissane, Kinghorn, Stoughton, Dalphin, White, Soper and Finney.

The minutes of the last meeting and the report of the Comitia Minora were read and approved as read.

The following candidates were nominated for election at the next annual meeting: For President, J. D. Harrigan, Malone; Vice-President: F. B. Trudeau, Saranac Lake; Secretary and Treasurer, Dr. G. M. Abbott, Saranac Lake; Censor for three years, E. N. Packard, Saranac Lake; Delegate to State Medical Society, A. L. Rust, Malone; Alternate, C. C. Trembley, Saranac Lake.

Drs. Cameron S. Coulter, John N. Hayes and Edward S. Welles were elected to membership.

Dr. John E. White, Chairman of the Legislative Committee, made a lengthy report and closed his remarks by stating that the Committee had conferred with the Senator and Member of Assembly from this District, and that they had been assured by these Legislators that the wishes of the medical profession in Franklin County in relation to any medical legislation would be strictly carried out.

The President appointed a Committee consisting of Drs. W. B. Soper and F. F. Finney to draft suitable resolutions upon the death of Dr. Robert C. Paterson.

The business being completed, the President declared a recess of fifteen minutes, after which the following papers were read and discussed:

"Extra-pleural Thorocoplasty, Report of Cases," Edward S. Welles, M.D., Saranac Lake.

"Bronchiectatic Lung Abscess, Operation, Recovery," Hugh M. Kingborn, M.D., Saranac Lake.

"Chemical Findings in the Blood and Their Interpretations," M. Dworski, Saranac Lake.

"Localized Pleural Effusions," John W. Weber, M.D., Ray Brook.

MEDICAL SOCIETY OF THE COUNTY OF SUFFOLK,

SEMI-ANNUAL MEETING, KINGS PARK, N. Y.,
THURSDAY, MAY 11, 1922.

The meeting was called to order in the Kings Park State Hospital. Thirty-seven members were present. Dr. W. H. Ross reported that the Legislative Committee had been very active during the winter. One hundred dollars was appropriated for the use of the Committee during the coming year.

The Society voted to request the Board of Supervisors of Suffolk County to establish a general hospital in the buildings at Yaphank, formerly used as a Children's Home.

Five new members elected.

Dr. Philip Lehrman of New York City gave a paper on "The Early Symptoms of Insanity as Seen in a Metropolitan Clinic."

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

OBSTETRICAL NURSING, A TEXT-BOOK ON THE NURSING CARE OF THE EXPECTANT MOTHER, THE WOMAN IN LABOR, THE YOUNG MOTHER AND HER BABY. By CAROLYN CONANT VAN BLARCOM, R.N., formerly Assistant Superintendent and Instructor in Obstetrical Nursing, Johns Hopkins Hospital Training School for Nurses. 200 illustrations, 8 charts. The Macmillan Company, New York, 1922.

THE MEDICAL CLINICS OF NORTH AMERICA. (Issued Serially, one every other month.) Volume V, Number V, March, 1922. By Boston Internists. Octavo, 335 pages, 62 illustrations. Per clinic year (July, 1921, to May, 1922) Phila. and London: W. B. Saunders. Paper, \$12.00 net; cloth, \$16.00 net.

THE NEWER KNOWLEDGE OF NUTRITION; THE USE OF FOOD FOR THE PRESERVATION OF VITALITY AND HEALTH. By E. V. McCOLLUM, Ph.D., Sc.D., Professor Chemical Hygiene, School of Hygiene and Public Health, Johns Hopkins University. Illustrated. Second Edition. Entirely rewritten. The Macmillan Company, New York. 1922.

MEDICAL OPHTHALMOLOGY. By B. FOSTER MOORE, O.B.E., M.A., B.Ch. (Cantab.), F.R.C.S., Assitant Ophthalmic Surgeon, St. Bartholomew's Hospital, Surgeon, Moorfields Eye Hospital. With 80 illustrations. P. Blakiston's Son & Co., Phila., Pa. 1922.

THE HEALTH-CARE OF THE BABY, A HANDBOOK FOR MOTHER AND NURSES. By LOUIS FISCHER, M.D., Attending Physician Willard Parker, Riverside Hospitals; Chief Attending Pediatricist to the Zion Hospital of Brooklyn. Thirteenth Edition. Completely revised. Funk & Wagnalls Co., New York and London, 1922. Price \$1.00 net.

THE EIGHTEENTH AMENDMENT AND THE PART PLAYED BY ORGANIZED MEDICINE. By CHARLES TABER STOUT. Mitchell Kennerley, New York, 1921. Price \$1.50 per copy.

1921 COLLECTED PAPERS OF THE MAYO CLINIC. Rochester, Minn. Octavo of 1318 pages, 392 illustrations. Phila. and London: W. B. Saunders Co., 1922. Cloth, \$12.00 net.

Book Reviews

STUDIES IN DEFICIENCY DISEASE. By ROBERT McCARRISON, M.D., D.Sc., Hon. LL.D. (Belf.), Fellow of the Royal College of Physicians, London; Lieutenant-Colonel, Indian Medical Service. Henry Frowde, Hodder & Stoughton, England. 1921. \$10.00.

This book on a very timely subject is based upon the investigations of the author in addition to the correlation of already existing facts. The objects of the study were "To find out how the body goes sick in consequence of deficient and ill balanced food" and to deduce therefrom what forms of sickness in the human subject may reasonably be attributed to, or connected in their origin with, such foods.

McCarrison feels that the health of the gastro-intestinal tract is dependent on the adequate provision of accessory food factors. A state of ill health of this tract may be a prescrobic manifestation of disease due to insufficient vitamin intake, especially when excess of fat or starch or both in the food. He thinks that vitamins in their action resemble that of hormones whose function is to stimulate metabolism. Disturbances of metabolism are bound up with and are in considerable measure dependent on the disturbance of endocrine function which results from the same cause. It seems that both the functional perfection and correlation of the endocrine organs are dependent upon a

properly balanced and vitamin containing food supply; dietitic deficiency means endocrine insufficiency.

Effect of food deficiency on the organs of internal secretion is shown by atrophy of the thymus, spleen, testicles, ovary, thyroid and parathyroid, and by hypertrophy, perhaps compensatory of the adrenals and pituitary. He also feels that an adequate supply of vitamins is essential to perfect nutrition of the heart and kidneys.

McCarrison classifies as deficiency diseases dysentery, jail dysentery, chronic gastro intestinal dyspepsia, colitis, coeliac disease, chronic intestinal stasis, gastric and duodenal ulcer, intussusception, pellagra and beri-beri.

McCarrison warns against viewing the problems of nutrition from a too vitamin outlook. Vitamins have their place in nutrition: "It is that of one link in a chain of essential substances requisite for harmonious regulation of the chemical processes of healthy cellular tissue."

The book is a valuable addition to the literature on the vitamins and deficiency diseases and should be read by all interested in these diseases.

MURRAY B. GORDON.

HYGIENE OF WOMEN AND CHILDREN. By JANET E. LANE-CLAYPON, M.D., D.Sc. (Lond.), Dean and Lecturer on Hygiene, Household and Social Science Department, Kings College for Women. London: Henry Frowde and Hodder and Stoughton. 1921. Price, \$5.00.

This charmingly written and arranged little book of Dr. Claypon's while written primarily on hygiene of women and children contains much that is applicable to the male of the species as well. In an easy style of text, well illustrated, and attractively set up, the writer takes up every phase of hygiene including fresh air, clothing and shoes, exercise and sleep, food for the child and adult.

Infant feeding is briefly but sensibly considered, with due regard for the recent knowledge of nutrition, including the vitamins or essential food substances.

Milk is rightly given an important place in the feeding of the infant and child, and four full chapters are devoted to its composition, its production and supply, its bacterial content and standards of purity, and its care in the home. There is a chapter on rickets and scurvy, and finally one on growth and growth factors in infancy and childhood.

One notes with interest the credit given to the United States for the production of a safe raw milk for infants and children and draws the inference that such milk is not available in Great Britain.

The fact that the writer is an English woman physician and that her recommendations are essentially intended for conditions in England, makes the reading of the book additionally interesting, as it throws a valuable light on living conditions in that country, and gives an opportunity to compare them with those existing on this side of the Atlantic.

W. H. DONNELLY.

ESSENTIALS OF LABORATORY DIAGNOSIS, by FRANCIS ASHLEY FAUGHT, M.D. Seventh Revised and Enlarged Edition. Octavo, 523 pages, 78 illustrations, 11 plates. Phila.: F. A. Davis Company, 1921. Cloth, \$4.50.

The present edition of this work has been extensively revised. It contains chapters on subjects not usually found in works of this character, for example, spectroscopic examinations and sphygmomanometry. In general, the author adheres to his policy of presenting a simplified technic in the endeavor to make his book an aid to the busy physician. The desire is laudable but we do not think that either physician or patient will benefit by dabbling in blood chemistry or serology. There are the usual chapters on sputum, blood, urine, gastric contents and bacteriology.

E. B. SMITH.

THE MEDICAL CLINICS OF NORTH AMERICA. Volume V, Number III (The Philadelphia Number), November, 1921. Octavo, 362 pages, 44 illustrations. Philadelphia and London: W. B. Saunders Co., 1921. Published bi-monthly. Price per clinic year: Paper, \$12.00. Cloth, \$16.00.

Naturally we expect the Philadelphia number of the Medical Clinic to be a good one and are not disappointed. The articles are useful and practical and it is most difficult for the reviewer to choose as of especial value any one subject. The too brief article by Anders, on functional cardiac disturbances, is instructive, as well as the two following papers by Riesman and Sailer, who treat of abdominal conditions, which are frequently confusing and to which, possibly, we pay too little attention in routine examinations. Piersol gives an instructive article on the factors of prognostic significance in persistent high blood pressure. The action of Quinidin in Heart Conditions is carefully presented by Wolferth. There are also in this issue articles on gastric and duodenal ulcers with treatment, tuberculosis and some of the ductless gland conditions. This number has papers of interest to every physician.

H. M. M.

THE VITAMINES, by H. C. SHERMAN, Professor Food Chemistry, Columbia University, and S. L. SMITH, Specialist in Biological and Food Chemistry, U. S. Department Agriculture. The Chemical Catalogue Company, Inc., Book Department New York City, 1922. \$4.00 net.

This is one of a series of monographs to be published under auspices of the American Chemical Society. The authors are extremely well known in the realm of food chemistry and this volume is not only founded upon an exhaustive review of the literature but on very comprehensive animal feeding experiments. The value of the work is greatly enhanced by a very complete bibliography, and author index and a subject index, thus remedying the lack of reference facilities which is so common in medical and scientific publications. Sherman and Smith would seem to have covered the ground of their chosen subject very thoroughly and to have produced a book which is a distinct acquisition to the literature of a comparatively recent, but very important as well as fascinating field of scientific study.

W. H. DONNELLY.

BOOK ON THE PHYSICIAN HIMSELF FROM GRADUATION TO OLD AGE, by D. W. CATHELL, M.D. This is the vastly improved Crowning Edition. Published by the Author, Emerson Hotel, Baltimore, Md. 1922.

There seems to be no professional exigency overlooked by this book. All the possible pitfalls of practice are taken into account and the young or weak practitioner receives much advice from the experienced author.

This work has gone through several editions and has enjoyed much prestige. It has been extolled by men like Welch, Osler, Brinton, Murphy, Jacobi, Senn, Cullen, Park, Cordell and Kelly, while thousands of the rank and file are said to have expressed their gratitude to the author. This record demonstrates that there has been a real need for such a book.

While it could be argued that where such a need is so great there must be serious and widespread shortcomings with respect to breeding, character, education, etc., it is perhaps best not to dwell on this phase of the subject but to regard the book as an earnest of the profession's self-redemptory powers.

Unfortunately, the book betrays considerable carelessness in preparation, printing and proof-reading.

A. C. JACOBSON.

1920 COLLECTED PAPERS OF THE MAYO CLINIC, Rochester, Minn. Octavo of 1392 pages, 446 illustrations. Phila. and London. W. B. Saunders Co. 1921. Cloth, \$12.00 net.

The Mayo Volume for 1920 maintains the usual high standard of this publication. There is an almost standardized method in the preparation of the papers of the many contributors, so that by comparison with the vast array of articles in Medical literature, one can not but be pleased with the clarity of expression, terseness and scientific value of the various contributions.

To mention and comment on the individual papers would make this review too tedious. In the writer's mind, the plea of Stokes in his paper, "The Clinical Approach to Syphilis," for a return to the systematic and collaborative study of the case clinically, voices a great need in these days of almost total reliance on laboratory findings. The paper can be read with much profit.

To the busy practitioner who has little leisure for study yet wishes to keep abreast of the times, as well as the specialist who is looking for critical studies in his own work, we commend the yearly edition of the Mayo Volume.

S. L. F.

EPIDEMIOLOGY AND PUBLIC HEALTH, A TEXT AND REFERENCE BOOK FOR PHYSICIANS, MEDICAL STUDENTS AND HEALTH WORKERS, IN THREE VOLUMES. By C. VAUGHAN, M.D., LL.D., Chairman of the Division Medical Science, National Research Council; by Henry F. Vaughan, M.S., Dr.P.H., Commissioner of Health, City of Detroit, and George T. Palmer, M.S., Dr.P.H., Epidemiologist Department of Health City of Detroit. Vol. I, Respiratory Infections. C. V. Mosby Co., St. Louis, 1922. \$9.00.

This is the first of three volumes bearing the above title and gives evidence of the "pen of a ready writer" and the accumulated knowledge of over forty years of a life full of useful activity. It is a book of nearly seven hundred pages, containing twenty chapters and eighty-three charts and other illustrations. As the author states, he has, in so far as possible, avoided technical language and endeavored to treat complicated problems in a clear and simple manner. With this in view, he has given us a mass of scientific matter in a style which makes it interesting and brings it within the reach of minds not accustomed to the intricacies of laboratory practice. The brief historical reviews and the stressing of the importance to the epidemiologist of a real working knowledge of semiology and pathology have added a charm and value to the book, which make it a lasting contribution from the cultural, literary and scientific viewpoint. The chapter on "Albuminal Diseases" is a particularly clear and simple review of a difficult subject, while the fifteen chapters on the infectious diseases leave nothing to be desired, within the stated scope of the work. The illustrations, consisting of abundant tables and charts of modern construction, show much thought and care in their production and are a great help in visualizing the subject-matter.

This is a book which should appeal to us all, but particularly to the every-day practitioner and such of the laity as are interested in the great and far-reaching problems involving prophylactic medicine and the ultimate happiness of the human race, who are lacking in the time and special opportunity for research along these lines. For medical students and "health workers" it is invaluable. The publishers are to be complimented upon the excellence of their work.

J. M. VAN COTT.

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RADIUM TREATMENT OF PAROTID TUMORS*

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and
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NEW YORK CITY.

TUMORS of the parotid gland have been of fruitful interest both for the oncologist and for the surgeon. The mode of origin of many has been debated by pathologists. The difficulty of permanently eradicating a disease which in many of its phases suggests a relatively benign process, has been a great puzzle for the surgeon.

It has long been recognized that tumors of the parotid gland constitute an exceptional class. The inclusion of mesoblastic elements, in the form of cartilage, mucous tissue, and cellular connective tissue, has rendered the interpretation of such tumors arising in an epithelial organ, a matter of difficulty.

In a recent study of parotid tumors, Ewing¹ describes three groups:

1. Benign adenomas.
2. Malignant adeno-carcinomas or carcinomas.
3. Mixed tumors.

1. *Benign Adenomas.*—These tumors are rare and in the Memorial Hospital series no such growth was recognized, clinically or microscopically. Wood² (case 39), Ribbert, Nasse and Lecene³ have reported cases. The tumors grow slowly and are encapsulated in the gland or attached to it. They are solid or cystic and may reproduce the alveolar structure of the gland. No cartilage or myxomatous tissue is present. Lecene states that with the unaided eye it is practically impossible to distinguish a mixed tumor from an adenoma. They originate from the glandular acini or from the lining epithelium of the ducts. From the clinical point of view the behavior of an adenoma is in all respects the same as that of a mixed tumor. The slow development and the absence of invasion would seem to indicate a benign course. But reports are at hand, however,

which prove that transitions to a malignant lesion are occasionally observed.

2. *Adeno-Carcinomas or Carcinomas.*—These have frequently been reported in the literature and are by no means rare. Wood² reports 3 cases and Nasse and Volkman each describe 2. Our records contain notes of 12 such tumors. As a rule they develop rapidly and within a few months invade the whole gland, its capsule, and extend to the regional lymph nodes. In not a few instances, distant metastases to lungs and bones are finally present. In 3 of our patients the growth was present 5, 6 and 15 years before active enlargement commenced, indicating a change from a benign to a malignant structure. The adeno-carcinomas may be described as alveolar or papillary. The point of origin of the former is from the acini and the latter arise from the ducts. The carcinomas present anaplastic cells growing in broad masses and if they are highly atypical, are often referred to as round-celled sarcomas. Squamous metaplasia may appear and has been attributed to an origin from ducts where inflammatory changes are present. This occurred in 3 of our cases. Carcinomas may contain cysts, but if very malignant they are solid and in some instances lobulated. These tumors are, therefore, typically very malignant. Statistical literature of surgical results is scanty and does not include prolonged post-operative observations. Heincke⁴ states that the prognosis is absolutely unfavorable. The cases as a rule do not come to operation until a stage when permanent cure is not to be accomplished, even through the radical removal of the entire gland. He looked in vain for surgical results in carcinoma of the parotid. Ewing quotes Chevassu as saying that prompt recurrence is usually observed.

3. *Mixed Tumors.*—In this group discussion was originally commenced by Wartman, and Volkman and centered around their assertion that such growths were endothelial in nature, and were derived from lymph channels. However, in France this theory never was accepted, and it was violently attacked by Hinsberg and Ribbert and the epithelial origin maintained.

Our present understanding of mixed tumors of the parotid is thus summarized by Ewing.

* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 19, 1922.

1. The endothelial origin has been disproven.

2. No single source of the mixed tumors meets all the requirements. Some are distinctly adenomatous, and probably arise from the acini and ducts of the gland in which they are well incorporated. Others are encapsulated or extra glandular, and take the form of basal cell or adenoid cystic epithelioma. These probably arise from misplaced and occasionally embryonal portions of gland tissue. Branchial remnants may possibly be connected with this group.

3. The derivation of mucous tissue and cartilage from gland epithelium has been satisfactorily proven, and there is no necessity of including in the originating tissue any cartilaginous structures.

Mixed tumors are the most common neoplasms of the parotid and are frequently described. The clinical course is characteristic. A quiescent nodule is usually present for years before active growth occurs. In one of our cases a tumor was present for years. If the capsule is intact, growth is restrained. This probably accounts for recurrences of increasing malignancy which so often follow excision. Some, however, are not encapsulated and fuse with the gland substance. Many have a characteristic lobulated structure. Some are not in definite relationship to the gland. These arise from misplaced tissue. If much mucous material is present they are soft and elastic. More often they are firm and contain fibrous tissue or cartilage. The epithelium is glandular or resembles basal cells.

The problem of successfully combating parotid tumors has always been to the surgeon, a difficult task. Characterized in the majority of cases by a relatively benign course and little disposition to metastasize, they have never formed a field where surgical results went hand in hand with surgical opportunity. The same factors which render their treatment favorable by radium should likewise facilitate surgery. But the limiting capsule of many parotid tumors is a snare, and if grossly injured, as it easily is, malignant cells which are restrained by nature's barrier are sown in the tissue, take root and grow.

Statistics are difficult to obtain. The French and German literature abounds with individual case records, but with no indication of end results. American articles are somewhat more complete. Wood's² excellent contribution, in 1904, is devoted mainly to a pathological survey of the disease. In it are reported 37 cases surgically treated, and later investigation revealed that 17 recurrences resulted.

Cevario³ stated that mixed tumors, after operative traumatism, assume increased malignant properties, without entirely losing their original benign characteristics, and cites an illustrative case.

The most comprehensive surgical contribution is by Sistrunk⁶ of the Mayo clinic, in which he reports 103 cases operated upon with 28 recurrences. He emphasizes the importance of early treatment, and states that in practically every case of the series the operation was an excision of an encapsulated tumor. We are thus forced to conclude that his cases were all distinctly favorable and early, and therefore did not include that large group in which the extent of disease would demand the total removal of the gland. He concludes that surgery is the only form of treatment, radium having little effect.

Although he stated no details regarding types of cases treated with radium, the technique used and dosage given, we are forced to believe that no very aggressive attempt was made to prove the conclusion. On the same type of tumor radium always performs its task in the same way. If efficiently used its value is not disputed in skin lesions, in cancers of the mucous membranes of the mouth and in uterine growths. There are no anatomical or biochemical reasons for believing that parotid tumors behave differently than all others. In fact they have generally been found highly susceptible to radium. Therefore, in view of the rapidly accumulating evidence which is arriving from every important center in America and Europe, we consider that the above observation does not reflect the real situation re-



FIGS. 1 AND 2.—Photographs of a patient 23 years of age, who was treated three years ago for an ulcerating recurrent mixed tumor of the left parotid gland. Unfiltered emanation tubes were buried in the growth on three occasions.

All that remains of the original growth is a small fibrotic nodule which has not changed in character during the last one and one-half years (Fig. 2).



FIGS. 3 AND 4.—This patient, a girl 12 years of age, had noticed a tumor one year before applying for treatment. It involved a large portion of the parotid gland, was firm in consistence and recently had commenced to grow rapidly.

Emanation tubes were buried in the mass, and at the end of four months (Fig. 4) a marked decrease in the size of the growth was noted.

garding the treatment of parotid tumors by radium.

One of the first parotid tumors treated in America by radium was in 1906 and was reported by Abbe⁷ after the patient had been clinically free of disease for 5 years.

Meret⁸ and Kirmisson⁹ also have successfully treated mixed tumors. The latter's case presented no recurrence after 10 years.

Kuttner,¹⁰ in 1915, recommended that after total extirpation of the parotid for malignant disease, radiotherapy should be instituted, because in spite of the careful removal of all diseased tissue, recurrences are the general rule.

Bérard,¹¹ in 1914, and Weil,¹² in 1915, reported additional cases where radium proved of great value in influencing these tumors. In the latter's case, no recurrence was noted, after an observation of 2 years.

At the Memorial Hospital during the years 1918, 1919, 1920 and 1921, 59 cases of parotid gland tumors were treated. 5 of these were lost for statistical purposes and are therefore excluded, leaving 54 cases as the basis of this study. 29 tumors occurred in females (53.7%) and 25 in males (46.3%). The records show that 11 cases (20.3%) were considered operable and 43 cases (79.7%) inoperable. The factors of operability must vary of course in different clinics and with different observers. No growth showing deep fixation, skin involvement, or metastatic nodal involvement, has been considered anything but inoperable.

Our series confirms the usual observation that the tumors occur at all ages but are essentially manifestations of middle life. 37 cases

(68.5%) developed in the 4th, 5th, 6th and 7th decades. The youngest was in a male child 4 years of age, and the clinical course as might be expected was very rapid. The oldest commenced in a patient of 82 years.

26 patients (48.1%) had been operated upon elsewhere, with recurrences which appeared from 6 weeks to 6 years after operation. The largest number of operations for recurrences in one case was 11. Primary cases coming for treatment numbered 28 (51.9%).

In 22 cases (40.7%) pathological reports were made, either from tissue removed elsewhere in recurrent cases, or from biopsies in primary cases at the time of treatment. We do not consider that a carefully performed biopsy in a primary case, after external radiation, will favor metastases. Such seems to occur only after several attempts at complete removal of local recurrences.

It is of interest to note that in 11 cases, malignant adeno-carcinoma or alveolar carcinoma was found. 6 were mixed tumors containing varying amounts of cartilage, fibrous tissue, myxomatous tissue and epithelium. In 3 cases the characteristics were of uncomplicated squamous epithelioma. There was also 1 case of round cell carcinoma which is usually referred to in the literature as round cell sarcoma.

Although not strictly a parotid tumor it may be of interest to report here a case of Mikulicz disease in a woman 70 years of age. The soft cystic bilateral tumors had been present for 6 months. No other growths were found although they are sometimes present in the lachrymal glands and eyelids. Regional lymph nodes and the liver and spleen may be enlarged late in the disease. Osler¹³ reports a case and states that the parotid gland substance is not disturbed. The swelling consists of an infiltration of fibrous tissue and small round cells. A relation to Hodgkin's disease and tuberculosis has been suggested. Our case responded well to radium.

In 9 cases extension of the disease had occurred to the deep cervical lymph nodes before treatment was commenced. With one exception, the growths had been operated several times. This substantiates the observation of Wood² that the malignant characters are increased by repeated attempts at removal. Only 2 of these cases were benefited. In one, an elderly woman, the tumors are much smaller and have shown no activity for one year. In the other there have been no signs of disease for 1½ years. In late cases, radiographs showed that metastases to lung tissue were



FIGS. 5 AND 6.—This woman, aged 71 years, had suffered for nine months from an enlargement of both parotid glands. The tumors were soft and almost cystic in areas. Microscopic examination of a small section showed it to be a case of Mikulicz disease. External radiation caused a complete disappearance of the tumors. The patient has remained well for nearly two years.

present three times, and long bones twice. In 2 cases there was direct invasion of superior and inferior maxilla.

TECHNIQUE OF TREATMENT

The same conditions, that render a parotid tumor favorable in a surgical sense, influence to the same degree the prognosis with radium therapy. But in addition, we believe that with radium emanation, we have advanced another step, in that we have literally salvaged cases, that in no way could be controlled surgically.

The preliminary phase of the treatment, as carried out at the Memorial Hospital, is to subject the tumor to an external radiation of about 2,200 millicurie hours, the emanation

being 3 centimeters from the skin surface. The rays are filtered through $\frac{1}{2}$ millimeter of silver and 2 millimeters of brass, thereby removing all rays except those that penetrate deeply. The area of the source is 24 square centimeters. Such a dosage will produce a definite skin erythema over an area of about 50 square centimeters. In certain types of cellular growths, this will cause a marked regression, commencing a week after treatment. For very large tumors, a dose of 9,000 millicurie hours at a distance of 6 centimeters may be used, the filtration remaining the same, but the area of source being 77 square centimeters. For most lesions, this is not sufficient, especially for the firm mixed tumors, which contain abundant fibrous tissue or cartilage. For these and unresponsive carcinomas, we resort to the use of unfiltered glass tubes of emanation. These measure about 3 millimeters in length, and 0.3 millimeters in diameter and contain usually from 1 to 1.5 millicuries. They are inserted interstitially under local anæsthesia, by means of a fine trochar needle. It is customary to calculate that the contained emanation is effective over a period of 132 hours, so that the dose in unfiltered millicurie hours is readily obtained.

This method permits the placing of beta and gamma rays directly in contact with the tumor cells without destroying the vitality of the protecting skin. It is preferably done through a skin incision, which gives the advantages of accurate tumor localization, accurate radium



FIG. 7. Structure of a papillary adenocarcinoma of parotid gland.

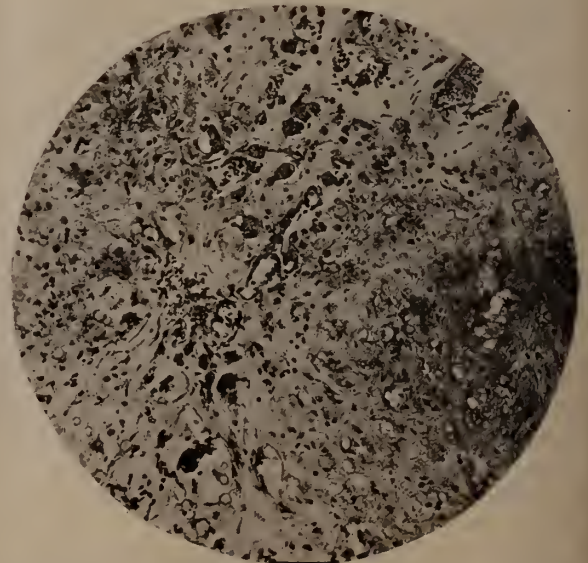


FIG. 8. Structure of a mixed tumor of parotid gland, showing few epithelial cells, in a stroma composed of fibrous tissue and cartilage.

application and the opportunity of section removal. Due regard must be given to the position of the 7th cranial nerve which is always in grave danger of injury when the growth is treated surgically. We have produced in 2 patients a paralysis. In one it was incomplete, and disappeared after being present for a year. No ill effects have ever been observed from the buried glass tubes. They are probably completely isolated by a fibrous tissue barrier.

EFFECTS OF RADIATION

It has been shown conclusively that following the use of physical agents, the natural barriers against malignant invasion are fortified. A leucocytic infiltration is followed by the formation of fibrous tissue. The vascular channels undergo a slow obliteration. The activity of the tumor cells is decreased. They later degenerate and are absorbed. Such effects are probably not altogether due to a mere destructive action on neoplastic tissue. Subtle biochemical alterations in the cell perhaps account for many of the phenomena.

The clinical signs of successful radiation, are at first hyperæmia of the overlying tissue, and swelling and softening of the tumor. This initial increase of the size of the growth should not be misinterpreted. As fibrous tissue is produced, the tumor becomes smaller and firmer, and if it originally was of a cellular type the anticipated result would be a very small fibrotic inert mass. It must be emphasized however, that these changes are slowly but progressively produced, and are still occurring many weeks after treatment, which should not be repeated too soon. Neoplasms containing large amounts of fibrous tissue and cartilage are substantially reduced in size, but from the very nature of their construction, it is impossible in many cases to cause an absolute disappearance. But our experience leads us to believe that the cartilaginous mass which remains is harmless. If tumor cells remain, they are so completely imprisoned that they are powerless, because of an ever failing source of nutriment. But if any be liberated, they might then take root and flourish on more fertile soil, and as Ewing and Wood have both pointed out, with greater powers of invasion. We therefore believe that fibrotic masses remaining after treatment, should be observed frequently, but not removed.

RESULTS OF TREATMENT

Parotid gland tumors are adapted to treatment by physical agents for three reasons.

1. They are readily accessible.
2. The majority of them have a relatively benign course, because of a limiting capsule,

which if ruptured leads to implants that no longer have the natural restraint to growth.

3. Active production of metastases is usually delayed in the natural course of the disease, until very late.

Of 11 operable cases, 3 of which were recurrent, 10 are at the present time, clinically free of any neoplastic disease, but in 5 of these at the tumor site there is remaining a small quiescent fibrotic mass, which we propose to leave intact. These patients have been well from 6 months to 3½ years. The eleventh case in this group, is still undergoing treatment, with a very satisfactory response.

Of 43 inoperable cases, 23 of which were recurrent, 12 are clinically free of active disease for periods ranging from 6 months to 3½ years. 15 patients were definitely improved, locally and generally, and 16 were so far advanced, as to render quite negligible, any palliative effect of the treatment. We are quite convinced that in this group those cases which are now clinically well, are salvaged cases, and were quite without the sphere of any other form of treatment.

Of the cases reported as clinically free of disease, and which at the time of treatment were subjected to biopsy, 5 were of the mixed tumor type, 4 were reported as carcinoma, or adenocarcinoma, 1 as squamous epithelioma and 1 as Mikulicz disease.

It should be noted that the 4 cases of carcinoma that are clinically well, represent a group that is considered very unfavorable from the standpoint of surgery. Only one of these was considered at all operable. The extent of disease of the other 3 cases precluded the hope of any benefit from attempted excision.

CONCLUSIONS.

1. Parotid gland tumors offer a favorable and encouraging opportunity for radium therapy.
2. Results for the 4 years ending with 1921, may be tabulated as follows:

	No. of Cases	Clinically Free of Disease	Improved	Unimproved
Primary Operable...	8	7	1	0
Primary, Inoperable..	20	7	7	6
Recurrent Operable..	3	3	0	0
Recurrent Inoperable	23	5	8	10

3. We believe that from the analysis of our case records the status of the radium treatment of parotid tumors is as follows:

(a) Mixed tumors—If the case is favorable for excision it is likewise favorable for radium therapy and the latter does not predispose to recurrence or the production of metastases. If the tumor is inoperable, radium offers an opportunity that may lead to improvement or clinical cure.

(b) Carcinomas—Whereas surgical results are very disappointing, radium treatment affords

a reasonable hope of disease control or clinical cure.

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LIMITATIONS OF ROENTGENOLOGIC DIAGNOSIS.*

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BY supplementing subjective symptoms with objective facts, medical diagnosis has gained rapidly and enormously in efficiency. To this achievement the chemist, the microscopist, and the roentgenologist have made important contributions, and the laboratory has become indispensable. Diagnoses today are so much better than those of a few years ago that any criticism seems almost captious. Nevertheless, I believe that unnecessary mistakes are still being made, and I am presenting for your consideration some of the possible causes of these errors.

Some of these causes can perhaps be attributed to the clinician. One is the tendency to accept laboratory diagnoses implicitly without checking them up with the clinical facts. Recently, at a meeting of the Committee on Medical Education of the American Medical Association, C. P. Emerson said, "If the physician had the welfare of the patient at heart he would depend on the laboratory less and on his own examinations more." Evidently, Emerson does not mean that laboratories should be abandoned, but he does object to supine dependence on laboratory tests and neglect of the clinical examination.

Thorough reliance on the roentgen ray is a gratifying compliment, but it sometimes leads to error. Such unjustified faith is due to an incomplete understanding of roentgenologic reason-

ing, of the successive steps in making diagnoses, and of the fact that these diagnoses must vary in certainty all the way from confident assurance to a doubtful opinion. First, it is necessary to determine that the shadows are abnormal. In theory this should be the easiest step of all, but even a skilled observer may fail here because there is an endless number of normal variants. Second, it must be decided whether the abnormal shadow represents an organic lesion, or is functional, the result of definite or indefinite pathologic conditions elsewhere. Third, and most difficult of all, it is necessary to adjudge the probable character of an organic lesion. This is an exercise in pathologic anatomy in which the specimen is neither directly seen or touched, or an adventure in bacteriology without a microscope. Even by direct microscopic view it is often difficult to judge the nature of a lesion, and it is certainly not less difficult with the x-ray.

Not long ago, a physician wrote to me desiring to know where he could obtain a competent roentgenologist. He asked, "Do you consider any of the x-ray specialists in my city really capable to the extent that they can dictate a laparotomy?" I replied that I considered several of the roentgenologists in his city to be very able men, but I did not know of one anywhere whom I would permit to "dictate a laparotomy" on me, although there were many whose diagnostic opinions I would accept, and the question of operation was one for the clinician and surgeon to decide, after they had considered all the findings, including the roentgenologic.

Over-confidence in the simplicity and accuracy of roentgenologic diagnosis is also shown in the too common acceptance of diagnosis made by technicians. Examinations of the blood, sputum, and urine can be made by technicians because these tests are relatively simple and the results are reported chiefly in terms of fact. The diagnostic interpretation is really made by the clinician, a doctor of medicine. Many technicians make excellent roentgenograms, but these should likewise be interpreted by a physician. A thorough knowledge of anatomy, physiology, and pathology and a broad acquaintance with the whole science of medicine are absolutely essential for the reliable translation of roentgenologic signs into terms of diagnosis. Roentgenology is for physicians and should be practiced by physicians.

Often this trust in the capabilities of the x-ray is so great that the patient is sent to the laboratory with only perfunctory clinical investigation beforehand, and needless examinations result. It is true that a complete roentgenologic examination of the bones, accessory nasal sinuses, teeth, chest, kidneys, and alimentary tract will confirm or exclude the presence of many diseases, but a carefully taken history, a thorough physical examination, and a little plain thinking will ob-

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viate the need of a roentgenologic "all over." A systematic clinical inquiry cannot be dispensed with, and it had better be done first rather than last. A careful study of the patient's history and physical signs will lead the clinician far toward the diagnosis, confirm the habit of logical reasoning, make him less dependent on laboratory tests, and above all promote a keener personal interest in the patient himself.

Whatever laboratory diagnosis may be some day, it is not yet automatic. It is the patient's right, a right upon which each of us would insist, to have his case considered from every angle, and to demand that the laboratory tests, symptoms, and physical signs be checked, counter-checked, compared, and correlated into a rational summary. Even a painstaking record of all the facts is worthless without this synthetic correlation.

One of the most skillful diagnosticians that I know acquired his discernment before laboratory methods came into vogue. His keen understanding is perhaps somewhat intuitive, but it is chiefly due to his ability to discriminate between the important and the unimportant, which is one definition of common sense. It is highly questionable whether patients today are getting the maximal benefit of our common sense.

Roentgenologists themselves are perhaps not wholly blameless for the defective co-operation between them and the clinicians. One reason for our mistakes is the effort sometimes made to fulfill impossible expectations, to see things that the x-ray does not reveal, and to make decisions that cannot rightfully be made. When the existence of the roentgenologist depends on a continuance of the clinician's favor, it is hard for the former to admit a lack of the abilities ascribed to him. The situation unduly tempts him to make diagnoses on indecisive phenomena, or at least to report a multitude of trivial details which the clinician may regard as of diagnostic weight. W. J. Mayo has characterized the petty signs of disease as "small change" which does not go far in the settlement of a large account. Even a large aggregation of "small change" is not sufficient to support a diagnosis that is satisfactory to sober judgment.

Roentgenologists have pointed out their limitations quite as freely as other medical workers. Most men prefer to talk and hear of plus rather than minus quantities, but it is apparently necessary, even if it is unpleasant, to emphasize the negative side, and I shall recount a few specific examples.

We are quite aware that the x-ray is an extraordinarily useful means of demonstrating pulmonary tuberculosis. Admitting its conspicuous efficiency, there is nevertheless a considerable aggregate of erroneous affirmative diagnoses for which the clinician and roentgenologist are jointly

responsible. The roentgenologist constantly is tempted to make a bold report, "tuberculosis." Although most of such diagnoses are correct, some of them are not, and it is a grave fault to brand a relatively sound person tuberculous; it is shocking to him and his family, and perhaps entails confinement in a sanitarium. The roentgenologist has been led into this error by trying to compete with the clinician in detecting the earliest manifestation of this infection, at a time when there is a chance for remedial measures. The roentgenologic machine is speeded beyond the limits of safety and certainty; the examiner fails to distinguish between the evidences of old tuberculous infection and the evidences of active tuberculosis, or he is unaware of a recent simple pneumonic process whose shadows may be taken for those of the graver disease. Believing that he is performing a worthy service to the patient, he reports the findings as positive, and the clinician, desiring to render equal service, accepts the findings without further investigation. Less speed, less implicit faith in roentgenologic opinion, more thorough clinical study, and re-examination by the x-ray would prevent many of these diagnostic disasters.

Tumors of the lungs and mediastinum are easily depicted by the x-ray. However, the internist is seldom satisfied with the information that a tumor is present; he expects the roentgenologist to divine its character, whether benign or malignant, carcinoma, sarcoma, or cyst. In many instances the roentgenologist can venture a guarded opinion as to this feature, but its uncertainty should be understood by all concerned. When clinicians with whom I am associated press me for pathologic diagnosis in such cases, I am in the habit of saying, "I am sorry but I have no microscopic attachment to my x-ray machine."

Most lesions of bone are plainly shown by the x-ray and typical cases can, as a rule, be readily identified. Classic cases of osteomyelitis, tuberculosis, syphilis, sarcoma, metastatic malignancy, or Paget's disease show definite and fairly distinctive signs. But every case is not classic either with regard to the composite of shadow changes or to their location. Osteomyelitis, tuberculosis, syphilis, and sarcoma are often especially difficult or even impossible to differentiate by their shadows alone. Besides the atypical lesions, rare diseases sometimes complicate the problem and disturb the serenity of the roentgenologist, who is, nevertheless, expected to give his opinion with diagnostic assurance.

In gastro-intestinal diagnosis the x-ray has shone with brilliance. In common with others who have devoted their chief attention to this field I have taken pleasure and pride in calling attention to the remarkable efficiency of the roentgenologic examination. Yet I sometimes wonder if the cautions and exceptions, which have been

frankly set forth in the literature, are sufficiently heeded.

Advanced cancer of the stomach deforms its lumen so markedly that the presence of a gastric tumor is usually clear. Ninety-five per cent of gastric tumors are cancerous. Knowing this, the roentgenologist commonly makes the diagnosis of cancer, although he is aware that there is one chance in twenty that the lesion is not malignant. No deception and no pretense of knowledge which he does not possess is intended, and no harm will result provided the clinician understands the roentgenologist's method of reasoning. Gastric syphilis is an especially illusive simulant of cancer, and when the least doubt exists, a careful clinical examination and serologic test should be made.

The x-ray gives much information concerning the operability of a gastric cancer by showing its situation and apparent extent, and the surgeon welcomes a prediction with regard to this feature. It is quite legitimate, therefore, for the roentgenologist to give his opinion provided the basis of his view is comprehended. A report that a cancer is operable signifies only that it is probably resectable so far as the site and extent of gastric invasion is concerned, and takes no account of possible glandular involvement or certain phases of metastasis which cannot be shown by the x-ray. In essence, the problem is to spare the patient futile surgery and yet give him every reasonable chance of relief or cure. Many factors other than the roentgen findings enter into the question and should be weighed before a final decision is made.

Gastric ulcers are exhibited with facility by the x-ray. Determining whether they are simple or malignant is a different matter. Sometimes we are able to say that certain of them are probably malignant, as, for example, the ulcerating cancer seen as a meniscus-like crater in a filling defect, or even the niche type of gastric ulcer in which the crater is excessively large. But smaller ulcers of the niche type may also prove to be malignant under the microscope and the roentgenologist cannot possibly surmise their malignancy, a task which is not always easy for the pathologist.

Lesions near the pylorus are often lacking in differential signs and it may be impossible to determine whether the distortion of the pyloric region is due to a small cancer, a gastric ulcer, a duodenal ulcer with extensive adhesions, or a syphilitic lesion. Only one fact is certain from the roentgenologic viewpoint, namely, that there is a lesion at the gastric outlet, and any clues as to its probable character will have to be obtained from sources other than the x-ray.

The relative accuracy of the x-ray in diagnosing duodenal ulcer is familiar to you, for one of your own members, Lewis Gregory Cole, made

this efficiency possible. However, this extraordinary success should not be regarded as typical of all gastro-intestinal diagnosis, much less of roentgenologic diagnosis in general.

In the colon, cancer, diverticulitis, tuberculosis, and ulcerative colitis give signs which ordinarily are emphatic and often distinctive. But the signs are not always definite or diagnostic, and it is unfair to the roentgenologist to demand an interpretation when he cannot safely give it. Speaking generally, I believe that a refined roentgenologic diagnosis of colonic lesions is less easy and less reliable than the diagnosis of gastric or duodenal lesions.

All the limitations mentioned thus far apply to lesions which lie within the well cultivated field of the x-ray. Outside this field the limitations increase in number and stringency, and grave errors result from driving the x-ray beyond its familiar bounds. Specifically, I have in mind the diagnosis of adhesions, chronic appendicitis, gastropnoxis, enteropnoxis, stasis, gallstones, and disease of the gallbladder.

On the face of it, the demonstration of adhesions would seem to be rather constantly feasible. Theoretically, they should produce irregularity of contour and fixation of a movable viscus. Sometimes these phenomena are definitely present and the diagnosis of adhesions is well founded. More often, however, in my experience, the diagnosis of adhesions has been disappointing, and either they were present without signs, or apparent signs were present without adhesions. Adhesions producing definite manifestations are usually merely a feature of a lesion which is also demonstrable and diagnosis of the latter is of far greater importance. Abdominal operations are often followed by adhesions, and if the x-ray happens to reveal evidences of them, this information is trivial unless it can also be shown that they are producing obstruction or other grave symptoms.

Gallstones which contain a sufficient amount of calcium show plainly in the roentgenogram, Unfortunately, the majority of stones have a low lime content and are not readily, if at all, demonstrable. It is well known that a few roentgenologists who have studied the subject intensively have reported a high percentage of diagnoses of gallstones and other pathologic conditions of the gallbladder. But, despite reasonable efforts, I have not succeeded in obtaining diagnostic shadows save in a very small proportion of cases.

In the absence of important lesions some roentgenologists and clinicians are inclined to attribute too much significance to the form and position of the stomach. Attention beyond its merits has been given especially to gastropnoxis, the elongated, low-lying stomach habitually seen in persons of the so-called asthenic build. Patients often volunteer the information that a previous

examination by the x-ray showed a "dropped stomach." Whatever may have been the original indications for the examination, this finding of a "dropped stomach" has become the source of dismal introspection and apprehension, a frame of mind for which the roentgenologist should be loath to assume responsibility. Since in most of these cases the stomach merely corresponds to the habitus, it should be regarded as normal. The same considerations apply to enteroptosis, which is of common occurrence in asthenic patients.

The roentgenologic diagnosis of chronic appendicitis has always been a debatable question. Although some observers attempt it, I have never been able to find roentgenologic signs which would consistently warrant this diagnosis. Chronic appendicitis is the safest diagnosis that the roentgenologist can make, with or without an examination. This is demonstrated by the fact that during 1921, over 1,600 appendixes were removed at the Mayo Clinic and of these only eight were found to be normal. The important point to determine is, whether the diseased appendix is solely or largely responsible for the patient's symptoms. Recently, one of my assistants after examining the colon ventured this report: "Appendix visible, segmented and fixed." A few days later, W. J. Mayo operated on the patient, and having the x-ray report in mind as he explored the appendiceal region, he remarked, "Yes, the appendix is fixed to the extent that he cannot wipe his nose with it."

A large proportion of patients suffer from constipation. In late years this condition has fallen under the more impressive title of stasis, and in conjunction with more or less mystical kinks, stasis has achieved considerable theoretical importance. Since constipated persons show a retardation of the alimentary current and since apparent angulations of the bowel are often seen in the roentgenogram, the x-ray offers easy confirmation of stasis and shows its apparent cause. Thus, much useless, sometimes harmful, surgery has resulted.

If the foregoing criticisms are well founded, the remedies are obvious. The clinician should retain his seat at the head of the council table. He should know the limitations of roentgenology and of the man who is using it, for men vary in skill in different parts of the same field. He should weave the laboratory reports and his own knowledge into a coherent, reasonable, logical diagnosis, one that he would accept if he himself were the patient.

The medical schools can help by giving training in roentgenology equal to that given in other laboratory aids to diagnosis, so that the practitioner can make interpretations himself or justly

appraise those made by roentgenologists. The roentgenologist can help by promoting mutual understanding with the clinician. He can refrain from advice which he is not qualified to give, make brief and clear reports, confine his diagnoses to cases presenting diagnostic signs, and, if he is uncertain, frankly admit it.

It is not my intention to disparage the value of the x-ray. On the contrary, I have ardent faith in its tremendous worth. The test tube, the microscope, and the x-ray constitute a powerful trinity, and he who works with the x-ray is inclined to regard it as the most potent of all. It is merely necessary to recognize the limits beyond which we cannot at present safely go.

ROENTGENTHERAPY IN MALIGNANT DISEASE.*

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IN presenting this paper, I do not wish to give the impression that I consider this the only method of treating malignant disease, nor even that it is the best method of treating malignant disease; but it is one method by means of which definite results have been accomplished, and it can be combined to advantage with surgery, with radium, and with electro-coagulation.

Malignant disease is so wide spread, attacks all classes of people, produces an enormous death rate, comes on insidiously, spreads rapidly and is of such a loathsome character, that every possible method of treatment alone, or combined with that which others attempt to use, should be brought into action to overcome this malady. In a brief paper of this kind it is only possible to give a resume of the work which has been accomplished; so that the general practitioner or surgeon may know about what can be expected from this method of treatment, either alone, or combined with others. It is the individual case that always concerns the practicing physician and surgeon, and there are so many variations in the characters of malignant disease and in its history and its rate of development, that it is impossible to lay down rules, or draw very accurate conclusions.

Much histological study has been done to show the effect of radiation on malignant disease, and recorded by Colwell and Russ.¹ A very excellent description of the changes which take place in their tissues has been given by Clunet and Raulot-Lapointe.² As a result of the observation upon nineteen cases of squamous cell carcinoma of the Maltighian type in the human subject, they state that before the ultimate disappearance of the growth, the cells pass through at least

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five successive phases which are characterized as follows:

(1) *The latent phase.* The latent phase varies from six to fifteen days, and during this time no cytological changes are to be seen. Its duration is rather shorter for carcinoma of the spinocellular type than for the baso-cellular type.

(2) *The development of monstrous characters.* This is marked by:

(a) An enlargement of all parts of the cells, which may be increased in diameter as much as two or three times.

(b) An increased number of atypical mitoses.

(c) The appearance of enlarged nuclei, markedly chromophile.

(d) The appearance within the cells of forms having a pseudo-parasitic character.

(3) *Keratinisation.* Keratinisation may be either disseminated, total or atypical. When disseminated, each cell undergoes keratinisation independently of its neighbor, in contrast to these effects appearing to influence all cells alike. When atypical keratinisation is observed, the protoplasm becomes granular, at first orangeophile and finally eosinophile; these granules gradually fuse together into one mass of keratin, and although they are probably similar in their chemical constitution to eleidin, they do not give the same color reactions as this substance.

The nucleus is subject to an evolution which varies with the particular case; sometimes there is karyorrhexis, then diffusion into the protoplasm; sometimes the nucleus becomes clear, and acidophile granulations appear in it and a transformation in a mass of keratin follows. Nuclear keratinisation may, however, occur without the pycnotic stage; the process then appears to begin in the nucleolus, and in some cells this seems to precede the transformation occurring in the other parts of the cells.

(4) *Disintegration and phagocytosis.* The disintegration of the degenerating cells appears to be caused mainly by the polynuclear cells and the fibroblasts of the stroma, which are in active condition. Macrophages and plasma cells appear at a later stage and accumulate around the vessels, remaining in the vicinity long after the disappearance of the malignant cells. At the periphery of the keratinised masses plasmodia are sometimes found, simulating the type presented by the cells of the neoplasm, but they are rarely found in great numbers. The masses of degenerate cells, before becoming entirely destroyed, may cease to give the color reactions of keratin, and remain encapsuled in the dermis for prolonged periods.

(5) *Formation of the connective tissue scar.* As a general rule this is not brought about by

the formation of fibrous masses, but the tissues assume the structure of healthy skin, except for the absence of hair and of glands; the elastic fibres are also less numerous and more attenuated than they are normally. No neoplastic masses are to be found in these supple scars, which appear to be quite healthy; on the other hand at a depth below the skin, cells may be found which have been acted upon by the X-rays, but are not yet destroyed; such cells remain in a latent condition, and if the treatment is not continued, they give rise to recurrences. They are distinguished by a very chromophilic nucleus, though not pycnotic, a reduced amount of protoplasm and an avidity for basic coloring material.

Epithelioma of the skin. Epithelioma of the skin may be divided into the baso-cell and the prickle cell varieties, and these two are very different in their degrees of malignancy. In a review of 644 cases of basal-cell epithelioma, which were treated between the years 1910 and 1919 by MacKee,³ he showed a clinical cure of 91 per cent. MacKee very justly remarks, "When it is considered that the cases were not selected, and at least one-half the failures were due to the patient's inability to have second or third treatment at proper intervals, or that the case seemed practically hopeless when treatment was instituted, 91 per cent seems very satisfactory. As an illustration, several of the patients received a primary treatment which did not suffice to effect a clinical cure; then on account of illness, old age, stormy weather or other reasons they did not return for the second treatment until the lesion was worse than it had been in the beginning. In other instances the lesions were very deep and indurated, even involving the articulation, or the entire orbit and that had received previous roentgen ray treatment. If one could admit such cases the percentage of cure would be in the neighborhood of 96 or 98 per cent instead of 91 per cent."

It is my opinion and my experience, that if the basal-cell epitheliomata are treated before they have invaded the cartilage, bone or fascia that all of them can be gotten well. This is especially true, if one combines preliminary destruction of the disease by electro-coagulation. It is my practice to destroy these epitheliomata by electro-coagulation, and follow it by radiation, excepting in the cases which involve the eyelid. In the group of patients, in which the eyelids are involved, treatment by radiation alone, principally radium, gives best results, and the deformities of the eyelid are usually prevented.

If the cartilage of the nose or ear are involved by these epitheliomata, in my experience they do not get permanently well by radiation alone, but if the lesions are first thoroughly destroyed by electro-coagulation, I believe that practically all of this group can be gotten well. If the disease

has extended into the bone, it becomes extremely difficult to get the patient permanently well. Best results are obtained by preliminary radiation, then local destruction by electro-coagulation, with immediate removal of all of the disease and destroyed tissues, so that when the operation is finished one should have bleeding healthy bone. Destruction of bone lesions by electro-coagulation is apt to be followed by extensive necrosis, unless this destroyed bone is removed at the time.

Most of the failures in the treatment of epithelioma, occur in those that have been previously incompletely treated, either by caustic, excision, paste or inefficient X-ray or Radium treatment. No matter what form of treatment is used, it should be complete and radical from the beginning. Ineffectual treatment results in part, from an improper diagnosis, and in part, by fear of producing some cosmetic defect. On this account we should distribute the knowledge, among the laity, that practically all of these early lesions, if treated thoroughly and completely can be gotten well, and that they can be gotten well without excision. It is the fear of an operation that keeps many of these patients from coming for early treatment, and it is this same fear that drives many of them into the hands of quacks.

Technique of treatment of cancer of the skin. The technique to be used in the treatment of cancer of the skin, will of course vary with the location and the extent of the lesion. It will also vary according to the skill of the operator, and the results will also vary very much according to the skill of the operator. In general, with the exception of the epitheliomata of the mouth and eyelid, I destroy the lesions on the skin first by electro-coagulation, and then follow immediately with a full erythema dose of X-ray upon the base of this tumor, after the destroyed tissue has been curretted away.

An erythema dose for this purpose, with my machine, is produced by a nine inch parallel spark gap, five milliamperes of current, six minutes exposure at twenty centimeters distance through two millimeters of filter. This erythema dose cannot be blindly transferred to any other and every other machine. When this combination can be used, I count on getting every case well, providing the patient is treated before the disease has extended deeply and involves the cartilage, bone or deep fascia.

If, for any reason, electro-coagulation cannot be used as above, then from two to four or six erythema doses should be given over the tumor area, and extending approximately one-eighth inch beyond this area. Generally such a massive dose will be sufficient to cause a complete disappearance of the tumor tissue, but one cannot be sure, and the patient should be kept under observation until the lesion is entirely healed.

In the lesions about the eyelid, radium applications will accomplish most, and the amount of treatment, doses, etc., has to be varied according to the lesions and its location. This brief paper will not permit a complete discussion of this phase of the subject. In all cases the patient should report from time to time, at longer and longer intervals, for several years, until one is quite sure that the lesion is completely and permanently healed.

Epithelioma of the lip. This subject will be found discussed in more complete form in the proceedings of the American Radiological Society, December 9, 1921, Chicago, Ill.⁴

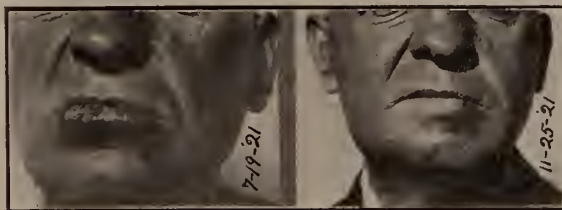


FIG. 1. 7/19/21. Epithelioma of the lip. Duration four months. (b) 11/25/21. Complete disappearance under radium applications internally and externally, with deep Roentgentherapy applied in the submental and submaxillary region. Still well.

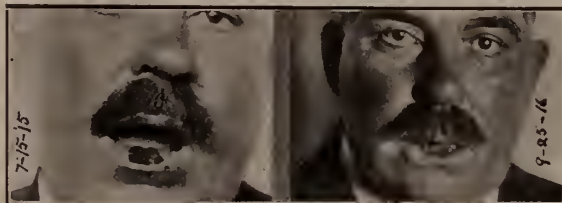


FIG. 2. (a) 7/15/15. Epithelioma of the lower lip. Duration three years. (b) Well September 25, 1916, and December 6, 1921, as a result of electro-coagulation locally followed by radiotherapy locally and to the submental and submaxillary glands.

In general, it is my custom in dealing with primary carcinoma of the lip, to destroy the local lesion by electro-coagulation and to follow immediately with a full erythema dose of filtered radiation, consisting approximately of a nine inch parallel spark gap, five milliamperes of current, thirty minutes exposure, through six millimeters of filter, at a distance of thirty centimeters, and this same radiation to be applied through the glandular area extending into the submental and the submaxillary regions. This technique only applies accurately to the equipment which I use. It will produce an erythema dose. Each operator must know his own radiation value which he is using. This radiation should be repeated in about three weeks, and if there are any palpable lymph nodes, this should be followed in about two weeks by the insertion of radium

needles directly into the lymph nodes. By this means if the patient is treated before there are palpable lymph nodes, practically all of the patients can be gotten well. After there are palpable lymph nodes—after definite metastasis has taken place—the results will vary with the extent of the disease, but I still believe that it is the best method of treatment, if one can combine electro-coagulation, the roentgen ray treatment, and the use of radium needles inserted directly into the metastatic lymph nodes. If the disease has already destroyed a great portion of the lip, so that one cannot sacrifice any more tissue by electro-coagulation, then radium should be used, and used thoroughly and skillfully, and if one has sufficient patience and skill, it is likely that the remaining portion of the lip can be saved, and the patient gotten well.

Recurrent cases are very much less satisfactory to treat with radium and many of them will be failures. Therefore, it is very undesirable that any patient who has an epithelioma of the lip should be treated by any other means preceding this form of treatment. In all instances cancer should be treated thoroughly and radically from the beginning, for any ineffectual treatment will only make the disease worse and more resistant to radical treatment.

Carcinoma of the mouth and tongue. The roentgen rays play a small part in the treatment of carcinoma of the mouth and tongue, because of the difficulty of making thorough applications of the rays, or the difficulty of bringing the rays in direct contact with the diseased tissue. In these cases it is best to make surface applications, over the diseased area, by means of radium, and external application, either by means of radium pack or by the general application of the roentgen rays over the glandular distribution from the diseased area. This is to be followed, either by electro-coagulation of the diseased area, or by the insertion of radium needles locally, sufficient to destroy the disease, or in some cases by total excision. I believe that by a careful combination of roentgen rays, radium and electro-coagulation that the best results will be obtained. In some instances it is desirable also, to utilize surgery, either for the removal of the disease or for the repair of the tissues after electro-coagulation, and after the disease has been completely destroyed.

Epithelioma of the larynx. This subject has been recently discussed in detail, before the sections on Rhinology and Laryngology of the College of Physicians, of Philadelphia, and can be only referred to briefly in this paper.⁵

In general the roentgen rays applied externally to the larynx has caused temporary disappearance of the malignant disease and has brought about, at least temporary recovery from the dis-

ease of the larynx, so that the patient could breathe and felt pretty well. More satisfactory results have been obtained, when radium is combined with roentgen rays, and especially if radium is inserted directly into the diseased tissue, through the thyro-hyoid membrane. In advanced cases of carcinoma of the larynx the treatment should be preceded by a tracheotomy, for there is very likely to be considerable edema of the larynx, following the radiation treatment, and that an emergency tracheotomy may become necessary, unless it is provided for in advance.

Carcinoma of the breast. This subject has been discussed in detail recently, before the Suffolk County Medical Society, Boston, Mass.,⁶ and can only be summarized in this brief discussion.

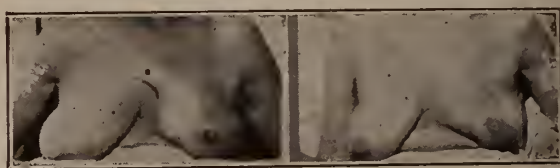


FIG. 3. (a) 3/12/21. Carcinoma of left breast. Duration one year. Palpable metastatic glands. (b) Complete disappearance of all tumor tissue following general deep Roentgentherapy over the glandular areas, and the insertion of radium needles locally into the tumor tissue. Still well 4/17/21.

Basing my opinion upon a study of the principles of radiation, the pathology of carcinoma of the breast, observations upon cases that have been operated upon, and a personal experience with between five and six hundred cases which were given post operative treatment, treatment for recurrent carcinoma, or treatment of the primary carcinoma with metastasis, has led me to formulate the following plan of treatment.

I believe that one of the two lines of action should be followed. In all instances, I believe that it is advisable to give the patient a preliminary course of radiation treatment, occupying a period of between two and three weeks. The object of this preliminary radiation is to devitalize the carcinoma cells, so that they cannot be easily implanted into the operative wound, or so that if they are transferred during the time of the operation through the lymphatics, they cannot easily implant themselves and develop in the healthy tissue. This preliminary radiation treatment, I believe is correct, based upon experimental observation and upon actual clinical tests. At the end of this preliminary radiation, and within a period of two or three weeks from the time of beginning treatment, the patient should either have a complete operation, removing the carcinoma and metastatic lymph nodes, or the patient should have radium needles inserted into the palpable tumor tissue, so as to obtain a more direct local effect of the radiation. Such pre-

liminary radiation does not seem to interfere with the operation, nor with the healing of the wound. The operation should be followed, in about two weeks by another course of radiation by the roentgen rays, covering the entire operative field and the glandular areas leading therefrom.

Unless the disease is advanced, it is my custom, then, to stop treatment and watch the patient, giving no further treatment unless there is some sign of recurrence, but if there is any sign of recurrence whatever, or metastasis, even though doubtful, the patient should be radiated thoroughly over the diseased area and the glandular areas leading from the diseased tissue.

If for any reason the patient is not operated upon and the radium is depended upon to destroy the remaining diseased tissue, ten milligrams of radium should be used to each centimeter of tissue involved, for a period of eight hours, and this should be followed by further general radiation by means of the roentgen rays, over the entire diseased area and the glandular distribution radiating therefrom, keeping the tissues saturated with radiation, but not sufficient to produce a true dermatitis. In some instances, after the radiation has apparently completed the elimination of the disease, it will be desirable to remove the breast and any masses of fibrous tissue, which are palpable, because there are sometimes retained in this fibrous tissue a few carcinoma cells, which later develop and give rise to recurrence. One should therefore, not promise the patient, that there would be no subsequent operation. If all palpable evidence of disease has disappeared, however, I do not believe that an operation is necessary or advisable. The technique such as I am using at present for the anti-operative and the post-operative course of treatment, and which will be modified just as soon as I can find something better, consists of the following.

I use at present a nine inch parallel spark gap, five milliamperes of current, forty minutes exposure, through six millimeters of aluminum filter, at forty centimeters focal skin distance, and the application made through at least three different portals of entry.

One, covering the mammary region; second, the supraclavicular region; and third the axillary region. One of these doses is given over each of the areas named in succession, at intervals of two or three days, so that each of the three areas is covered twice within a period of two or three weeks. Unless there are marked constitutional symptoms following the radiation, this preliminary course of treatment is usually given within a period of two weeks. If there are constitutional symptoms, one may have to use three weeks to deliver the necessary amount of radiation. This line of treatment, of course applies

to the operable case. If the disease is far advanced, so that the mediastinum is involved, or there are extensive metastases, each form of treatment must of course, be adapted to each individual case. A similar post-operative course of treatment is then given. The post-operative course will cover a period usually of about three weeks. In all instances the patient should be kept under close observation, and should report for inspection, at least once a month, during the early period and later at longer intervals. If the disease is far advanced this post-operative treatment will be insufficient, and the amount of treatment must be adapted, accordingly to fit the case.

In no sense, can one lay down definite rules for radiation, any more than one can lay down definite rules for an operation. The surgeon describes his technique for an operation in a general way, but in all instances the operation must be adapted to the individual case. I am not prepared to say, which of the two lines of treatment are best, but for the present it will probably be a better general policy to combine the roentgen ray treatment with complete surgical removal.

Carcinoma of the uterus. In the consideration of carcinoma of the uterus, we should, first of all, classify the cases according to the stage of the disease.

(1) The early cases in which the disease is confined to the uterus, and considered the *operable group*. These are recommended for operation by Schmitz⁷ and Clark⁸ says that the results of irradiation of the cervix, practically removes this class of cases from the surgical field, although we have not yet completely yielded this point. Some abdominal surgeons⁹ claim that when the disease can be recognized by the sense of touch, that it is no longer an early carcinoma.

(2) Cases in which the disease appears to be doubtfully localized after physical examination. These are the border lines of operability. Under this class may be included also the operable cases, which are rendered a poor surgical risk, owing to complicating constitutional disease. These form the group which should especially be treated by irradiation.

(3) Cases in which the disease has clearly invaded the neighboring tissues and organs, as well as regional lymph nodes, which can be found by physical examination. These form the clearly inoperable cases, and should be subjected to intensive radiation, by both the roentgen rays and radium. The roentgen rays being applied externally and radium applied into and against the cervix, or associated with the insertion of radium needles.

(4) The cases in which the disease is extensive locally, in which metastases has taken place, and in which there is a marked general

cachexia. These should be treated symptomatically. Irradiation may make the condition worse, by setting up a toxemia, due to the breaking down of the cancerous tissue, and the life of the patient may be actually shortened.

(5) The recurrent cases, in which the disease has recurred locally, and in which metastases may or may not have taken place, and the disease may be slight or extensive. If this condition is far advanced, it naturally falls into the same class as group four. If the lesions are early, some good results may be obtained by thorough irradiation.

Therefore, in the latter three or four groups, radiation offers the only hope of amelioration of symptoms, or possible cure. These form the great majority of carcinomata of the uterus, and therefore, we must from the very outstart conclude, that the majority of patients with carcinoma of the uterus, as they come, find their only hope and relief from radiation. In group number one, which comprises the early and operable cases, we are not yet in a position to take a definite stand. It is generally believed that the carcinoma involving the fundus and uterus should be operated upon, unless there is some definite complication to contra-indicate operation. Of 23 cases of carcinoma of the fundus, treated by Clark, 12 apparently recovered. There is therefore, some hope from radiation in this class, when operation is inadvisable for one reason or another. In cases of cervical carcinoma, thorough radiation, with the deepest penetrating rays, plus local application of radium give apparently results that are equal to surgery, but so far have not been proven superior, though some authors have no doubt in their minds that deeply penetrating rays, plus radium, are superior to any form of operation. The future must decide this point. In deciding the matter for the individual patient, undoubtedly the patient should be operated upon, unless she can obtain the most careful and thorough radiation. It is the growing opinion that it is not advisable to treat with the rays, and then operate; because, if operated upon early, the surgeon is obliged to operate in a destructive and necrotic field. If operated upon late, there is so much fibrous tissue formed, that it makes the operation difficult, and the end result statistics do not seem to justify this procedure. In the treatment of groups two, three and four, keen judgment and much skill is required. Keen judgment is needed for the diagnosis and definite location of the disease, and much skill is required in applying a lethal dose of the roentgen rays and radium to the diseased tissue, without destroying the healthy and necessary normal structures in the neighborhood.

Undoubtedly much progress has been made during the past two or three years by the development of the high voltage machines, which

give a more penetrating form of radiation and which permits a greater amount of radiation to be delivered into the deeper tissues, and when this form of treatment is at hand and used skillfully, plus the additional application of radium to the uterus and into the neighborhood of the uterus, very satisfactory results have been obtained. Women's lives have undoubtedly been prolonged, and made comfortable and many have apparently recovered. In this fifth group, which comprise the hopeless cases, it is often advisable to do nothing in the way of radiation treatment; for if one adds to this already weakened and cachetic condition of the patient, the toxemia which sometimes follows heavy radiation, the patient's life may be shortened. Therefore, much skill and good judgment is needed in deciding upon the proper procedure in these advanced cases. At times, a patient that seems hopeless, under careful treatment regains comfortably good health, and life is undoubtedly prolonged with comfort.

Sarcoma.—Sarcoma yields more rapidly to radiation than does carcinoma, because the cells are more sensitive, and experiments have shown that about 75 per cent as much radiation is necessary to kill sarcoma cells as for the carcinoma cells. There is, of course, great variation, even in the amount of treatment needed for the destruction of sarcoma, and in some cases more treatment is required than the normal tissues will stand. Such cases, of course, result ultimately in failure. It is my opinion that practically all of the sarcoma should be treated by radiation, those involving the glands, the soft tissues, or the bone, and that better results will be obtained than by excision.

The lympho-sarcoma yields rather readily to radiation, but because of the likelihood of extensive involvement through the body, the disease cannot always be surrounded by the treatment and recurrence or developments in areas not treated are likely. Then too, it is extremely difficult to know just when a patient has had sufficient radiation, for after all visible and palpable disease has disappeared, we must assume that all the disease has probably disappeared. Yet, there may be a few cells remaining, locked up in fibrous bands, which later may redevelop and form a more resistant tumor than previously. Therefore, it is my practice to treat these cases rather extensively, both in the areas involved and in the adjacent lymphatic distribution, and after all of the disease has disappeared, the patient is requested to report at regular intervals, at the end of each month, and this interval is gradually increased to six months. In a case of a patient followed in this way, I have only recently found suggestive evidence of recurrence after five years. The evidence of recurrence is not definite, but

the patient will be given the benefit of doubt and will receive more treatment, though he has had no treatment for nearly five years.

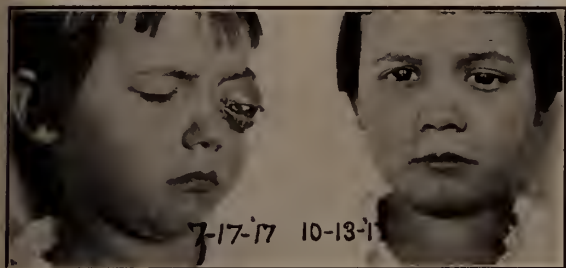


FIG. 4. (a) 7/17/17. Sarcoma of left orbit. Duration three months. (b) 10/13/17. Well as a result of Roentgentherapy. No injury to the eye. Still well March 30, 1921.

With the general sarcomas involving the soft tissues, brilliant results have been obtained, and I have patients that have remained well at least eight years. *Sarcoma of the orbit*, if not previously cut into, has given especially good results. The *recurrent* sarcoma of the orbit have shown improvement, and temporary disappearance of the disease, but in all instances there has been recurrence, or extension to the brain, and death.

The *osteo-sarcoma*, I believe gives better results than can be obtained by surgery, which is the only method for consideration. The giant cell sarcomas, which are relatively benign show good results, and I have one patient well sixteen years, of a tumor of the fibula, which was diagnosed at the time by microscopical section as round-cell sarcoma.

Periosteal sarcoma give less satisfactory results, but even these sometimes yield to the treatment, and I believe that it should be considered, at least, as an alternative.



FIG. 5. (a) 3/3/06. Sarcoma of fibula. (b) Well after three months' treatment in 1906. No treatment since. Still well April 12, 1921. Note complete recalcification of tumor area.

It is a great satisfaction to find that surgeons are recognizing the superiority of radiotherapy to operation. Schlegel¹⁰ has recently made a report upon five cases of osteo-sarcoma successfully treated by the Roentgen rays.

CONCLUSION.

(1) Radiation has made tremendous strides in the treatment of malignant disease since first used in 1896. The greatest progress has been made within the past few years.

(2) The treatment of malignant disease by radiation demands the same general knowledge of the pathology of malignant disease, and an equal amount of skill, and good judgment in the applications of the remedies, as is required by surgery.

(3) Malignant disease of the skin and lip, I believe, should practically all be treated by radiation, or combined with electro-coagulation.

(4) The roentgen rays can frequently be combined with radium and electro-coagulation, and with surgery to accomplish best results, and every patient should be considered in its individual place and best form of treatment.

(5) With this increase in power of the roentgen ray machines, and with the accumulation of radium, the greatest possible caution, and the deepest study should be required in the application of these powerful agents, which are powerful, both for good and for harm.

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A NEW METHOD OF APPLYING RADIUM THROUGH THE CYSTOSCOPE.*

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ALTHOUGH many devices have been proposed for the intravesical, endoscopic, or non-operative application of radium, none other than the introduction of radium emanation tubes has been altogether satisfactory.

The ingenious cystoscopic devices of Young, Corbus and others, necessitate the retention of the cystoscope in the bladder during the period of application. The radium capsule is enclosed in the tip or beak of the instrument, which portion is placed in contact with the tumor over extended periods of time. What with the motion due to respiration, the restlessness of the patient and our fear of radiating the normal parts of the bladder, there are enough factors of uncertainty to make even some ardent radium enthusiasts skeptical as to how much can be accomplished in this way.

In our own work with radium in the treatment of carcinoma of the bladder, the best results have been obtained with the use of radium emanations, with the cooperation of Dr. Isaac Levin, introduced through a suprapubic incision. Where, for particular reasons, intravesical application is advisable either in the preparation for future operative work, or as a method of preference, emanations are also considered to possess the greatest advantages. They can be easily inserted through the author's operating or radium cystoscopes.

However, this ideal procedure is available to but very few urologists. It has been my purpose to evolve a procedure that would bring an intensive and efficacious method of applying radium within the reach of the cystoscopist; to perfect a method that will eliminate the necessity of leaving the cystoscope in the bladder, and thus permit of the prolonga-

tion of radium contact over a period of many hours without excessive discomfort to the patient.

THE AUTHOR'S METHOD

The armamentarium which has been successfully employed by me is simple, as also the technic of inserting the radium. It includes:—

1st, special radium needles; †

2nd, special applicators for the insertion of the needles into the growth ‡, and

3rd, either the author's operating cystoscope, a direct or oblique vision cystoscope, or the author's radium cystoscope. ‡

The Radium Needles.—Two sizes and types are recommended, steel needles containing 20 mg. each, and a hollow platinum needle enclosing approximately 50 mg. of the radium salt.

These have been especially constructed and are of minimum length, so as to be easily introduced either by means of an attachable wire stem or a special spiral applicator.

The needles are composed of two parts, the needle point with shaft (Fig. 1a), and a detachable eye (Fig. 1b). This arrangement permits of two methods of introduction, namely, with a wire shank or in a spiral applicator (Fig. 2).



FIG. 1.—Radium needle; a, shaft; b, eye.

The needle point is short and is an integral part of the radium chamber, its proximal end being provided with a female screw thread. This may receive either the eye end, or the male portion of a wire applicator. Thus, such a needle may be introduced into a growth either with an attached wire shank or as a complete needle whose eye receives a fine wire retainer.

† Constructed by the Radium Chemical Co., of Pittsburgh, Pa.
‡ Executed by the Wappler Electric Mfg. Co., according to my designs.

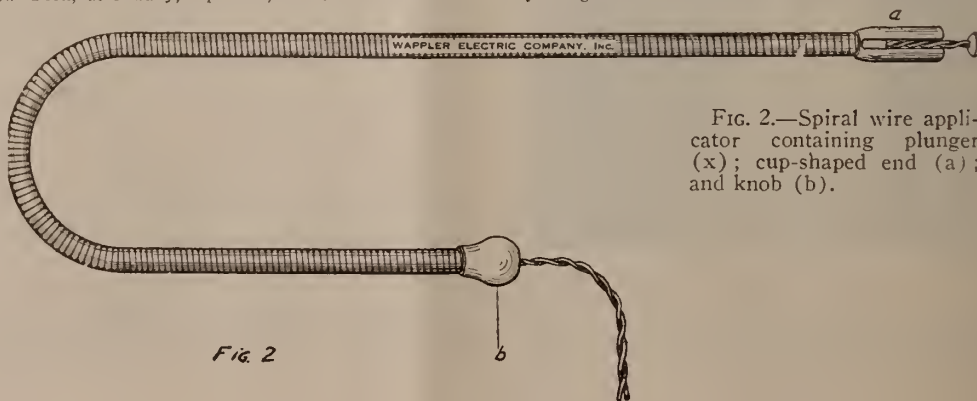


FIG. 2

FIG. 2.—Spiral wire applicator containing plunger (x); cup-shaped end (a); and knob (b).

*Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 20, 1922.

The Applicators.—Two types of introducer or applicator have been found useful. One of these is a spiral flexible wire shank (32 cm. long) whose distal end is furnished with a metallic cup for the reception of the eye end of the radium needle, and whose proximal end is fitted with a metallic enlargement for the adaptation of the rubber catheter or nipple. The metallic cup is an incomplete cylinder having a longitudinal slot or an aperture through which a holding wire may slip or emerge (Fig. 2a). The needle is threaded with fine wire doubled on itself and long enough to emerge 14 inches beyond the catheter outlet. Or less rigid, finer wire twisted after being threaded, may be found useful. The needles may be subsequently withdrawn by means of this holding wire.

Just before insertion into the cystoscope, the needle, with wire threaded, is placed into the metallic cup. The wire emerges through the slot or aperture and passes alongside of the spiral shank, and through the rubber nipple at the catheter outlet.

A slight pull on this wire suffices to retain the needle in its socket; or the retaining wire may be fastened to the spiral by an appropriate screw clamp.

When this variety of applicator is employed, our aim is to withdraw it, leaving the needle with the wire *in situ*, the cystoscope being then removed.

The *second type* of applicator is intended for those who may find some difficulty in mastering the technic of withdrawing the spiral applicator. It consists of a flexible spiral with a male thread to fit into the female receptacle of the needle, *the eye of which must be removed* before attachment is made. Although this type may appear easiest to employ particularly as far as withdrawal of the cystoscope is concerned, it carries with it this disadvantage, that a

heavier stem must be retained in the urethra. This may be objectionable in the male, in that movement of the pendulous urethra tend to displace the needle out of the growth.

The *third applicator* is patterned after the first, differing only in the size of its socket or cup, this being designed to carry one 50 mg. needle of radium (Fig. 4).

For those who prefer the simultaneous introduction of two 20 mg. needles, a special applicator with a broader receptacle carrying two needles in team fashion (Figs. 5-6) may be found to be useful.

For the introduction of *radium emanations* a long flexible spiral wire applicator is recommended. Its distal end is a hollow needle into which the capillary glass emanation tube is buried; and throughout its length travels a wire mandrin that enables the operator to plunge the radium into the growth (Fig. 7).

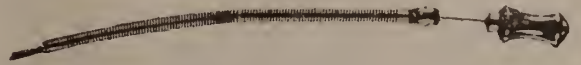


FIG. 7.—Applicator for introducing radium emanations through the cystoscope.

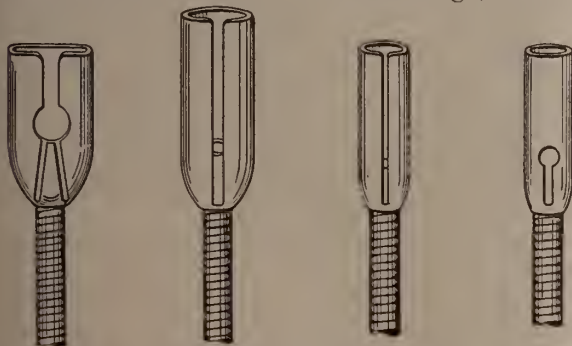
The Cystoscope.—Ordinarily the author's operating cystoscope would be found adequate, both for the insertion of radium emanations through a special applicator (Fig. 7), or for the introduction of one only of the special steel and platinum needles above described.

Under certain conditions, however, we have found the *direct* type of cystoscope, or one with an oblique vision, preferable. For this purpose, certain modifications were made in the convex sheath usually employed for direct telescopic cystoscopy. Through this sheath whose fenestra is larger than that usually adapted for catheterization of the ureter, either a direct operating telescope, or an oblique vision telescope may be inserted.

The oblique vision telescope is provided with a special lid or deflector that is placed directly over the objective and is fenestrated in order to permit of vision through it.

The most advantageous type of cystoscope for this work is a special radium cystoscope* recently devised by me, an instrument whose mechanism meets the requirements of tumors that are almost inaccessible to the usual varieties of cystoscopes.

Experience has taught the cystoscopist that there are regions in the bladder, which may be called relatively inaccessible as far as intravesical operative manipulations are concerned, although a fairly adequate degree of visual investigation in them is possible. These are the juxta-sphincteric regions behind the sphincter at every point, except at the floor of the blad-



WAPPLER ELECTRIC COMPANY, INC.

FIG. 3.—Cup-shaped end of applicators for reception of two 20 mg. needles.

FIG. 4.—Cup-shaped receptacle for one 50 mg. needle.

FIGS. 5 AND 6.—Receptacles for 20 mg. needles; Fig. 5 with slit; Fig. 6 with aperture.

* Executed by the Wappler Electric Mfg. Co., New York.

der. To reach these successfully when invaded with tumor, a special radium cystoscope (Fig. 8) has been constructed. It is provided with an unusually large fenestra and a correspondingly long deflector. The purpose of the latter is to attain that maximum direction of necessary appliances that the mechanical conditions at the bladder neck impose. By the long and unusually strong deflector, the resistance of the sphincteric muscle can be overcome, the sphincter displaced and pushed aside, and growths in intimate relation with its distal limbo, brought within reach.

If but one needle is to remain in the tumor, the telescope is removed first and the sheath follows.

We have frequently resorted to a checking up procedure to verify the situation of the needle after the removal of the cystoscope. A small instrument of 16 or 17 French calibre, threaded over the retained wire is introduced for this purpose. If a second needle is to be inserted, the manipulations are repeated, the wire retainer of the first needle being allowed to emerge through a second hole in the large rubber nipple.

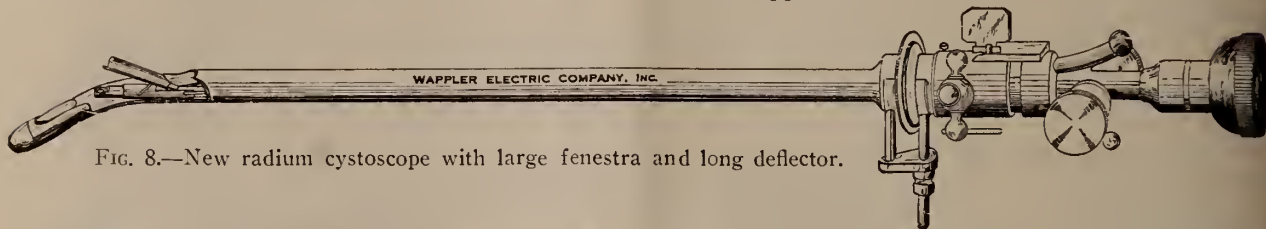


FIG. 8.—New radium cystoscope with large fenestra and long deflector.

Technique of the Application of 20 Mg. Needles.—After localizing the growth, and after the diagnosis of carcinoma has been established, one or two needles are prepared, each being threaded with fine wire, doubled, twisted on itself, and of a length sufficient to emerge some 2 inches from the spiral applicator. Each needle is placed into its socket. The wire emerges through the slit or aperture and is affixed to the shank at the nipple end. Such an applicator with a single radium needle is passed into the telescope, escape of fluid at the catheter outlet being prevented by the large rubber nipple, and through the spiral by a small catheter nipple.

The procedure of plunging the needle into the growth must vary, depending upon the type of growth at hand, its size and configuration. Thus, we may desire a tangential application, or one perpendicular to the surface. Having introduced the radium needle almost to the eye end, the next step is to release the needle and remove the wire applicator. In doing this we must be careful to prevent dislodgement of the needle as the deflector is released. Whenever deflection is employed for purposes of introduction, its amount must be carefully noted so that a reciprocal motion of the cystoscope may be employed when the lid is put down. For, to release the lid without a complimentary motion of the shaft of the cystoscope may result in a recoil of the wire applicator with consequent pulling out or tearing of the needle through the tumor mass.

Having, therefore, moved the beak of the cystoscope towards the tumor as we lay the lid down, we are then in the position to remove the spiral. In doing this we must simultaneously introduce the wire retainer as the spiral applicator is made to recede.

Care must be exercised to prevent dislodgement of the needle already implanted. By leaving enough slack wire in the bladder, an inadvertent tug will not be transmitted to the needle itself.

CONCERNING THE APPLICATION OF THESE METHODS IN PRACTICE

The worker in the field will be required to answer the surgeon's critical query, firstly as to whether there is a field for the application of radium through the cystoscope at all, and secondly, if radium is to be applied, should it not be introduced through the open bladder?

Time will not permit me to-day to discuss at length the correct indications for radium in the bladder. But as a urologic surgeon, and one who has treated carcinoma of the bladder almost exclusively in a surgical manner for more than 15 years; one who has been able to witness the results of partial resection with or without ureteral reimplantation, complete cystectomy and cauterization; I can unqualifiedly express the opinion that not only has the cystoscopic application of radium a sphere of usefulness, but that radio-surgery—the combined administration of radium and surgery—is the best therapy at our disposal to-day for such malignant growths.

As for the cystoscopic radium therapy, its field is three-fold:—

1. For the treatment of carcinoma alone without surgery.
2. For the treatment as a preliminary step to surgery.
3. For the treatment of metastases.

Cystoscopic Radium Therapy.—There will be three distinct circumstances that may lead us to adopt the cystoscopic methods of radium work. Firstly, the patient by reason of his

age, habitus, special prejudices, knowledge of physical mediocrity or what not, will refuse any operative interference.

Secondly, we ourselves will deem surgical intervention contraindicated for one reason or another.

Thirdly, we will give cystoscopic radium application preference. We need not discuss in detail the first two of these conditions. Let us dwell for a moment on the third.

Our reasons for this choice may be varied. Firstly we may take this view because the growth is small and appears amenable to radiation, but on the other hand is so situated that an extensive operation comprising one ureter and requiring ureteral reimplantation would be the only correct surgical procedure. Secondly, because, in a given case we feel that we are dealing with that type of small carcinoma which we have heretofore successfully treated with the snare and fulguration alone, but which type is occasionally followed by local recurrences or invasion of the bladder wall. Thirdly, because the growth is in the main a papilloma with evidences of carcinomatous change, is small, is readily accessible, but because of its potentialities for deep infiltration, needs more intensive treatment than fulguration and the snare, even though we have time and time again obtained cures in this type without radium and without surgery. And this feeling that radium is required, we have acquired through the knowledge of our inability to foretell in advance as to which of the small changed carcinomatous papillomata are already attended with malignant cell invasion of the wall of the bladder, and in which such infiltration is absent.

An excellent illustration of the remarkable result that can be obtained by cystoscopic application of radium in carcinoma of the bladder will be given here. The case was, in a sense, experimental as to the method of application of the radium, two types of radium treatment being employed. The patient had refused operative intervention, which was not at all unsatisfactory to me, for, we were dealing with a carcinoma just behind the right ureteral orifice, of the infiltrating variety, that would have necessitated an extensive operation of resection and ureteral reimplantation. The case, from the standpoint of therapy, presents two phases:

Firstly, that of the treatment with metallic radium needles, and secondly that of treatment by means of radium emanations.

By means of the first of these methods, it was demonstrated that a shrinkage and disappearance of part of the carcinoma was brought about, and with the second method, the total mass disappeared. With the first method, the peripheral portion of a part of the

mass was made to retract and disappear, whilst with the second or emanation method, the larger part of the tumor was made to necrose, so that at the end of the treatment, no vestige of carcinoma was left.

W. B., age 52, was referred to me on the 26th of Oct. 1921. He had noticed considerable blood in the urine for about 6 months, which diminished and practically disappeared 6 weeks before consulting me, only to return again. After the first appearance of blood 6 months ago, the bleeding persisted for 6 weeks. Subsequently he had a free interval, but the hematuria recurred, so that recently the blood in the urine gave him considerable concern. With the increasing amounts of blood other urinary symptoms had been superadded, namely, urinary frequency every 2 hours and nocturia, with pain on voiding. He had lost 3 pounds in the last 3 weeks. Cystoscopy on the 26th of October, 1921, showed a lobulated infiltrating carcinoma occupying the region immediately behind and somewhat overlapping the right ureter, over an area about $\frac{3}{4}$ inch in diameter. Posteriorly, the tumor extended by a tongue shaped process for some distance back. The right ureter was closed by infiltration of the ureteral wall, so that a catheter could not be inserted beyond a point 1 cm. removed from the orifice.

First Phase of the Treatment, Oct. 27th, 1921. A 20 mg. radium needle was introduced into the posterior part of the tumor penetrating the growth and allowed to remain in 2 hours.

Oct. 31st, a 50 mg. tube was inserted into the tumor mass and left in 2 hours; Nov. 7th, 50 mg. for one hour; Nov. 18th, 60 mg. hours; Nov. 19th, 100 mg. for one hour.

Nov. 23rd, it was observed through the cystoscope that the posterior half of the tumor had almost disappeared, being replaced by a retracted, scar-like area.—(Result of the first phase of treatment.)

Second Phase of Treatment with Emanations. In view of the fact that the distal portion of the tumor showed but moderate improvement and some necrosis, it was decided to implant emanations.

Dec. 12th, four emanation seeds were implanted into the tumor through the radium cystoscope.

Dec. 30th, marked improvement was seen through the cystoscope, there being considerable sloughing of the central portion of the tumor. The posterior part had healed, and was represented by a retracted scar. From this time on improvement was remarkable, so that on the 8th of April, 1922, cystoscopic examination showed no vestige of tumor.

Between the 11th and 21st of Feb. 1922, and the 8th of April, several radium treatments were given per rectum by Dr. Levin. (Feb.

21st, 42.8 mc. for 3 hours; March 7th, 84 mch.; April 8th, 78.4 mch.)

CONCLUSION: 1. Certain improvements in cystoscopic armamentarium have been developed that enhance the accuracy of and increase the potency of intravesical radium therapy.

2. Our results with these new procedures have been so gratifying and encouraging that we hope, in the near future, to be able to report a series of cases, that will bear testimony to the value of the proposed methods; and further, to show that in a certain field of carcinoma of the bladder, as good end results are obtainable with the use of the cystoscopy as with a combination of radium and surgery.

A CLASSIFICATION OF NEUROSYPHILIS WITH SOME REMARKS CONCERNING THERAPY.*

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MODERN research has emphasized the ubiquity of syphilis. In the neurologic field several syndromes, the cause of which was formerly wrapped in obscurity, have within the last decade been added to that ever increasing group of morbid states to which we apply the broad term of neuro-syphilis.

Syphilis has a charm because of its versatility. Its attack is ever varied and its results are bewildering in their multiplicity. The spirochaete may strike a blow at one point and spend its offensive force there, or it may launch simultaneous attacks at several points. In its relation to the nervous system this protozoan is perhaps our best example of a biologic masquerader. It so successfully camouflages its effects under a mantle of confusing symptoms that it baffles the master and tyro alike. Syphilis may mimic any neurologic disease or syndrome. It knows no formula and follows no pattern. In the functional sphere it may be the precipitating factor of a psychosis, the background for which was pre-existent, or it may apparently be the architect of a psychotic structure all its own.

Organically neurosyphilis may produce syndromes indistinguishable from those which characterize familiar neurologic diseases. Again it mingles indiscriminately in a symbiotic fashion with other disease entities such as multiple sclerosis, amyotrophic lateral sclerosis and paralysis agitans.

The spirochaete does not always indulge in mimicry. It produces isolated effects and syndromes peculiar to itself, the relation of which to syphilis, was appreciated long before the

etiology of the latter was known and still longer before spirochaeta were demonstrated in nerve tissue. *Tabes dorsalis* is an example of an original syndrome. Visceral crises, certain pupillary anomalies and ocular palsies might be mentioned as isolated effects almost pathognomonic of spirochaetal infection.

Since the discovery of spirochaeta in paretic brains and tabetic cords the terms *parasyphilis* and *metasyphilis* have been replaced by the more exact term of *neurosyphilis*. Modern laboratory methods have furnished a means of making the diagnosis of neurosyphilis more certain by substituting positive findings to substantiate diagnoses hitherto arrived at by the process of exclusion.

REGIONAL CLASSIFICATION.

1. Peripheral:
 - a. Somatic,
 - Cranial and peripheral nerves, their ganglia and end organs.
 - b. Sympathetic,
 - Sympathetic nerves, their chain ganglia and terminal arborizations.
2. Central:
 - a. Cerebral.
 - b. Spinal.
 - c. Cerebro-spinal.

The term neurosyphilis is merely descriptive of the anatomic location of the disease in the broadest sense. We are accustomed to divide the nervous system into two main parts: the peripheral, comprising the somatic cranial and spinal nerves, their ganglia and peripheral end organs, and the sympathetic nerves with their chain ganglia and terminal arborizations; and the central comprising the cerebro-spinal axis. The functions subserved by the cerebral and spinal portions of the central nervous system differ so widely as to enable one to determine easily where the essential pathology, as reflected by the symptoms, is located. The cerebrum, or to be more accurate, the encephalon, broadly speaking contains the centers of origin and co-ordination with the association mechanism for all purposive afferent impulses, the centers of termination and co-ordination with the association mechanism for all affective and discriminative afferent impulses, and that indefinable something that we call the intelligence. The spinal cord functions as the great pathway for the transmission of impulses and for the maintenance of reflex activity. When both portions are involved the term cerebro-spinal syphilis is applicable but it ought to be emphasized that this term should be restricted to its anatomic significance. As indicative of anatomically diffuse syphilitic disease of the nervous system it is applicable. As a term to contrast the syndromes of general paresis,

* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 19, 1922.

tabes dorsalis and tabo-paresis from all other syphilitic disease of the nervous system it is undeserving of the general acceptance that custom has granted it. In general paresis the syphilitic pathology usually extends to the spinal cord. In tabes dorsalis the syphilitic pathology frequently extends to the brain not only as a direct continuation of tract degeneration but as a separate pathology of which optic atrophy is an example. In tabo-paresis the pathology is always both cerebral and spinal.

EMBRYOLOGIC COMPONENTS OF THE NERVOUS SYSTEM

Mesoderm

(Non-specialized—general)

1. Meninges—protective,
2. Blood vessels—nutritive and eliminative.

Ectoderm

(Highly specialized, specific)

1. Neurones—functional:
 - a. Nerve cells,
 - b. Nerve fibres.
2. Neuroglia—supportive:
 - a. Glia cells,
 - b. Glia fibres.

Any effort to arrive at a rational classification of neurosyphilis must be based upon the histogenetic development of the several components of the central nervous system. One must recall that the embryonal ectoderm gives rise to the highly specialized neural units, viz., neurones and neuroglia. The former, comprising neurocytes and neuraxones with their medullary sheaths are the functional elements which initiate and transmit nerve impulse and the latter, comprising glia cells and fibres, are the supportive elements which form the neural reticulum. The embryonal mesoderm contributes to the nervous system its non-specialized structures, viz: the meninges, and blood vessels. The meninges afford protection while the blood vessels furnish nutrition and the means of elimination.

In accordance with the germ layer derivation, then, neurosyphilis may be mesodermal in which case the structural elements involved are the meninges and blood vessels or ectodermal, in which case the structural elements involved are the neurones and neuroglia. The anatomical divisions between these structural units are too slight and their interdependence too great to permit of many lesions strictly limited to but one structure.

The pathological anatomy, therefore, is not confined within so sharply demarcated boundaries as the clinical symptoms indicate. By correlating the clinical manifestations and laboratory findings one can conclude, with reasonable certainty, the location of the essential pathology.

In some cases at least there seems to be a chronological sequence to luetic invasion, the progress of which depends upon the factors of resistance. The meninges are most frequently involved early and may be looked upon as the first line of defense for the central nervous system. If the meninges are not resistant enough to overcome the infection the blood vessels next bear the brunt of the fight and, if they succumb, the essential neural or ectodermal elements are next attacked. These last structures have a police force of their own in the glial cells, but their strength is limited. They are the old men, as it were, and are called upon as a last resort. It is their function to make the final stand in an endeavor to protect the nerve cells from destruction. The neurocytes are too highly specialized to be capable of strong resistance and quickly succumb to prolonged insult.

This prettily conceived sequence of events does not, however, always occur. The blood vessels may be and frequently are primarily involved. Clinical evidence points strongly to the existence of primary ectodermal syphilis as, for example in congenital paresis.

Although it is not infrequent in acquired syphilis for the earliest neurologic symptoms to be reflective of degenerative lesions in the neural parenchyma it may be doubted whether these lesions occur without antecedent vascular changes. The vascular changes may be only slight, perhaps merely sufficient to alter the permeability of the capillary walls and thus release an irritant the action of which produces degeneration of the nerve cells which have been rendered susceptible, perhaps, by previous sensitization.

Because of the frequency with which syphilis attacks more than one structural unit of the nervous system nomenclature lends itself to the use of the terms somewhat more descriptive and specific than mesodermal and ectodermal. As we have seen mesodermal neurosyphilis may involve either meningeal or vascular elements, and ectodermal the neuronal and neuroglial elements. The term parenchymatous suggests itself to distinguish ectodermal neurosyphilis from the meningeal and vascular types of mesodermal neurosyphilis. Objections have been made to this term on the ground that nerve tissue has no true parenchyma. The tenability of such objections is open to doubt. Parenchyma is defined as the essential or functional element of an organ in distinction to its stroma or framework. Are not nerve cells as essential functional elements as gland cells? The former originate the impulses that bring into activity the specific secretory functions of the latter. Without the primary function of the nerve cells there would be no function on the part of the secretory cells of glandular tissue.

The term parenchymatous should not lead to misinterpretation if it is applied to cases in which

the clinical and serological findings indicate that the essential pathology is in the neuronal structures. The involvement of neuroglia tissue is a secondary process which represents nature's protective and reparative endeavor. The neuroglia cells are the scavengers that seek to remove the products of degeneration by their neurophagic action or to wall off degenerated areas by the production of neuroglia fibres. In the former case neuroglia cells are the analogues of the phagocytes of the blood and in the latter case of the fibroblastic elements of the connective tissue. Except in tumor growth, the ectodermal supportive tissue (neuroglia) and the mesodermal supportive tissue (connective) proliferate only in response to tissue injury. This proliferative response is reconstructive, protective or regenerative as opposed to destruction, injury or degeneration. Assuming then that neuroglia involvement in neurosyphilis is always a secondary reactionary process it should not be confused with the primary process that occurs in the neurones. The primary process is a neuronal degeneration, the secondary process is neuroglia proliferation. The end result may be neuronal resolution followed by restoration of function or degeneration followed by replacement gliosis or glial scar.

HISTOGENETIC CLASSIFICATION

1. Mesodermal:
 - a. Meningeal,
 - b. Vascular,
 - of the large vessels,
 - of the small vessels,
 - c. Meningo-vascular.
2. Ectodermal:
 - Parenchymatous.
3. Mixed forms,
 - Meningo-parenchymatous,
 - Vasculo-parenchymatous,
 - Meningo-vasculo-parenchymatous.

Southard and Solomon, in their admirable work on Neurosyphilis, outlined a histological classification somewhat similar to the one above. The term meningo-vascular syphilis is used synonymously for mesodermal neurosyphilis. A correlation of symptomatology and laboratory findings justifies the distinction of a pure meningeal and a pure vascular type. By meningeal is meant that type of syphilis which is reflected clinically by the group of symptoms that we recognize as accompanying lesions that are essentially meningeal in location. The blood vessels necessarily participate in this as in all inflammatory reactions.

There are also definite clinical symptoms which accompany neurosyphilitic lesions the essential pathology of which is vascular. Haemorrhage, thrombosis or transient ischaemia due to angiospasm of syphilitic blood vessels are examples of

this type. This may be only a part of a generalized vascular syphilis but when there is sufficient pathology in the vascular apparatus of the nervous system to produce neurologic, psychiatric or combination symptoms the diagnosis should be neurovascular syphilis.

By meningo-vascular is meant the type which begins in the meninges but spreads from there to the deeper structures and, as expressed by Tilney, "compromises secondarily the actual neural constituents." It is superficial in the beginning and exudative in type but if allowed to progress it later invades neural centers or pathways.

Ectodermal neurosyphilis expresses itself primarily with symptoms indicative of neurocytic degeneration. General paresis, tabo-paresis and tabes dorsalis are familiar syndromes indicative of this type.

The mixed forms are represented pathologically by diffuse extension into the parenchymatous structures from lesions which were primarily meningeal or vascular in location.

PATHOLOGY

The pathologic lesions of neurosyphilis represent the reactions on the part of the neural tissues to injury produced directly or indirectly by *spirochaeta pallida*. This reaction to injury constitutes inflammation in its broadest sense and depending upon the virulence of the invading organism and the resistance of the host the inflammatory reaction may be exudative, productive or degenerative in type. Depending upon the rate of progress it may be acute, subacute or chronic. The exudative type is best exemplified by acute syphilitic meningitis, the productive type by chronic hypertrophic meningitis, endarteritis, and gliosis. Or again depending upon location and certain other factors the lesion may assume those special morphologic features which we recognize as syphilitic granuloma or gumma. Finally the degenerative type involves the parenchymatous structures of the neural ectoderm and results in atrophy or complete degeneration of the nerve cells.

CLINICAL

As already pointed out the anatomic location of neurosyphilitic lesions determines the clinical picture. The clinical possibilities, therefore, are only limited by anatomic boundaries and the physiologic functions subserved within these boundaries. Head and Fearnside have very aptly stated that the difference between the various manifestations of neurosyphilis is not of morbid process but of anatomic situation and chemical permeability and suggest that previous sensitization of the tissues may determine the choice of the pathologic site.

Any attempt at a clinical classification must

be comprehensive enough to include every possible neurologic syndrome and symptom complex.

CLINICAL CLASSIFICATION

1. Syndromes:
General paresis,
Tabes dorsalis,
Tabo-paresis.
2. Psychoneuroses predicted upon syphilis.
3. Cerebral types:
Meningitis,
Encephalitis,
Meningo-encephalitis,
Polio-encephalitis (cranial nerve palsies),
Plegiae and pareses,
Epilepsy,
Psychoses,
4. Spinal types:
Radiculitis,
Meningitis,
Myelitis,
Meningo-myelitis,
Polio-myelitis,
Plegiae and pareses.
5. Diffuse types (cerebro-spinal).

DIAGNOSIS

By the utilization of modern laboratory methods and by the correlation of laboratory results with clinical observations one may arrive at a rational pathological interpretation. Accuracy of prognosis depends upon a comprehension of the pathology.

The diagnostic methods available are blood serology and examination of the spinal fluid obtained by lumbar puncture. This should include observations of color, pressure determination, cell count, globulin estimation, Wassermann, Vernes and Colloidal gold reactions.

Each of these diagnostic tests has significance. Considered individually their significance is limited. Considered collectively and correlated with the clinical findings one gets a composite picture the mathematical value of which might be said to equal the product of the clinical and laboratory findings. To disregard the information that may be obtained by complete examination of the spinal fluid is to show almost criminal indifference to the patient not to mention the effect on the unborn generations.

INTERPRETATION

Until our knowledge of the physiological mechanism concerned with alterations in spinal fluid pressure is more extensive one can attach only a limited significance to this factor except in cases in which extreme variations occur.

With the information that we possess at present one can only say that greatly increased pressure probably signifies hypersecretive activity of the chorioid plexi or deficient resorptive activity

of the venous capillaries of the arachnoidal villi. Low pressure, by the same reasoning, indicates hyposecretion of the chorioid plexi, increased resorptive activity of the venous capillaries of the arachnoid or interference with the interchange of fluid between the cerebral ventricles and the spinal sub-arachnoid space. Whether the chorioid plexi alone are concerned with the secretion of this fluid or whether other structures of the nervous system participate in its formation must remain for the present undecided. The weight of opinion, however, favors the theory of its secretion by the endothelial cells of the chorioid plexi. The possibility of the direct or indirect effect of certain abnormal constituents of the blood should not be disregarded in speculative consideration of pressure variations. This we do know that demonstrative structural alteration of the nervous system is not necessary for wide variations in spinal fluid pressure.

In order to obtain an accurate estimation of the pressure a mercurial manometer should be employed. With such an instrument the normal pressure, with the patient in the lateral recumbent position with the head flexed upon the chest and the knees on the abdomen, is 4-7 mm. of mercury. This may be increased under certain circumstances to 30 mm. An approximate idea of pressure may be obtained by an estimation of the rate of flow as determined by the number of drops per minute. In order to properly evaluate comparative results by the latter method uniformity in the calibre of the needle and position of the patient is necessary.

In physical appearance the spinal fluid may be colorless, cloudy, blood tinged or of a yellowish color from pigment held in solution (xanthochromia). The significance of these physical appearances is well known and does not require restatement.

The cell count is a clear and definite indication of the acuity of the meningeal involvement. Lymphocytes and plasma are the types that predominate but this feature *does not* differentiate neurosyphilis from poliomyelitis, epidemic encephalitis or tuberculosis. By the employment of a counting chamber with the Fuchs-Rosenthal ruling the normal number of cells is 0-5, borderline 6-9 and pleocytosis 10 or above. By other methods, which employ the ordinary blood counting chambers 0-10 cells may be considered as normal. Cells are most numerous in lesions predominantly meningeal and less numerous in lesions predominantly parenchymatous. In pure vascular lesions counts are generally normal or borderline. Any count above the normal probably indicates some meningeal involvement. As the pathological process passes from the acute inflammatory stage to that of chronicity the change is reflected in the quantitative cellular content.

An increase in globulin signifies only an or-

ganic lesion of the central nervous system. The excess is greatest in very acute meningeal lesions or in cases of cord impression and most persistent in parenchymatous lesions. Lesions of a purely vascular nature are generally accompanied by only slight or no globulin excess.

Albumin and sugar estimations are of doubtful value in the diagnosis of neurosyphilis and have no value at present in type differentiations.

The Wassermann and Vernes reactions, if positive, establish the diagnosis of neurosyphilis and may establish the etiology of a neurologic lesion after the possibility of the coincidence of another disease is excluded. For instance, a tumor of brain or cord may be co-existent with luetic lesions. A cerebral neoplasm may produce optic atrophy in a case of spinal neurosyphilis of the tabetic type. One negative Wassermann or Vernes reaction does not exclude the diagnosis of neurosyphilis. Proper appreciation of spinal fluid serology requires that the fluid be titrated in amounts from 2/10 to 2.0 c.c. for the Wassermann test and as high as 1.6 c.c. for the Vernes test. Deep seated parenchymatous neurosyphilis especially of cerebral distribution is usually accompanied by positive serologic reactions in amounts as small as 2/10 c.c. Such deeply seated lesions are the most resistant to treatment and present less favorable prognosis than those more superficially located. No serologic reaction should be considered negative unless this result is obtained with 2.0 c.c. of spinal fluid in the Wassermann and 1.6 c.c. in the Vernes test.

For type differentiation the colloidal gold reaction of Lange is a very valuable aid. It depends upon the principle of physical chemistry that colloids are precipitated from solutions by: (1) electrolytes and (2) oppositely charged colloids. In this case the precipitation is accompanied by certain color changes assumed by a solution of colloidal gold in proportion as the precipitation of the gold salt is partial or complete. There are three important types of curve which, for convenience, have been called "paretic," "luetic," and "meningitic." Such designations are misnomers and have created false impressions. The so-called paretic curve may occur in multiple sclerosis, lateral sclerosis, brain tumor, eclampsia and acute septic meningitis in the absence of syphilis. The so-called luetic curve may occur in epidemic encephalitis, anterior poliomyelitis, nephritis and other non-syphilitic conditions. Therefore, for the sake of clarity these curves should be spoken of as Type I, Type II or Type III curves.

SIGNIFICANCE OF PATHOLOGICAL FINDINGS IN THE SPINAL FLUID

Color—indicates sepsis, haemorrhage, compression.

Pressure—indicates hyper or hyposecretion or obstruction.

Cell Count—indicates acuity of meningeal lesions.

Globulin—indicates organic lesion probably meningeal or parenchymatous.

Wassermann } establish syphilitic etiology if
Vernes } positive.

Colloidal Gold assists in differentiation of vascular, meningo-vascular and parenchymatous.

THERAPY

Difference of opinion must necessarily exist concerning the therapy of neurosyphilis as in all other diseases. There may be said to be two schools today. The one admits of no merit in intraspinal therapy, the other advocates this procedure in certain selected types of cases in conjunction with general antisyphilitic therapy. To the best of my knowledge there is no group that hails intraspinal therapy as a universal cure-all for neurosyphilis. The writer belongs to the group that advocates the utilization of every method of treatment that will prove its efficiency by its results. Combined clinical and laboratory study of a large group over a period of ten years has convinced the author that intraspinal therapy has distinct value in certain cases in which other methods have failed. Some of the cases that are appended illustrate this.

In certain cases of neurosyphilis the neurologic symptoms remain unaffected under general antisyphilitic therapy—salvarsan, mercury, iodides. Not only do the clinical symptoms persist without change but the laboratory findings also show no evidence of serologic improvement. Some of these cases show prompt improvement symptomatically and serologically under intraspinal medication. It is my notion that one such result is sufficient justification for this mode of treatment. We speak of specific therapy in medicine but the term is only relative in its application. Antidiphtheritic serum does not cure every case of diphtheria nor does antitetanic serum always prevent or cure tetanus. The same may be said of our other specific sera and drugs. To neglect to employ them unless definitely contraindicated is, however, to assume a responsibility that may weigh heavily upon one's conscience in the event of a fatality. Neurosyphilis is not usually a rapidly fatal disease, therefore, the results of neglect are not always apparent immediately but they are manifest in every neurologic clinic. It incapacitates and shortens life probably more than any other disease and until recently has been the most overlooked. Individuals infected with syphilis have the right to seek prophylactic treatment against neurologic sequelæ. It is here that modern therapy has its greatest usefulness. Every syphilitic should have a complete study of his spinal fluid and should never be discharged as cured without negative fluid serology. In every

case in which this result is not attained with general therapy the other measure available should be utilized unless a contraindication exists.

CASE I.

E. W., female, æt. 54. (History No. 29230.)

Admission: July 26, 1920.

Symptoms: Weakness and partial loss of control of both legs, uncertainty in gait, headaches, polyuria. Syphilis denied by name and symptoms.

Physical: Right pupil larger than left and sluggish in reaction to light, left pupillary reaction to light absent, convergence and accommodation normal in both eyes; superficial reflexes normal, right patellar and Achilles absent, ataxia doubtful.

Ophthalmologic: Bilateral cataract.

Blood: Wassermann—negative on three occasions. Sugar, —.2%.

Spinal Fluid:

Color	normal
Pressure	normal
Globulin	normal
Cells	1 per cm.
Wassermann	negative in 2.0 cc.
Colloidal gold	1112110000

Provisional Diagnosis: Incipient diabetes.

Comment: This illustrates a case in which the negative serology together with the negative history outweighed the clinical symptoms suggestive of syphilitic disease.

CASE II.

M. L., female, æt. 47. (History No. 25940.)

Admission: August 23, 1919.

Symptoms: Right hemiparesis. Complete personality change. Slovenly personal habits. Syphilis denied by name and symptoms.

Physical: Negative neurologically except for tremor of facial muscles. Speech slow and suggestive of parietic type. Memory and association defects. Emotional instability. Blood pressure 210/160.

Blood: Wassermann negative on eight occasions between August 23, 1919, and December 22, 1919, before and after provocative treatment.

Spinal Fluid:

Color	normal
Globulin	trace
Cells	17 per cm.
Wassermann	negative in 2.0 cc.
Colloidal gold	0000000000

Empiric antisyphilitic therapy consisting of 8 salvarsans and 10 mercurial injections was given with no improvement.

Diagnosis: Cerebral arterio-sclerosis.

Comment: Cerebral arterio-sclerosis frequently produces symptoms so closely resembling syphilitic dementia as to render differentiation difficult. In this case the high blood pressure and the negative blood and fluid serology determined the diagnosis after several weeks of observation.

CASE III.

J. E. M., male, æt. 46. (History No. 31144.)

Admission: March 7, 1921.

History and Symptoms: August, 1917, pains in right shoulder and left elbow following some dental work. Duration 3 months. February, 1920, sensation of "pins and needles" in hands and feet following an attack of influenzal pneumonia. Increasing weakness in arms and legs since January, 1921. History of periodic alcoholism since youth.

Physical: Ataxia especially marked in lower extremities. Superficial reflexes normal. Sluggish biceps and triceps reflexes. Patella and Achilles reflexes absent with reinforcement. Muscular weakness of forearms, hands, legs and feet. Thermal hypaesthesia in hands and feet. Impaired vibratory sense in feet and hands. Touch discrimination absent in fingers. Pupillary status normal.

Blood: Wassermann negative March 15, 1921.

Spinal Fluid:

Color	normal
Pressure	normal
Cells	2 per cm.
Globulin	normal
Wassermann	negative in 2.0 cc.
Colloidal gold	1111110000

Empiric antisyphilitic therapy consisting of 4 salvarsans with increase of all symptoms.

Diagnosis: Polyneuritis.

CASE IV.

A. D., female, æt. 26. (History No. 27758.)

Admission: March 27, 1920.

History and Symptoms: Husband an inmate of an institution suffering with "paralysis." Husband's serology positive. One miscarriage at 5 mos. followed by rash. Pains in shoulders and arms. Patient anxious, fears paralysis or insanity.

Physical: Negative.

Blood: March 30, 1920, 4 plus; October 15, 1920, 1 plus; mercurial and arsenical therapy March 30, 1920, to May 10, 1920.

Spinal Fluid: May 10, 1920 October 15, 1920

Pressure	4 plus	normal
Cells	10	10
Globulin	normal	normal
Wassermann	4 plus 1.5 c.c.	negative 2.0 c.c.
Colloidal gold	1233322111	0100000000

Therapy: 15 salvarsans, 15 mercurial injections, 6 intraspinals. Symptomatic cure.

Diagnosis: Anatomically a symptomatic neurosyphilis. Anxiety neurosis with luetic basis.

Comment: In this case the symptoms were entirely subjective and indicative of the anxiety type of psychoneurosis. That the functional symptoms were dependent upon a syphilitic etiology seemed a justifiable conclusion in view of the positive findings in the spinal fluid. The symptomatic cure following antisyphilitic therapy gave support to this view.

CASE V.

W. W., male, æt. 37. (History No. 24744.)

Admission: April 23, 1919.

History: Luetic infection 15 years previously.

Physical: Inequality of pupils. Reaction to light absent in left and but slightly preserved in right. Accommodation normal in both eyes. Left ptosis and limitation of upward movement.

Blood: Wassermann, April 23, 1919, 4 plus; September 15, 1920, negative. Between April 23, 1919, and June 17, 1919, 4 salvarsans and 4 mercurial injections.

Spinal Fluid:

	June 17, 1919	June 17, 1920
Pressure		1 plus
Cells	28	2
Globulin	4 plus	1 plus
Wassermann	4 plus 0.4 c.c.	negative 2.0 c.c.
Colloidal gold	2223210000	1222210000

Therapy: 21 salvarsans, 32 mercurial injections, 9 intraspinals.

Diagnosis: Cerebral meningeal syphilis. Syphilitic basilar meningitis.

Comment: This illustrates the period that may elapse between the initial lesion and the appearance of neurologic symptoms. It exemplifies the cranial nerve involvement associated with lesions of the basilar meninges. The ptosis has improved. Otherwise the neurologic symptoms have remained stationary. Had treatment, at the time of infection, been pursued till the blood and fluid serology was negative there is reason to believe that this would not have become a neurologic case.

CASE VI.

E. R., male, æt. 26. (History No. 31069.)

Admission: February 28, 1921.

History and Symptoms: Primary and secondary in January, 1920. Treatment from January to December, 1920, consisting of 17 salvarsans intravenously. For two weeks excruciating headaches day and night. Insomnia.

Physical: Negative except for general hyperreflexia.

Blood: Negative January, 1921.

<i>Spinal Fluid:</i>	March 7, 1921	April 25, 1921
Color	normal	normal
Pressure	2 plus	2 plus
Cells	541	17
Globulin	3 plus	trace
Wassermann	4 plus 0.5 c.c.	negative 2.0 c.c.
Colloidal gold	3334455342	555443321

Therapy: 5 salvarsans intravenously, 5 intraspinals.

Diagnosis: Cerebral meningeal syphilis. Acute syphilitic meningitis.

Comment: The above exemplifies an acute exudative syphilitic inflammation of the meninges immediately following ten months of intensive intravenous treatment which made the blood serology negative. The rapid symptomatic improvement with the attendant serologic change under combined intravenous and intraspinal therapy emphasizes the advisability of early examination of the spinal fluid. If the findings are positive and remain stationary or become more strongly positive during intravenous or other general treatment the indication is clear for additional therapy by the spinal route.

CASE VII.

P. H., male, æt. 41. (History No. 28377.)

Admission: May 19, 1920.

History and Symptoms: Luetic infection in 1900. Treatment for two years. Unsteady gait. Slight ataxia of upper and lower extremities. Difficulty in concentration. Poor memory. Irritable, loses temper easily. Judgment less keen than normally. Attacks of unconsciousness of epileptiform nature.

Physical: Negative except for speech defect suggestive of paretic type.

Blood: Wassermann, June 7, 1920, 1 plus; August 30, 1920, negative.

<i>Spinal Fluid:</i>	June 8, 1920	October 14, 1920
Cells	8	2
Globulin	trace	normal
Wassermann	4 plus 0.4 c.c.	negative 2.0 c.c.
Colloidal gold	1101110000	1110000000

Therapy: 5 salvarsans intravenously, 7 mercurial injections, 3 intraspinals.

Diagnosis: Cerebral vascular syphilis.

Comment: The symptoms here were suggestive of general paresis. The favorable influence of the therapy upon the spinal fluid findings accompanied by symptomatic improvement indicates that the encephalitic symptoms were secondary to vascular pathology—syphilitic endarteritis of the smaller vessels. In the opinion of the writer this was a case of cerebral vascular syphilis with secondary involvement of the neural parenchyma. Pathologically it might be called vasculo-

parenchymatous cerebral syphilis. Clinically it should be described as syphilitic encephalitis secondary to cerebral arterio-syphilis.

CASE VIII.

E. H., male, æt. 46. (History No. 27698.)

Admission: March 22, 1920.

History and Symptoms: Lues denied by name and symptoms. Insomnia. Headaches. Inability to hold position. Impotent for three months. Dejected. Fears insanity. Complained of "trouble in head." Moderate suppression of automatic associated movements.

Physical: Pupillary inequality. Reactions to light and accommodation present.

Blood: Wassermann—March 22, 1920, 4 plus; September 8, 1920, 2 plus.

<i>Spinal Fluid:</i>	June 1, 1920	October 11, 1920
Pressure	1 plus	1 plus
Cells	53	13
Globulin	1 plus	trace
Wassermann	4 plus 1.0 c.c.	2 plus 2.0 c.c.
Colloidal gold	4442300000	1111100000

Therapy: 13 salvarsans intravenously, 9 mercurial injections, 3 intraspinals. Serologic improvement but no symptomatic change.

Diagnosis: Cerebral meningo-vasculo-parenchymatous syphilis.

Comment: This is a more advanced stage of the same pathology illustrated by Case VII, with more clinical and serologic evidence of meningeal involvement and neurocytic degeneration in the cerebral cortex. The encephalitic changes have progressed so far that the therapy is ineffective despite the serologic improvement.

CASE IX.

H. D., male, æt. 52. (History No. 16076.)

Admission: November 8, 1917.

History and Symptoms: Luetic infection 16 years previously. Incontinence. Impotence. General muscular weakness. Incapacitated for work.

Physical: Pupils and reflexes normal. Left transient ankle clonus. Deviation of tongue to right.

Blood: Wassermann—November 8, 1917, 4 plus; October 17, 1919, negative; March 5, 1920, negative.

Arsernical and mercurial therapy for 1 year.

<i>Spinal Fluid:</i>	Nov. 13, 1918	March 30, 1920
Cells	6	3
Globulin	4 plus	1 plus
Wassermann	4 plus 0.2 c.c.	negative 2.0 c.c.
Colloidal gold	5555431000	4423111000

Therapy: 28 salvarsans intravenously, 32 mercurial injections, 10 intraspinals. Good symptomatic and serologic result.

Diagnosis: Cerebral-vasculo-parenchymatous syphilis.

Comment: The pathology here is essentially vascular. The serologic improvement was accompanied by symptomatic improvement. The writer has witnessed, in this case, a complete recovery from a sudden hemiparesis that completely incapacitated the patient for several months. The patient is now successfully conducting his own business.

CASE X.

S. S., male, æt. 45. (History No. 29110.)

Admission: July 15, 1920.

History and Symptoms: Luetic infection in January, 1916. Intermittent treatment with salvarsan and mercury from 1916 to 1919. Weakness in left leg and both feet. Strip of pain around body. Frontal headaches. Insomnia. Poor memory. Anxiety. Hebetude.

Physical: Pupils equal but sluggish to light, react normally to accommodation. Positive Romberg. General hyperreflexia deep and superficial.

Blood: Wassermann—July 15, 1920, negative; September 17, 1920, negative.

<i>Spinal Fluid:</i>	July 23, 1920	August 20, 1920
Pressure	normal	normal
Cells	17	8
Globulin	1 plus	1 plus
Wassermann	4 plus 1.0 c.c.	4 plus 2.0 c.c.
Colloidal gold	4535331000	5423442200

Therapy: 5 salvarsans intravenously, 6 mercurial injections, 2 intraspinals.

Diagnosis: Cerebro-spinal meningo-parenchymatous syphilis.

CASE XI.

F. M., male, æt. 32. (History No. 23568.)

Admission: January 4, 1919.

History and Symptoms: Luetic infection in 1910. Thick stammering speech. Clumsiness in all movements. Poor retention of names, dates, places and events. Euphoric and expansive. Irritable.

Physical: Tremor of facial muscles. Inequality of pupils. All reflexes present and normal (pupillary, deep and superficial). Syllables and words omitted and misplaced in test phrases.

Blood: Wassermann—January 4, 1917, 4 plus; October 18, 1920, 4 plus.

<i>Spinal Fluid:</i>	Feb. 14, 1917	Oct. 18, 1920
Pressure		1 plus
Cells	12	15
Globulin	2 plus	1 plus
Wassermann	4 plus 0.2 c.c.	4 plus 0.2 c.c.
Colloidal gold	5554310000	5544333221

Therapy: 36 salvarsans intravenously, 50 mercurial injections, 9 intraspinals. No improvement in symptomatology nor serology.

Diagnosis: Cerebral parenchymatous syphilis. Parietic syndrome.

Comment: The symptoms here all indicate that the pathology is in the encephalic parenchyma. The syndrome is typical of general paresis. The spinal fluid serology which remained unchanged during a long period of treatment is corroborative.

PERSONALITY DEFECTS AS NEURO-PSYCHIATRIC PROBLEMS.*

By IRVING J. SANDS, M.D.,

BROOKLYN.

IN human relationships it has often been observed that there are a group of individuals who are invariably successful in their undertakings, pleasant to deal with, and stimulating to those with whom they come into contact. On the other hand, there is an equally large group who, with the same opportunities, are more or less failures, are unpleasant to deal with, and have a depressing effect upon others. Between these two extremes, there is an intermediary group composed of the various gradations between these two types. In an effort to explain these phenomena, we commonly attribute them to differences in personality.

The physician and surgeon often see examples of personality differences in the divergent reactions of different patients to similar pathological

processes. For instance, a surgeon operating on two different patients for the same disease, employing the same technique and observing the same precautions, not infrequently obtains different results in the two cases. In his effort to explain this, he finally concludes that it is due to differences of personality.

The neuropsychiatrist is particularly apt to meet with marked personality differences in his patients, especially in the treatment of conduct disorders. For this reason it is relevant to define the term personality. Personality may be described as the aggregate of the innate physical and mental characteristics of the individual, which have been somewhat modified by environmental influences, and which enable the individual to react in a certain fashion to the various demands for adjustment which he is called upon to make. Personality, therefore, is the resultant of the interaction of the somatic and mental constituents of the individual under the modifying influences of the environmental situation. A defect in any of these components will be reflected in the personality of the individual and will be shown in his methods of adaptation. An understanding of personality defects can therefore be best obtained through a searching inquiry into the physical and mental defects of the individual and by an appreciation of the environmental deficiencies which he has encountered, on the one hand, and by an evaluation of the methods employed by the individual in his effort to compensate for these defects, on the other.

The physical make-up of the individual plays an important part in the development of the personality, and in many instances determines the success or failure of a normal biological life. In general, it might be said that given a normal mental make-up and an average environment, those persons possessing properly developed secondary sex characteristics possess the most complete personality, and have greater chances for achieving a normal biological existence. To be more concrete, the male with normal skeletal and muscular development, the female with adequate physical attractions and of a pleasant voice, and both of proper glandular development and free from chronic wasting diseases, usually possess normal personalities, provided the mental make-up and environment are normal.

Any defect in the organic physical development is apt to be accompanied by a feeling of inferiority and fearfulness. This feeling of inferiority leads to the building up of abnormally suspicious personalities, interferes with the acquisition of friends because of fear and distrust, prevents proper relationships with the opposite sex by inhibiting a free and frank exchange of emotions, and may be the basis for the development of systematized delusions in the effort at rationalization. Often this feeling of inferiority is removed by adequate compensation along the line

* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 20, 1922.

of intellectual achievement. Not infrequently there is developed in the attempt to compensate for the feeling of inferiority the abnormal *will to power* so well described by Adler. This will to power may become so extreme as to dominate the individual's entire conduct and bring him into constant conflict with his fellow beings, often with the result of augmenting the original feeling of inferiority, and thereby establishing a vicious circle, tending in the end to make him neurotic and possibly psychotic.

The bearing of glandular defects on the development of the personality is well known to the general physician. It is only the neuro-psychiatrist, however, who is fitted to best appreciate such changes in personality as are evinced by mild degrees of thyroid, pituitary, gonadal and pineal deficiency, etc. Many other physical conditions have their effect on the personality of the individual. Chronic wasting diseases show a definite influence on the personality of the patient, and the average medical text-book hardly ever fails to take cognizance of this fact. The personality of the chronic tuberculous patient or of one suffering from a malignant disease is indeed an inadequate one.

While it has universally been acknowledged that defects of physical make-up are medical problems, there has been considerable divergence of opinion as to whether defects in the mental make-up are truly medical in nature. The sociological and legal aspects in the management of mental diseases, the lack of appreciation of the true nature of the disorders of the mind not only by intelligent laymen but also by many physicians, and the identification of the problem of mental deficiency with the mere execution of a mental test such as the Binet or Performance Tests and the consequent inoculation of the I. Q. into the patient (as judged by the attitude assumed by some so-called clinical psychologists), are the principal causes for this difference of opinion.

The mental constitution of the individual is the resultant of the interaction of the cerebro-spinal and vegetative nervous systems, the activities of the glands of internal secretion, and the inherent intellectual, emotional and instinctive endowment. On it depends the ability to select and control from the multiple possibilities of reaction to situations the particular type of response which is most conducive to a complete biological existence. In the management of disorders of the mind, the principles taught by anatomy, physiology, bacteriology, pathology, chemistry and general medicine and surgery must be taken into consideration as well as the laws laid down by psychology. To deny the right of physicians to claim mental disorders as belonging primarily to their field of activity would be merely expressing immature judgment based on ignorance, while for such sects as the Christian Sci-

entists or other faddists to claim the management of mental disorders would be an imposition on those sick and helpless people who by virtue of the very nature of their illness are deprived of the means of demanding their just and due rights for the treatment of their disease.

Defects in personality occasioned by pathological conditions in the nervous and glandular systems due to abiotrophy or disease can best be considered under the general heading of organic inferiority and inadequate psychical compensation, which has already been mentioned. The personality of the epileptic, the thymic and pituitary giants, the cretin, and patients who have recovered from the various forms of encephalitis, etc., are always taken into consideration by the neuropsychiatrist in his management of the patient in question. Even the most rabid obstructionist will admit them to be primarily of medical import.

Insufficiency in the natural intellectual endowment results in the different types of mental deficiency. The factors causing mental deficiency are numerous, and as yet no one of them is sufficiently dominant to be considered as of unquestionable etiological relationship to the clinical picture. Most often heredity, that vague and awe-inspiring term so frequently employed by professional reformers, pseudo-scientists, and hysterics is blamed for the production of mental defect. The data on which this deduction is based are too inaccurate and too unscientifically gathered to be convincing. The Mendelian law is usually quoted in the effort to establish the eugenic claim, but its application in this instance is far from convincing. Peas and lentils are, after all, readily controllable objects; human relationships, especially in their emotional and instinctive phases, are entirely too subtle to be controlled with the same ease as vegetables and animals. Clinically, at any rate, those who actually are in contact with the mentally disabled meet with so many mentally defective patients in the families of apparently normal and even eminent people, that they come to doubt whether the ultimate solution of the problem rests with securing "made to order" parents for the coming generations. What is needed is further studies in neuropathology, the effect on the child of disease in the mother during the period of gestation, and the relationship of trauma and infectious diseases during infancy to subsequent mental development. Such research belong primarily to the medically trained investigator.

The diagnosis of mental deficiency is equally a medical problem. The interpretation of the results obtained by the various psychometric tests in the very cases in which they are of greatest importance—*i. e.*, the differentiation between the high-grade moron and the dull normal, depends upon so many factors, such as the somatic state of the individual, the element of fatigue present,

the emotional state, attention disorders, etc., that one must regard the psychometric examination in the same light as the Wassermann reaction, blood chemistry examination, urine analysis and the innumerable other procedures that the modern physician utilizes in his effort to arrive at the correct diagnosis and in his attempt to institute the proper therapeutic measures. One need only read the recent publication of Jewett and Blanchard* to be convinced of the danger in regarding mental deficiency as other than a medical problem. To be sure, the services of the psychologist must be utilized in the technique of psychometry and in determining special capacities of the mentally deficient and evaluating their fitness for the various forms of training to which we must resort if we are to enable the mental defectives to make successful adjustments. By proper training and supervision the mentally deficient can be made useful to himself and to the community in which he resides. This has been demonstrated on a small scale in the parole system initiated by Dr. Fernald at the Massachusetts State School for the Feeble-minded and at other similar institutions. It has been proven on a more ample scope during the late war, when the defectives in the ranks were used for unskilled labor, such as digging trenches, etc., with entire success.

Amongst the earliest problems of medical interests that were assigned to the neuropsychiatrist, were those dealing with deficiencies in the instinctive and emotional equipment of the individual. It is only since the introduction of dynamic psychology by the Freudians, and the concomitant final refutation of the old doctrine of the freedom of the will that the full significance of the instincts and emotions in their relation to normal life behavior have been understood. Defects in the development of the reproductive instincts and of the sex emotions through the stages of auto-eroticism, homosexuality and heterosexuality leads to many types of personality defect which are encountered clinically. Failure to develop beyond the auto-erotic stage leads to the persistence of masturbation and to exhibitionism in the physical phase, and to autistic thinking, self-centeredness and negativistic tendencies in the psychic phase, which may eventually terminate in malignant types of reaction such as dementia præcox. If there is failure to develop beyond the homosexual stage, it not only interferes with marriage and the consummation of the natural biological cycle, but if marriage has been contracted, may become the cause of much marital disharmony.

Even in heterosexual relationships there are opportunities for many deficiencies in the normal development of the instinct and its concomitant emotions, when such manifestations as parental fixations, sadistic and masochistic traits, infidelity, etc., are considered.

Man differs from other forms of life in that in him alone, apparently, the mating instinct has become an end in itself, far beyond the procreative needs which this instinct originally served. Modern civilization has developed a code of conventions controlling sexual expressions which makes it impossible for this instinct to find primitive outlets whenever aroused. It is for the best interests of the individual and of the group that the sexual instinct can find partial expression in such vicarious activities as dancing, athletic activities, literature and all the socially approved arts, etc. When the sex instinct is denied both primitive and vicarious expression in one of these socially approved forms of activity, it may show itself in other substituted reactions, such as the neurosis, pathological lying, stealing, arson or even murder. It is, therefore, of enormous importance for the neuro-psychiatrist to acquaint himself with the various forms of expression of the sexual instincts and emotions, in order that he may direct their energy along socially approved pathways whenever for some reason or other the normal biological expression is blocked.

Whenever environmental situations offer no opportunity for adequate expression of instinctive impulses, or whenever their gratification results in too much pain, the chief form of response is in fantasy and day dreaming and in overt action, in which the external situation is distorted or replaced by imaginary situations more in harmony with the desires of the personality. This mode of flight from reality is seen in the psychoneurotics and in some psychotics, and in many cases of inebriety and drug addiction. The basic principle of the problem of drug addiction is to be found in the defective personality of the drug addict who cannot meet realities in life and seeks refuge through the imbibition of the drug. Even the so-called withdrawal symptoms are in the main artificial creations resulting from conditioned emotional reactions which the addict utilizes in his effort to get his pleasures from his artificially created situation. One who deals with drug addicts repeatedly sees the immediate disappearance of apparently distressing withdrawal symptoms by a hypodermic administration of sterile water. Inebriety, too, may be the result of the inability of the individual to meet reality because of the pain that it entails, and also because of the unpleasant sense of tenseness and restlessness which follows the thwarting of the expression of normal instinctive and emotional tendencies.

The instinctive tendencies to action are always accompanied by an emotional color tone. The amount of affective response is invariably in proportion with the amount of stimulation on the instinctive side of activity. Defect in affective responses causes certain types of personality defective individuals clinically familiar to all neuropsychiatrists as the manic, the depressive, and

* *Mental Hygiene*, Vol. VI, No. 1, Jan., 1922, pp. 39-56.

neurasthenoid types of individuals. The manic personality, because of his constant shifting in fields of activity, his unusually rich affective responses, and his power of rapid association, if properly managed might be made to utilize his very defect to advantage. If allowed to go without the guidance of one trained in mental problems the manic individual is apt to get into situations that will tax his defective personality to the extent of eliciting a psychotic reaction. This holds equally true with the depressive type of individuals. The emotional poverty of the schizophrenic type of individual, his seclusiveness and his inadequate reactions to situations are present in early life, and if detected early, the individual may be led to maintain habits of conduct that will delay the precipitation of the psychosis. The neurasthenoid individual with his ever-increasing desire for social praise and his intense selfishness, can be made to see the shortcomings of his attitudes to life, and can be made to assume a more wholesome mode of conduct. These are all vital and tangible conditions which constitute defects in the personality, and which are remediable in the hands of one properly qualified to manage.

Environmental influences begin to leave indelible impressions on the personality of the individual as soon as one is born, and are especially of tremendous importance in the infantile, pubescent and adolescent periods of life. The reactions of the parents to the child and their reaction to each other, tends to influence the personality of the child by creating certain conditioned emotional reactions which later in life may control the entire conduct of the individual. An unnecessary amount of affection on the part of one or the other parent may lead to fixations that are difficult to break when it becomes necessary at time of adolescence to make the natural transfer of affection to the proper person. It also quenches any desire for original expression of one's natural abilities and interferes with the proper working out of vocational interests by subordinating the individual's own instinctive inclinations to the plans outlined by the parents. On the other hand, a hostile or too critical attitude on the part of the parents results in an antagonistic attitude in the child not only to his parents but also to all other forms of authority, such as the school, the church and the entire social organization. It is equally true that those children lacking the wise guidance of the average sensible parents lack self-reliance and aggressiveness which comes from encouraging desirable traits and suppressing undesirable ones. This is well shown in the meekness and in the generally subdued tone of the institutional child. The foundations of ethical relationship with one's fellow-beings, respect for authorized authority, respect for the old, and, in fact, the very fundamentals of attitudes

towards democratic government are laid in the relationship of the parents towards the children and in the response of the children towards the various parental stimuli.

The school and university life also has an uneradicable impression on the personality. Wherever there is intolerance and pure dogma there results a stunted personality unable to cope with life's broadest problems; on the other hand, wherever there is a tendency to encourage originality, promote the widest application of the play instinct, and allow a liberal expression of the affective and emotional life, there results a pliable and readily adaptable personality, a complete biological organism.

Restricted civil rights, intolerant laws, lack of educational opportunity and unfavorable economic situations tend to dwarf the personality and lead not only to unhappy biological existence but to severe neuroses and to even psychoses. The proverbially neurotic Jew is an example of pure environmental neurosis. Having been deprived of religious tolerance, and submitted to restricted civil rights, and limited in his opportunities at earning a livelihood, he becomes entangled in the meshes of habit reactions established by vicious conditioned emotional reactions, and reacts in the typical neurotic fashion whenever demands for adjustment are too exacting. This condition no longer holds true as soon as he is transplanted to a more tolerant country and he is allowed free expression of his religious beliefs and is permitted educational and civil opportunities. The third American generation is practically free from neuroses, and its entire reaction may be judged from the numbers which it contributes to fields of endeavor not only along intellectual pursuits but also along physical competitive lines such as prize fighting, etc., and by the fact that it contributed to the army in the late war about thirty per cent in excess of its expected numbers as judged from its numerical proportion to the rest of the people.

The contamination of the environmental situations by the creation of artificial and unbiological situations as occasioned by the so-called blue laws and by the suppression of the instinctive and emotional reactions, as advocated by certain sects, preventing their expression even in such vicariates as dancing or athletic activities during the most opportune and leisurely periods (Sunday laws, etc.), tends to dwarf the personality, breeds intolerance, narrows the range of interests, encourages superstition, and cultivates a gloomy, pessimistic, grouchy, attitude toward life in general. On the other hand, the manipulation of the environment in a manner that will allow free expression of the innate instinctive tendencies, either in overt action, whenever it is practical, or in satisfying vicariates, through the encouragement of the output of energy through interest in athletics, sports, dancing,

games, and the prevention of abnormal mood reactions through the practice of facing situations squarely, will tend to develop a tolerant, sociable, frank, self-reliant, stable, productive type of personality.

It is within the environment that one can find most that may be utilized for the welfare of not only the normal type of individual, but also of the one with definite personality defect. This has been shown by the community center movement which is making it possible for the normal personality development in the younger people by offering them opportunities for a healthy expression of their instinctive and emotional cravings. Eugenics is a matter for the Lord's business; let us mind our own, and take more interest in environmental situations and prevent their contamination by intolerant and ignorant fanatics and reformers.

IS THE SHAPE OF THE PUBIC ARCH A FACTOR IN THE CAUSATION OF CYSTOCELE?*

By F. C. GOLDSBOROUGH, M.D., F.A.C.S.

BUFFALO, N. Y.

SEVERAL months ago, while operating on a patient for prolapse of the uterus, with a very large cystocele, I noticed that the pubic arch seemed to be wide and unusually rounded. Later examination confirmed this and showed the distance between the tuberosities of the ischii to be 12 cm. In the next two cases of descensus with cystocele a similar condition of the pubic arch was found. And in reviewing other cases, it seemed to me that they all had a similar type of pelvis, with well rounded, wide pubic arch,—and I cannot recall a cystocele in a patient with a narrow arch. So the thought occurred to me that the shape of the pubic arch might be a factor in the causation of cystocele.

On looking up the etiology of cystocele in the modern gynecological text-books, one is struck with the lack of any definite statements, although pages are devoted to symptoms and treatment with descriptions of various operations for the correction of the condition. The cause usually given is the loss of support to the anterior vaginal wall by laceration of the perineum. However, this is not very convincing, for we have all seen cases of complete laceration of the perineum of long standing with no cystocele at all. Some of the writers state that the stretching of the pelvic fascia at child birth weakens the bladder support and later cystocele develops, though there are no definite statements as to just what tissues are involved, or how they are impaired.

On turning to the books on obstetrics, one finds a great deal written on lacerations of the birth canal and means of prevention and repair, though little is said about lacerations of the anterior wall of the vagina and nothing about any type of injury which will later lead to cystocele.

Referring to the books on anatomy one finds considerable about the fascia which support the pelvic structures. These fascia have their anterior attachments on the lower and posterior portion of the symphysis pubis and pubic bones. However, it is not easy to get a clear idea as to just how these pelvic structures are supported, but it would seem that the chief supports of the bladder are two folds of fascia extending from the posterior lower surface of the pubic bone to the Ischiac spines.

Now my idea in regard to the shape of the pubic arch being a factor in cystocele, is, that where there is a wide rounded arch, the presenting part in its descent—in the pelvis and especially in its passage through the pelvic outlet—comes in close contact with the posterior surface of the symphysis and the pubic arch thus stretches or tearing the supporting ligaments of the bladder from their attachment to the posterior surface of the pubis and later, cystocele develops. However, where there is a narrow arch the presenting part must pass further posterior and these bladder attachments are not injured.

If further observation proves this idea to be correct we will have to devise some means in delivering women with wide rounded pubic arches so as to prevent these injuries.

Deaths

ARONSON, EDWARD A., New York City; College of Physicians and Surgeons of New York, 1899; Fellow American Medical Association; Academy of Medicine; Member State Society; Alumni Mt. Sinai Hospital; Assistant Physician Mt. Sinai Hospital. Died June 25, 1922.

BELL, ROSALIE, New York City; Women's Medical College of New York Infirmary, 1898; Fellow American Medical Association; Member State Society. Died June 13, 1922.

FISH, EMMETT GRANT, Union Springs; Cornell Medical College, 1904; Member State Society. Died May 9, 1922.

MULCAHY, WILLIAM L., Far Rockaway; Albany Medical College, 1903; Fellow American Medical Association; Member State Society; Visiting Surgeon St. Joseph's Hospital, Far Rockaway. Died June 22, 1922.

MURPHY, DENNIS, Gloversville; Albany Medical College, 1904; Fellow American Medical Association; Member State Society. Died June 14, 1922.

WIEDRICH, ERNEST H., Newark; Syracuse Medical College, 1908; Member State Society; Assistant Superintendent Custodial Asylum. Died May 24, 1922.

* Read at the Annual Meeting of the Medical Society of the State of New York, at Brooklyn, May 5, 1921.

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LESS THAN FIVE-EIGHTHS.

The fact that only 9,500 of the 16,000 physicians in the State of New York are enrolled in our membership, reflects a condition which should receive careful consideration.

Why are 6,500 medical graduates willing to have their interests looked after by others without taking any trouble about it?

Why are they so adventurous that they care nothing for the protection of organization against dangers that are constantly threatening their professional existence?

Why are they blind to the value of the post-graduate work of the meetings of the County Societies?

Why are they so self-sufficient that they are content without interchange of opinion, or desire for other viewpoints?

Why are there so many selfishly isolated practitioners who have forgotten the ideals of fraternity which they promised to cherish?

These questions are asked of every reader of the JOURNAL with the intention of stimulating inquiry among their unsocial neighbors. If the fault lies with the State Society, proper remedial measures must be taken to make its membership attractive.

In this era of "Drives" may we not suggest a campaign that will not rest until every extra-organization physician shall have been canvassed?

The *Knickerbocker Press* of Thursday, June 22d, printed the following:

HEALTH OFFICIALS SEEK FACTS ON CHILD'S DEATH

An investigation is being conducted by the State Health Department of circumstances surrounding the death from diphtheria in Syracuse Wednesday of Gerhardine Hurst, seven years old. She had been treated for nearly a week by Benjamin R. Sauer, a chiropractor.

Dr. Mathias Nicoll, Jr., Deputy Health Commissioner, who returned from New York last night, declined to comment on what action the department would take in the case until he had had an opportunity to examine the facts. Dr. F. W. Sears, Sanitary Supervisor of the Department, is in Syracuse preparing a statement for the department.

We presume that Benjamin R. Sauer, chiropractor, exhibits a sign which advertises him as "Doctor" or "D.C."

We presume that the parents of Gerhardine Hurst, aged seven, potentially valuable citizen, were influenced to employ a chiropractor by local sentiment, by the attraction of advertisement, and by the indifference of constituted authority, to the safety of the individual, or to the interest of public health.

N. B. V. E.

WARNING!

In the last three months, counsel has disposed of sixteen malpractice cases against physicians. Only five of this number were protected by the malpractice defense insurance. In only one case was there a jury verdict against the defendant and that for \$5,000 and unfortunately, in that case the doctor was not insured. We have confidence in reversing this unjust verdict. Settlements were necessary in two cases and in neither case was the doctor protected by insurance. The insurance plan was adopted and is in force for your benefit. If you desire its protection, seek it today.

In the last three months there have been twenty-four new malpractice suits started against physicians and only eleven of the doctors sued are protected by the insurance plan. In addition, there have been received eight claims against physicians in which suit is threatened. In each of these instances the doctor is protected by insurance.

These records are brought to your attention as tangible evidence of the increasing law hazard of medical practice.

The Society has provided adequate protection against this hazard in its malpractice defense indemnity furnished by the Aetna Life Insurance Company. If you are a member, you may have a policy of insurance that will give you the highest quality of protection for reasonable rates.

G. W. W.

A LAY MEDICAL MAGAZINE

Incorporated in the report of the Trustees of the American Medical Association to the House of Delegates, during the latter's session at St. Louis in May, was the following statement:

At the last annual meeting of the Association at Boston, the House of Delegates authorized the publication of a lay medical magazine. During the year the Board has held conferences with the Council on Health and Public Instruction and with individuals in regard to the character, scope, frequency of publication, physical form and other details of importance in this undertaking. It is now able to report that it is proceeding in the establishment of a lay medical magazine, which will be published when the needed additional pressroom is made available on the completion of the new headquarters building.

To diffuse among the laity such knowledge of disease and its treatment as would be of use to the non-professionals is a matter which must be handled with great tact and diplomacy, and will be regarded by some as a hazardous experiment. Already the patients of the well-to-do and wealthy classes know so much medicine, gleaned from quizzing doctors and reading the cub reporter's wisdom in the newspapers, and also sapient lucubrations on blood pressure and psycho-analysis from lay pens,

as to fit him (he thinks) to argue with the family physician and demand full explanation and instruction before, in his ignorance, he will permit the methods and medicines prescribed by a physician who has developed under training, study and experience. It is often a case of "Explain to me fully your business and I'll tell you how to run it."

So often a partial dose or a double dose is given by a relative to the patient, so often a measure prescribed is not used, so often a garbled or entirely false statement is made as coming from the medical attendant by a self-sufficient poseur who is really ridiculous instead of being admirable and wise.

Physicians have told patients too much; and many of those of the classes of patients mentioned believe in their hearts that medical schools are unnecessary, since they imagine that the entire needful knowledge of disease and its treatment has been acquired by them from quizzing, heckling and sandpapering long-suffering physicians of years of training, experience and knowledge. Too often well-to-do or wealthy patients will coolly deny the truth of the physician's statements on the ground that they know the patient's constitution better than he, and therefore are qualified to reject treatment by a remedy of which they never heard before, prescribed for an ailment never previously encountered by them, whose name they can neither pronounce nor spell, and concerning which they have no shadow of right to an opinion.

Individual instances recur by the score to every reader, and cause a grave doubt to arise in the mind as to the desirability of a Lay Medical Magazine, which will furnish to the medically illiterate layman the approved weapon of the superficial "Yes, but I read—" something quite irrelevant.

Physicians continue to be a unit on the imperative necessity of teaching human physiology, the fundamental rules of health, hygiene and first aid in all schools. A. W. F.

THE PHYSICIAN AS A SPEAKER

One fact was very forcibly brought to the mind of every auditor in the vast number of physicians in attendance upon the annual meeting of the American Medical Association last May at St. Louis. That was the utterly inadequate voices of most physicians who read papers. Even when in response to calls of "louder," or to appreciation of the attitude of strained attention of most of an audience, rarely did the speaker's enunciation become adequate, in spite of distressing effort resulting in quickly worn voices, all too evident to the disappointed listeners.

Time was when the physician was the cultured man in the small community. He was the scientific man, the publicist, the man of good judgment with a trained mind. He was the ready speaker who commanded attention. Now, along with proportionately less preliminary school training and more technical preparation, and perhaps with smaller comprehension of the agencies that modify general life, he is not as often "the guide, philosopher and friend" of the olden time.

With the commercial drift of the practice of medicine toward the position of a craft, comes a lessened desire for civic and sociologic prominence and a diminished interest in acquiring the attributes that fit the physician for playing his proper role. And so, few physicians seem to give any attention to voice culture or to the art of public speaking, and hence fail at it.

A scholarly, scientific and masterly address delivered by a highly appreciated and well-beloved physician, read word for word from manuscript in the Odeon Theatre at St. Louis during the meeting of the American Medical Association was audible only to those who occupied the first eight rows of seats, and in many instances only by concentrating intensely and very exhaustingly.

It would seem that a better plan, especially for the medical author with a weak voice, would be to read a synopsis of his paper, and let his auditors read the unabridged production when published.

Better still, more convincing and surer of reaching home in the listeners' minds, would be to secure some cultivation of the voice, if one is really going to use it, and then saturate oneself with the topic and then deliver one's synopsis oratorically to the audience without servile dependence upon the manuscript.

A. W. F.

UNIVERSAL MEDICAL EXAMINATION

One reason for the keen desire, felt by many hundreds of thoughtful physicians, for the establishment of universal military training in this country was that thereby would be established, as an inevitable concomitant, universal medical examination in early youth.

Was it not, in round numbers, 25,000,000 men and youths who were examined before 5,000,000 recruits were passed as fit for military service a few years ago? It was the experience of more than one medical examining officer that of each 24 recruits taken from wealthy or well-to-do families, as well as from those of us whom Lincoln called "the plain people," not more than four, on the average, were suitable to pass for appointment in the Navy of the United States during the Great World War. Flat feet; curved spines; lopsided bodies; chronic bronchitis; commencing tuberculosis, hearts racing at 90 to 120 beats a minute, from coffee, whiskey and tobacco;

defective vision and defective mentality disappointed us keenly, and awakened us to the imminent danger of our people and therefore of our civilization. Uncorrected in the early years of youth, these morbid conditions—many presently curable—will certainly wreck the individuals after constantly reducing their capacity and efficiency. Perhaps worse still, these weaklings and invalids will marry and rear their kind, and thus water the blood of our people.

Nothing will save us except universal medical examination, and the institution at once of the necessary corrective remedial measures. Let every physician bring this matter home to every mother in his clientele, and urge upon her the matter of saving her boys and girls from becoming wrecks. Mothers have votes and can influence legislation. Mothers can influence The American Legion posts to take up a campaign for universal medical examination, a most worthy work for its members which will appeal very strongly. And if the Legion will take up the good work, it will be successful, and the next generation will be composed of sturdy, healthy, effective and happy citizens.

A. W. F.

THE BOGIE AGE LIMIT

It is a cause of deep regret to all the physicians of his acquaintance that Dr. John B. Deaver will soon be retired, because of the age limit, from his position of Barton professor of surgery in the medical department of the University of Pennsylvania, retirement at the age of 68 years being mandatory.

This occurrence will be considered a distressing event by all who heard Dr. Deaver's stirring and virile address before the annual meeting of the Medical Society of the State of New York, in Albany last April, despite his savage jabs at the internist, received with amusement by those of us who did not deserve them.

This retirement is but another instance of the old-established but altogether injurious and wasteful basis for decision, known as the age limit, of which our country has been a victim for many benighted years.

The measure of a man's usefulness is not years, but efficiency. We treat medically many forty-five-year old wrecks who are retained until they are sixty, in places they cannot fill, while alert, capable, valuable and efficient men are retired at sixty or sixty-two, simply because the years have passed, often unnoticed and powerlessly, over their heads. This wrong state of affairs obtains also in the army and navy, and therefore Admiral Sims, with all his valuable knowledge and efficiency, will soon be retired, and a general movement upward will result in the list of naval officers carrying along inevitably some weaklings.

A Pennsylvania Colonel who served through the whole World War is authority for the statement that the defeats sustained by the French during the earlier part of the conflict were due to the fact that young men were put in important positions of command, the cry being, "This is a young man's war." Success followed the intrusting of the campaign to Petain, Papa Joffre, Foch and "the Tiger of France," Clemenceau. It would hurt some one's feelings were he retired for any cause before sixty-two, and therefore the inferior, impaired man stays in office for years, and is retired along with the still superior, efficient and valuable man.

There is a story about continuing to go to the grist mill with a stone in one end of the bag over the horse's back, and the grain in the other end, simply because father and grandfather always did it.

Thus the cause is sacrificed to the man and our idiotic attitude toward matured efficiency is maintained.

A. W. F.

NOTES FROM THE NEW YORK STATE DEPARTMENT OF HEALTH

CORRESPONDENCE COURSE FOR PUBLIC HEALTH NURSES

For a number of years the State Department of Health has conducted a correspondence course for Health Officers in co-operation with the New York University & Bellevue Hospital Medical College. Recent consideration of the shortage of public health nurses has led the Department to invite the co-operation of the same medical school in conducting a correspondence course for public health nurses. Arrangements have been made to open such a course on September 5, 1922, calling for ten hours weekly study for a period of 48 weeks. The course will include instruction in all the various phases of public health work in which nurses are engaged and will cover such topics as maternity and child hygiene, bacteriology and communicable diseases, vital statistics, community and home hygiene and sanitation, industrial hygiene, occupational diseases, mental hygiene and the principles of community organization and administration. In the latter part of the course a week of study and residence in New York City, Buffalo, Albany or Syracuse will be required. The course will be open to all registered nurses. The Department hopes by this means to increase the number of nurses qualified to enter the service of communities and private organizations working in the public health field.

MATERNITY AND CHILD HYGIENE

Under the provisions of the Davenport-Moore Act adopted by the New York Legislature at the last session as a substitute for the Federal Sheppard-Towner bill, the State Department of Health has organized its new Division of Maternity, Infancy and Child Hygiene and is prepared to offer certain definite types of service to local communities throughout the State which desire to organize campaigns for the conservation of maternal and infant life. The appropriations made by the Davenport law do not provide subsidies to local communities for this work but the Department has been enabled to appoint a limited staff of physicians and nurses

of special experience in maternal and infant welfare work whose services are offered to local communities for the purpose of organizing local forces and starting the work properly. The Department will, for example, pay for the services of designated physicians to conduct physical examinations at local child health stations during a limited period within which the community will be expected to organize its own resources and prepare to carry on the work at its own expense. In accordance with the established policy of the Department, no treatment will be given in connection with such examinations but all cases will be referred to the local family physician for the treatment of disease or correction of defects. In the same manner the Department will offer the services of nurses and field agents capable of making preliminary surveys, organizing child health stations and carrying on actual nursing service until the community is ready to carry the work itself. To insure the proper standardization and expert medical control of the work contemplated by the Davenport act the Department has invited a number of well known obstetricians and pediatricians to serve as regional consultants and is able to announce the following acceptances:

Obstetricians: Dr. Paul T. Harper, Albany; Dr. Reeve B. Howland, Elmira; Dr. Henry W. Schoeneck, Syracuse; Dr. Stuart B. Blakely, Ginghamton; Dr. Ralph W. Lobenstein, New York City; Pediatricians: Dr. Albert D. Kaiser, Rochester; Dr. Henry L. K. Shaw, Albany; Dr. Edward J. Wynkoop, Syracuse; Dr. DeWitt H. Sherman, Buffalo; Dr. Frank H. Richardson, Brooklyn.

THE HEALTH OF A RURAL COMMUNITY

The Division of Vital Statistics has recently completed an analysis of the birth and death rates of a typical rural, farming community in New York State, namely the rural portion of Cortland County excluding the City of Cortland and the incorporated villages. This study was undertaken at the suggestion of Professor Warren S. Thompson of the New York State College of Agriculture at Cornell University who is conducting a general economic and social survey of rural conditions in that county. As this is the first analysis of the kind ever made of the vital statistics of a native born rural American community in New York State it is believed that the conclusions will be of general interest.

The study covered the ten year period from 1911 to 1920. The population of this area is regressive, the loss apparently being largely due to emigration from the farms, which more than offset the marked natural increase from excess of births over deaths in this area. The mortality rate of the area was found to be exceptionally low. When the crude death rate for the ten year period was corrected by adjustment to a standard age population it was found to be only 10.7 whereas the death rate for the entire upstate area when corrected in the same manner for the same period was 14.3.

The average birth rate of the district for the same period was 18.2 while for the entire rural area of New York State 1913-1918 was 19.5. The still-birth percentage was 3.2; for rural New York it was 3.5. The infant mortality for the 10 years was 80, while for the entire state, exclusive of New York City, 1913-17, was 103.

The Department will publish a complete report of the survey of the Cortland County district, showing the distribution of the mortality by age, by cause of death, and by causes divided into groups according to the degree of preventability. The conclusion which already stands out clearly is that even in a moderately large rural district with a normally very low mortality, there is still a considerable mar-

gin of unnecessary deaths from strictly preventable causes such as typhoid fever, diphtheria, infantile diarrhea, accidents, etc. For example there were during the ten years 10 deaths in this section from typhoid fever, and 143 from other common communicable diseases such as diphtheria, dysentery and tuberculosis, while many deaths occurred from other preventable causes, including 70 from accidents, 49 from diarrhea and enteritis, and 8 from maternal causes.

SMALLPOX IN NIAGARA FALLS

In 1914 Niagara Falls was afflicted with a considerable outbreak of smallpox and for a time it was feared that another serious outbreak would take place this year. Up to the first of May only 14 cases of smallpox had been reported throughout the State, but as nearly all of these had occurred along the Canadian border the Department had repeatedly pointed out the danger of invasion from Ontario where the disease had for some time been prevalent in mild form. Since May 1st, 67 cases have been reported in Niagara Falls, very many of them related clearly to a case reported from one of the parochial schools. Through the vigorous efforts of the health officer over 2,000 persons were vaccinated within a few weeks and the number of cases has now fallen off rapidly so that it is hoped that any danger of a more serious outbreak has been passed.

SUSPECTED SMALLPOX IN A HAT FACTORY

An epidemiologist from the Department was recently assigned to diagnose a case of suspected smallpox in a young woman employee in a straw hat factory. The following excerpt from his report is of interest: "The patient is employed in a hat factory making straw hats. This straw is treated with acids and sometimes is rather wet and damp when handled by the operators. She worked May 1, 2 and 3, but on the morning of Thursday, May 4, an eruption was seen on her hands and some on her face and as she described it, 'it was terribly itchy' in character. The first appearance of this patient with the eruption on her forearms and face would naturally lead one to suspect smallpox, especially as the area affected was covered with a white salve, probably zinc oxide, but on removing the salve I observed the appearance of the lesions, some of which were macular and of a large size, others vesicular, the size of a small bean, while other vesicles were minute in character. The eruption was confined to the dorsal surface of the hands and arms and about the region of the mouth on the face. At no time has she felt any illness nor is it known that she had had any temperature.

The Department's representative felt satisfied that the case was a dermatitis, probably caused by the irritating action of some of the acids used in the treatment of the straw used in making the hats. The local physicians stated that they frequently have dermatitis cases among the employees of this hat factory but that they had never seen one which was vesicular in character.

DISTRIBUTION OF ANTIPNEUMOCOCCUS SERUM

In modification of previous plans the Division of Laboratories and Research is now prepared to distribute Type I antipneumococcus serum through district supply stations to any physician who fills out and signs a declaration certifying that he is familiar with the technique of intravenous administration of this serum and that it is to be administered in a case of pneumonia in which a laboratory test shows Type I pneumococci. This declaration, in which the physician also accepts full responsibility for the administration of the serum, is to be forwarded to the State Laboratory when the serum is distributed. Blank forms for the declaration will be furnished at the laboratory supply stations.

Correspondence

The Council at a meeting held in Albany, April 20, 1922, moved, seconded and carried

That the Journal be not used in any way suppress any expression of opinion; and that its correspondence columns be open for all proper communications; and that "proper" communications will be deemed those which are not slanderous or libelous in their nature.

THE PASSING OF THE MEDICAL RECORD

Editor, NEW YORK STATE JOURNAL OF MEDICINE.

MY DEAR DOCTOR: A statement that the passing of the *Medical Record* "Means the end of independent medical journalism" has caused considerable criticism in the medical press. This statement, which was declared "absolutely false," was attributed to me in a letter to the *New York Herald* on April 22 over the signature of the A. R. Elliott Publishing Company. The communication from the Elliott Company was in reply to one from me to the *New York Herald* on April 20, 1922, in which, referring to the merger of the *Medical Record* and the *New York Medical Journal*, I said: "In the first place this means the end of independent weekly medical journalism in this part of the United States, if not throughout the country."

I am asking the publication of this "explanation" in the NEW YORK STATE JOURNAL OF MEDICINE, as the *New York Herald* has ignored two requests to this effect. As to the charge of "absolute falsehood," I leave it to be placed where it belongs by any unprejudiced reader of my original communication and the perverted version of it to which I have called attention.

117 W. 76th St., New York.

JOHN P. DAVIN, M.D.

DEPARTMENT OF HEALTH, CITY OF NEW YORK

New York, June 20, 1922.

Editor, NEW YORK STATE MEDICAL JOURNAL.

Dear Sir: The Bureau of Public Health Education of the New York City Department of Health desires to arrange for public talks on subjects relating to the promotion of public health and to extend opportunity for questions and discussion on medical topics.

It is desired to arrange with well known specialists in various medical fields to give these talks at meetings of different societies (social, civic, religious, etc.), on subjects of interest and importance to medicine and public health.

These talks afford splendid opportunity for advertising medicine and for instructing the public, and will do much to overcome the inroad of quackery and improper cults who play and prosper on account of ignorance.

Similar publicity is undertaken in many of our states and municipalities and the results have been uniformly helpful. It is also suggested that various medical societies, especially our county societies, consider meetings that will interest the public and to which the public may be invited.

Some county societies have held these public meetings, especially in the Metropolitan district, where the Committee on Public Health Education has given interesting talks on public health work as it relates to medicine, and these have been successful. It would appear from such success that there is a need for this work and that it is well worth trying again. In the Metropolitan district in the five boroughs, volunteer speakers are desired and the Director of Public Health Education of this Department (505 Pearl Street, Manhattan), would be pleased to be furnished with the following particulars:

Full name, titles, address, telephone number, hospital and dispensary connections, specialty.

It would also be helpful in making lecture assignments, if volunteers would mention the free time they have available.

S. DANA HUBBARD, Director,
Bureau of Public Health Education.

PRUNES

Contributions Invited

Song of the Unsung

Some may talk of Alexander;
Some may chant of Hercules;
But we choose a hero grander
As the subject of our glees,
And in numbers laudatory
We will celebrate his fame,
And his high untarnished glory,
Though we do not know his name,
On his hair, black, blond or sorrel,
Place the deathless wreath he's won.
He should go forth crowned in laurel,
Whom young doctors practice on.
—F. F. V. in the Tribune.

In Spite of All

The oldest doctor in the world has just celebrated his hundredth birthday. His case is regarded as a triumph for Nature over medical knowledge.—*Punch* (London).

Or the Hills for the Eminences

Sir: In commenting on the death of the oldest inhabitant of Hornell, N. Y., *The Rochester Democrat and Chronicle* remarks:
"When Mr. Welliver came to this section the woods and hills were covered with a dense forest."
Evidently he couldn't see the woods for the trees.
ROSCOE PEACOCK.

Some One Should Arbitrate

Since we said "Goodby" at the last session of the Supreme Council at Niagara Falls death has claimed for the third time a brother prominent in the Grand Jurisdiction of New York.—*Royal Arcanum Bulletin*.

Suggestions to Vacationists

"Here's my bill," said the surgeon. "Wish you would pay down \$100 and then \$25 per week."
"Sounds like buying an automobile," said the patient.
"I am," said the surgeon.

As reported by the United Press: "Mr. F. S. D. —, Cedar Rapids, Ia., passing through this city last night, en route on an automobile tour, lit a match to see if his gas tank was empty. It was not. Age, forty-seven. Cedar Rapids papers please copy."

Has Advantages, Too

North: "Don't you want to be cured of your hay fever?"
West: "Not on your life! It's my only assurance of a real vacation."

Carte Blanche

Doctor: I would advise you, madam, to take frequent baths, plenty of fresh air, and dress in cool gowns.
Husband (an hour later): What did the doctor say?
Wife: He said I ought to go to a watering-place, and afterwards to the country. Also, I must get some new light gowns at once.—*Tit-Bits* (London).

A Steady Pupil

Anna: Are you ever going to learn to swim?
Bella—No indeed. It is too much fun being taught.

Willing But Cautious

A man while fishing fell into the water. A fellow fisherman rescued him, laid him on his back and began to think.
"What's the matter?" asked the bystanders. "Why don't you revive him?"
"There are sixteen rules to revive drowned persons," said the benevolent man, "and I know them all, but I can't call to mind which comes first."
The rescued man opened his eyes and said faintly: "Is there anything about giving brandy in the rules?"
"Yes."
"Then never mind the other fifteen."
—From the Los Angeles Times.

We have never understood why the man who gasps and shudders while taking a shower will swear after immersing himself in the infinitely colder ocean that the water is "F-fine!"

Pretty soon, if things go on as they probably will, you won't be permitted to take a sea voyage without a physician's prescription.

First Flea: "Been on a vacation?"
Second Flea: "Nope; been on a tramp."—*Pacific Weekly*.

Who Lies? Here Lies—

He didn't like the statement
Of the life insurance Doc;
He said he had no murmur,
He was sound as any rock;
They didn't know their business,
And that therefore he could laugh—
You might surmise the balance, for—
This is his epitaph.
—MERVIN L. LANE.

Where Will You Be at 65?

Statistics show that out of every 100 average men and women—
36 die of preventable diseases before they are 65.
Of the 64 who live longer,
1 will be rich,
4 will be well-to-do,
5 will be earning their own living,
54 will be dependent upon relatives, friends or charity.

Oh every fly that skips our swatters,
Will have five million sons and daughters,
And countless first and second cousins;
Of aunts and uncles, scores and dozens,
And fifty-seven billion nieces;
So knock the blame thing all to pieces.
—WALT MASON.

A customer came in and said to Mr. Fitzmaurice:
"I was told to get a camisole or a casserole, and I forget which—can you help me?"
"Well," said Fitz, "if the chicken's a dead one, it's a casserole—but if she's alive, it's a camisole."

Statisticians claim that there is only one bath tub in France to every 800 inhabitants. Now we know what they mean by French Dry Cleaning.

NEWS ITEMS

The first book off the press of the Three Kings of the University of Louvain since that University was razed to the ground by the Germans is a French translation by Dr. Hertoghe of Anvers of "The Problem of Cancer," by Dr. William Seaman Bainbridge of New York, still a Commander in the U. S. Navy. The first copy of this edition was sent to the Queen of the Belgians.

To Dr. Stephen Smith of New York, now sojourning with his daughter, Mrs. Walter Mason of Montour Falls, N. Y., was awarded by Columbia University the degree of D.Sc., at the last Commencement. The New York Academy of Medicine recently made Dr. Smith an honorary member.

A public health laboratory for Clinton County has been established in the Champlain Valley Hospital, Plattsburg, N. Y., by the action of the Board of Supervisors in appropriating \$2,000.00 annually towards the maintenance of the laboratory. The laboratory was established through a gift from Mr. David Merke of Plattsburg in memory of his parents and is known as the Merke Memorial Laboratory. It is planned to have this service extended to Essex County within a short time.

The Board of Directors of the Physicians Hospital, Plattsburg, announces that ground will be broken within a few days for a new, and in every way up to date hospital of about eighty beds. The funds to pay for the new building were raised in part by a drive last fall, but are principally the gift of Mr. W. H. Miner of Chazy, N. Y.

Dr. W. H. Everett of Peru has again resumed his practice after a long and enforced vacation due to a fractured radius.

Drs. T. A. Rogers and L. G. Barton, Jr., of Plattsburg, spent two weeks in Canada with friends on a hunting and fishing trip. They report fish and game plentiful and brought back a good coat of sunburn.

Lieut.-Col. John M. Swan, Rochester, former Commander of Base Hospital No. 19, has been awarded the conspicuous cross of the State of New York, following the citation of Dr. Swan by General Pershing in France, April, 1919.

The twenty-third annual meeting of the Lake Keuka Medical and Surgical Association was held July 6 and 7 at the Keuka Hotel, under the presidency of Dr. John M. Quirk, of Watkins. The Association embraces the counties of Allegany, Chemung, Cortland, Cayuga, Erie, Genesee, Livingston, Monroe, Niagara, Onondaga, Ontario, Schuyler, Seneca, Steuben, Tioga, Tompkins, Wayne, Wyoming, Yates, Oneida, and Madison.

Papers were presented by Drs. Albert Warren Ferris, John S. Kirkendall, F. J. Parmenter, William L. Wallace, Irving W. Potter, William Van Pelt Garretson, Frederick W. Sears, Harry Apfel, Henry C. Senke, Howard L. Prince, Arthur W. Booth, Allen W. H. Holmes and Andrew A. Eggston.

The annual meeting of the Watertown Medical Society was held at the Henderson Harbor Inn. The members were entertained by Drs. James F. McCaw and William J. Kellow to a fish and chicken dinner.

The following officers were elected for the ensuing year: President, Walter S. Atkinson; Vice-President, Murray MacG. Gardner; Secretary, Emmett B. Dunlay; Treasurer, Elgin R. McCreary.

Medical Society of the State of New York

MEETING OF THE COUNCIL

A meeting of the Council of the Medical Society of the State of New York was held at the State Society rooms, 17 West 43rd Street, on Saturday afternoon, May 13th, 1922. Dr. Arthur W. Booth, president; Dr. Edward Livingston Hunt, secretary.

The meeting was called to order at 2.45 p.m., and on roll call the following answered to their names: Drs. Arthur W. Booth, E. Eliot Harris, George M. Fisher, Nathan B. Van Etten, Edward Livingston Hunt, Arthur J. Bedell, Arthur D. Jaques, Walter H. Kidder, John M. Quirk, Ethan A. Nevin, Harry R. Trick, Parker Syms, James N. Vander Veer, Henry Lyle Winter, Joshua M. Van Cott.

A letter was read from Dr. Edwin MacD. Stanton regretting his inability to be present.

Moved and seconded that Dr. Stanton be excused. Carried.

A quorum being present Dr. Booth announced the meeting open for business.

The secretary read the minutes of the last meeting.

Moved and seconded that, as the By-laws require that the Committee on Publication should be appointed by the Executive Committee and not by the Council, the portion of the minutes appointing a committee on Publication be stricken out.

Moved and seconded that the minutes as amended be approved. Carried.

The secretary read the following letter:

New York, April 21, 1922.

To the Council of the Medical Society of the
State of New York

Gentlemen:

With regret I beg leave to herewith tender my resignation as chairman of the Committee on Medical Research. My effort to decline this position before my election was prevented by the speaker, with none but the kindest motives however.

Grateful for the many courtesies I have enjoyed for years as a member of the Council, I am with most sincere well wishes,

Yours very cordially,

FREDERIC E. SONDERN.

Moved and seconded that Dr. Sondern's resignation be accepted with regrets and that the Council extend to Dr. Sondern its appreciation of the work which he has done for the Society for so many years, both as a member of the Council and as chairman of the Committee on Medical Research. Carried.

The secretary read the following letters:

May 2, 1922.

My dear Dr. Hunt:

Can you give me any information regarding the services of Whiteside & Stryker in a malpractice suit? I have a suit against me now pending, for which I am insured, and the insurance company's attorneys are Bond, Schoeneck & King, of Syracuse.

Mr. King, of that firm, who is handling the case, would like to have the firm of Whiteside & Stryker sit with him in that case, providing the insurance company will not have to pay them a fee. I am a member of the Medical Society of the State of New York, in good standing, and am I entitled to the services of Whiteside & Stryker, working in conjunction with the attorney for my insurance company, without paying them an extra fee? I would appreciate an immediate answer.

Very truly yours,
W. S. NEWELL.

May 4, 1922.

Dear Dr. Hunt:

I have your letter of May 4th enclosing letter from Dr. W. S. Newell of Syracuse, in which he inquires whether or not he is entitled to my services as counsel of the State Society in a malpractice case which is now being defended by another firm of lawyers who represent the insurance company with which Dr. Newell is insured.

This situation is constantly recurring and I find that the insurance companies apparently desire us to carry the load for them free of charge and in that way permit the State Society to defray the expense of a defense for which they legally are obligated to pay under their insurance policy. Furthermore, the form of agreement that the applicant for the State Society defense is required to sign contains the following:

"He renounces his own and places in the Medical Society of the State of New York full power to defend said action and look after his interests through its legal counsel."

Where a member is already being defended by another firm of attorneys for an insurance company, he cannot renounce his own power to defend in accordance with the provisions of this agreement without nullifying his insurance, so that he is in no position to sign the agreement which is required. Under these circumstances I do not believe the member is entitled, unless he so renounces his own power to defend, to call upon us for defense.

If the insurance company desires to retain us to defend that would have to be done under special arrangement between them and ourselves and in that event, I would not be acting as counsel of the Society.

Will you kindly acknowledge receipt of this communication and advise me if you do not believe that my position is sound. Upon receipt of word from you, I will notify Dr. Newell accordingly.

Very truly yours,

GEORGE W. WHITESIDE, *Counsel.*

Moved and seconded that the opinion of Mr. Whiteside as expressed in his letter of May 4th regarding Dr. Newell's request be approved. Carried.

The secretary read a communication from the Merchants' Association of New York inviting the State Society to hold its next meeting in New York City.

Moved and seconded that it be referred to the president with power. Carried.

The secretary read a letter from the New York State College of Agriculture in regard to the participation of the Medical Society of the State of New York in the work of a committee to outline ways and means whereby public opinion in rural communities may be created with regard to their needs.

Moved and seconded that it be referred to the Committee on Medical Economics. Carried.

The secretary read the following resolutions from the Medical Society of the County of Kings:

"Whereas, by the rejection of the New York State Medical Society Resolution opposing State Medicine and defining its reasonable limitations . . . and by the suppression, by the A. M. A. Reference Committee on Legislation and Public Relations, of a similar Resolution prepared by its own sub-committee and acceptable to the audience at the 'hearing' on State Medicine . . . and by the adoption of the 'substitute' resolution submitted by the Reference Committee on Legislation and Public Relations, as amended by the chairman of the Judicial Council of the A. M. A. . . . and Profession of Medicine in this country, through this act of its National Organization—the A. M. A. has been placed in the absurd and inconsistent position of being quoted by a Congressional Committee as 'endorsing and approving' a Bill recently enacted into a Federal law, which provides not one moment of medical

or nursing service, not one drop of medicine, not one ounce of food for an expectant mother, not one stitch of clothing for an expected child, and

"Whereas, that Federal law was propagandized as a 'Maternity Bill' and the officials of the A. M. A. and its officers had notice of its potentiality as a Birth Control measure which provided for the 'cattleizing' of the women of this country and the employment of a host of professional philanthropists, social service investigators, lecturers, statisticians, and the like, and the invasion of American homes by these people unless prevented by physical violence or an appeal to a Writ of Injunction, and, despite this knowledge and notice, the A. M. A. failed to appear at the hearings on that Bill and lend its voice and influence to the arrest of this vicious measure and misinterpretation of the Resolution adopted at the June, 1921, meeting of the A. M. A. at Boston, and

"Whereas, 'Information No. 97,' issued July 14, 1921, by the Federal Board of Vocational Education, expressly designates and authorizes the placement of ex-service men in training for the practice of Chiropractic in five (5) separate, so-called, Colleges and Schools of Chiropractic . . . and this Federal recognition and endorsement of Chiropractic has remained unchallenged by the A. M. A., and

"Whereas, the present president of the American Medical Association is a political appointee of the present National Administration, as Postmaster General and introduced at Boston last June, the propaganda of Brigadier General Sawyer (M.D.) for a department of Public Health and Welfare which would centralize and federalize the Practice of Medicine and the methods and means of caring for the nation's sick, and the education of the nation's children and the care of the nation's veterans of the recent World War, and politicize the nation's agencies of healing, education and gratitude, and

"Whereas, there is reasonable ground for the belief that the aforesaid Brigadier General Sawyer, M.D., will be proposed, at the St. Louis meeting of the American Medical Association, for election as 'president-elect' and that he holds his military rank and has exercised his faculties as surveyor and propagandist of a department of Public Health and Welfare by designation of the same present National Administration, therefore be it

"RESOLVED, that we demand the House of Delegates of the American Medical Association inform us why the American Medical Association has thus failed in its obligation of guardianship of the rank and file of the profession of medicine and the people, whom they serve, and we urge the House of Delegates to oppose with all power of their non-partisan American Medical Citizenship the nomination or election of Brigadier General Sawyer, M.D., as president-elect of the American Medical Association, to avoid even the color of criticism that the American Medical Association is a political adjunct or propaganda pawn of any partisan National Administration, and be it further

"RESOLVED, that a copy of this resolution be forwarded to the secretary of the American Medical Association, for presentation at its meeting in St. Louis, next month; to the NEW YORK STATE MEDICAL JOURNAL, and the American Medical Association, and to the public press.

LEWIS P. ADDOMS, *Secretary,*
Medical Society of the County of Kings.

May 1, 1922.

Moved and seconded that the resolutions be laid on the table. Carried.

Moved and seconded that the recommendation referred to the Council by the House of Delegates "that a conference of the chairmen of all the various standing committees be arranged to take place shortly after the formation of the committees in conjunction with a

meeting of the Council or of the Executive Committee, in order that a definite policy for the ensuing year might be developed, and the work of these committees be coordinated" be referred to the Executive Committee. Carried.

Moved and seconded that in accordance with the recommendations of the House of Delegates a committee be appointed to revise the Principles of Medical Ethics of the American Medical Association as revised May 7, 1903, and adopted by the Medical Society of the State of New York in 1906. Carried.

The president appointed the following committee: Drs. E. Eliot Harris, chairman; George D. Stewart, Samuel A. Brown, Walter L. Niles, William Darrach, Henry Lyle Winter and Grant C. Madill.

Moved and seconded that the recommendation referred to the Council by the House of Delegates "that definite action providing for causes which will subject a member to trial and expulsion and to embody that action in the new Constitution and By-laws," be referred to the special committee on the Principles of Medical Ethics. Carried.

Moved and seconded that the recommendation of the Speaker of the House of Delegates in regard to the abuse of medical charity, dispensaries, and pay clinics, be referred to the Committee on Medical Economics. Carried.

The secretary stated that owing to an oversight the House of Delegates had failed to elect censors in accordance with Article VIII, Section 1, of the new Constitution, and requested that they be elected by the Council.

Moved and seconded that the eight District Branch Councilors be elected Censors, in addition to the president and secretary of the Society. Carried.

The president presented the following report:

The Executive Committee takes pleasure in presenting the following report for approval by the Council:

Tentative Budget, May 1, 1922, to May 1, 1923:

Cash Balance, May 1, 1922..... \$12,971.00

RECEIPTS

1922 Dues, about.....	\$35,000.00	
1923 Dues, about.....	12,000.00	
JOURNAL advertisements and sales..	11,000.00	
Directory advertisements and sales	6,000.00	
Interest on bank deposits.....	500.00	
Clerical work	300.00	\$64,800.00

EXPENSES

Committee on Public Health.....	\$ 1,200.00	
Rent	1,600.00	
Counsel, including \$1,000 for assistant	13,200.00	
Auditor	200.00	
JOURNAL printing, commissions, wrappers, etc., 12 issues.....	15,000.00	
JOURNAL postage, 12 issues.....	1,000.00	
Directory printing, delivery, postage, commissions	11,000.00	
Legislative Bureau	5,000.00	
Committee on Medical Economics .	1,200.00	
Traveling expenses, general	1,000.00	
Traveling expenses, Delegates American Medical Association	1,100.00	
Salaries	10,460.00	
Honorarium, Secretary	500.00	
Annual meeting, about	1,200.00	
Telephone	150.00	
Stationery and printing, including application blanks and billheads for County Societies.....	900.00	
Incidentals, including typewriter inspection, water, ice, towels, telegrams, carfares, express, general office supplies, insurance		

\$77,771.00

and premium on Treasurer's Bond	500.00	
General postage	350.00	
District branches	500.00	\$66,060.00

SUMMARY

Cash Balance, May 1, 1922.....	\$12,971.00
Receipts, May 1, 1922, to 1923....	64,800.00
	<u>\$77,771.00</u>
Less expenses to May 1, 1923....	66,060.00

Tentative balance 11,711.00

The Executive Committee recommends that the compensation for legal services be \$1,000 per month for Mr. George W. Whiteside, Counsel, and \$100 per month for the attorney, subject to the acceptance of Mr. Whiteside, the amount to cover all legal expenses up to the first meeting of the Council following the annual meeting in 1923. It also recommends that Mr. Whiteside be requested to make a detailed written report of the legal status of each individual case and present to the Council from time to time.

The Executive Committee recommends the appointment of the following Committee on Publication: Drs. Nathan B. Van Etten, chairman; Edward Livingston Hunt, James N. Vander Veer, Arthur D. Jaques, and E. Eliot Harris.

The Committee also recommends that Dr. Nathan B. Van Etten be appointed Acting Editor.

The Executive Committee recommends the appointment of a committee to consider the change from a monthly to a weekly JOURNAL to report to the Executive Committee and that committee to report to the Council.

Arthur W. Booth, Chairman.

Mr. Whiteside requested that the portion of the report in regard to the compensation for legal expenses be amended by omitting the words "the amount to cover all legal expenses," as, he felt, this was only just in case there was a large increase in the number of cases presented for defense during the year. If the number of cases remained about the same as in 1921, the \$1,000 would be perfectly satisfactory to him.

Moved and seconded that Mr. Whiteside's request be granted and that the report be amended to read "the compensation for legal services be \$1,000 per month for Mr. George W. Whiteside, Counsel, and \$100 per month for the attorney, up to the first meeting of the Council following the annual meeting in 1923." Carried.

Moved and seconded that the report of the Executive Committee as amended be approved. Carried.

Dr. Bedell, president of the Third District Branch, stated that he had been requested to register a vote for his district against the publication of a weekly journal, especially on the basis of the great expense which would be incurred by such a publication.

Dr. Winter, chairman of the Committee on Medical Economics, presented the names of the following as members of his committee for approval by the Council: Drs. J. Richard Kevin, Edwin MacD. Stanton, George W. Kosmak and William H. Purdy. Moved and seconded that they be approved. Carried.

Dr. Vander Veer, chairman of the Committee on Legislation, presented the name of Dr. William Warren Britt as a member of his committee.

Moved and seconded that he be approved. Carried.

Dr. Vander Veer asked permission to wait to present the name of the third member of his committee until a later date. Moved and seconded that the request be granted. Carried.

Dr. Vander Veer also requested that a special advisory committee of five be appointed to assist the Committee on Legislation in its work.

Moved and seconded that the request be granted. Carried.

Dr. Van Cott, chairman of the Committee on Public Health, requested an extension of time before making nominations for his committee.

Moved and seconded that the request be granted. Carried.

Moved and seconded that the appointment of a chairman of the Committee on Medical Research to fill the vacancy left through the resignation of Dr. Sondern be referred to the president with power. Carried.

The secretary read a letter from Dr. La Salle Archambault of Albany, stating that he would be unable to accept the position as secretary of the Section on Neurology and Psychiatry, and requesting that his resignation be accepted.

Moved and seconded that Dr. Archambault's resignation be accepted. Carried.

Moved and seconded that the chairman of the Section on Neurology and Psychiatry be empowered to appoint a secretary to fill the vacancy left through the resignation of Dr. La Salle Archambault, if the appointment meets with the approval of Dr. Syms, chairman of the Committee on Scientific Work. Carried.

Dr. Irving H. Pardee was appointed secretary of the Section on Neurology and Psychiatry.

The president reported that he was not yet ready to report on the date and place of the next annual meeting.

There being no further business, the meeting adjourned at 4:45 P.M.

EDWARD LIVINGSTON HUNT, *Secretary.*

Board of Censors

The Board of Censors of the Medical Society of the State of New York after careful consideration of the protest of the Medical Society of the County of Orange referred to them by the House of Delegates at the Annual Meeting April 17, 1922, passed the following resolutions:

Whereas, there was brought to this body by the Reference Committee of the House of Delegates, session in Albany, April 17, 1922, the resolution of the Medical Society of the County of Orange, in which resolution it was stated that the Counsel of the State Society had ruled that Dr. Floyd H. Cook, a former member of the Orange County Medical Society, was not entitled to the protection afforded in a malpractice suit and that the ruling was unjust and illegal and recommending that the legal expense to which Dr. Cook was put in defending the suit should be paid by the State Society; and

Whereas, it appears upon an examination of the whole matter that Dr. Cook never personally made application for malpractice defense by complying with the resolution respecting such application and that the attorneys engaged by him did not give timely notice of the date when the cause of action arose or the probable date of trial of the same to the counsel of the State Society; and

Whereas, the counsel of the State Society when fully informed of the facts made offer of his services; and

Whereas, it appears that the action of the counsel of the State Society was proper in all respects in said matter and the strictures contained in the resolution of the Medical Society of the County of Orange with respect to his ruling are not warranted, therefore, be it

RESOLVED, that the Board of Censors sustain the action of the counsel in all respects in said matter and that a copy of its action be reported for publication in the MEDICAL JOURNAL of the State Society and likewise a copy be sent to the Medical Society of the County of Orange, together with a copy of the correspondence between counsel of the State Society and the attorneys for Dr. Cook and it be recommended to the Medical Society of the County of Orange that upon consideration of all these facts, that they take such action as they deem proper to remove the strictures upon counsel of the State Society contained in their original resolution.

EDWARD LIVINGSTON HUNT, *Secretary.*

County Societies

MEDICAL SOCIETY OF THE COUNTY OF NASSAU

SEMI-ANNUAL MEETING, MINEOLA,
TUESDAY, JUNE 6, 1922

As the last Tuesday of May was a holiday, the semi-annual meeting of the Medical Society of the County of Nassau was called to order in the Nassau Court House on June 6th. Dr. Benjamin R. Allison of Lawrence was elected to membership.

The attention of the Society was called to a hearing, called by the Nassau County Charter Revision Commission for Friday evening, June 23rd, to consider the advisability of recommending a County Health System for Nassau County. As it seemed advisable that the County Medical Society should be represented at this hearing, a committee, consisting of Drs. G. A. Newton and W. H. Runcie of Freeport, and A. D. Jacques of Lynbrook, was appointed to prepare a notice, to be sent to each member of the Society, of an adjourned meeting, to be held on Tuesday evening, June 20th, at which the County Health System may be discussed and the future action of the Society in regard to the matter may be determined.

It was decided, by vote of the Society, that the expenses of the Committee on Legislation shall be paid by the Society. The President was authorized to arrange for a dinner, in connection with the September meeting of the Society.

The paper of the evening was read by Dr. Charles Langdon Gibson, Professor of Surgery, Cornell University Medical College, upon Acute Perforations of the Stomach and Duodenum. The paper was interesting and instructive and called forth valuable discussion.

At the adjourned meeting, on June 20th, there was a larger attendance, and quite an extended discussion upon the advisability of recommending, in the name of the Society, to the County Charter Revision Commission, the incorporation of a County Health System, in the revised Charter for the County. Dr. Matthias Nicoll, Jr., Deputy State Commissioner of Health, was present and explained, quite carefully, the provisions of Chapter 509 of the Laws of 1921, amending the State Health Law and authorizing Boards of Supervisors to establish County Health Systems. Dr. Frank Overton, local Sanitary Supervisor, explained the advantages of a County System, such as may be established under the provisions of this amendment. The following resolution was then adopted, with one dissenting vote.

RESOLVED, that the Medical Society of the County of Nassau hereby recommends to the Nassau County Charter Revision Commission that the revised form of County Government to be prepared by the Commission shall provide for a County Health System, somewhat as outlined in Chapter 509 of the Laws of 1921; provided, however, that the present local Boards of Health and local Health Officers shall be retained; that at least three members of the County Board of Health shall be medical men, to be nominated for appointment upon the Board by the County Medical Society; and that authority to consolidate Health Districts shall not be given to the Board of Supervisors.

On further motion, the president, Dr. A. C. Martin of Rockville Center, was instructed to convey this action of the Society to the Hearing to be held on Friday evening, June 23rd.

After some further discussion, by resolution, the Society recommended that the Board of Supervisors of Nassau County take the necessary steps to establish a County Contagious Diseases Hospital, with a capacity of thirty beds, to be located in connection with some other hospital in the county.

Upon further consideration of the proposed dinner, at the September meeting, it was decided to include the ladies, as guests at this dinner, and a tax of five dollars upon each member of the Society, was authorized to defray the necessary expenses. It was also decided to take the necessary steps to increase the annual dues of the Society to ten dollars.

Dr. David C. Byrne of Great Neck, and Dr. Ralph E. Perry of Lynbrook were elected to membership.

MEDICAL SOCIETY OF THE COUNTY OF SARATOGA

SEMI-ANNUAL MEETING, SARATOGA SPRINGS, N. Y.
WEDNESDAY, MAY 31, 1922

The meeting was called to order at the McGregor Golf Club. The following were present: Drs. James N. Vander Veer, F. W. Sears, E. Godfrey, Jr., James S. Walton, George F. Comstock, Carl R. Comstock, Charles S. Prest, John B. Ledlie, C. J. Higley, Merritt E. Van Aernem, Frederick G. Eaton, Thomas J. Goodfellow, Miles E. Varney, John F. Humphrey, Frank Garbutt, Arthur W. Johnson, Frank F. Gow, James T. Sweetman, W. Van Doren, Louis A. Parmenter, W. F. MacDonald, Amos W. Thompson, Earl H. King, John R. MacElroy, Frank J. Sherman, Miles J. Cornthwaite, Ralph B. Post, Harry L. Loop, George S. Towne, Miss Bronson, Miss Paro, Mr. H. Smith and Burton D. Esmond, Assemblyman from Saratoga County. Drs. William B. Webster, Edward J. Callahan, Douglas C. Moriarta and Webster M. Moriarta.

After luncheon the president proceeded with the business before the Society.

On motion made and seconded and carried the reading of the minutes of the last meeting was dispensed with.

The application of Dr. C. J. Higley of Ballston Spa having been approved by the Board of Censors was presented and on motion the secretary was instructed to cast one ballot. This having been done Dr. Higley was declared elected.

Dr. George F. Comstock gave a brief address as Chairman of the County Legislative Committee.

On motion duly seconded and carried the Society endorsed Dr. vander Bogert's idea as to the benefits to be derived from a children's clinic to be held one evening during each week.

SCIENTIFIC PROGRAM

Dr. James N. Vander Veer, chairman of the State Legislative Committee, gave a very instructive paper on "Medical Legislation."

Burton D. Esmond, Assemblyman from Saratoga County, gave the legislator's opinion of certain medical bills and educational bills.

Motion was made, seconded and carried that in the future the county chairman on legislation instruct the chairman of the State Legislative Committee to draft and introduce any and all medical bills through the committee on public health.

Motion was made, seconded and carried that resolutions of sympathy and regret be made on the death of Dr. Herbert E. Baright, by Dr. Comstock on behalf of the Society and sent to Mrs. Baright and also spread on the minutes of the Society.

Motion was made and seconded and carried that the Society express its anxiety and sympathy to Dr. Zeh in his illness. Carried.

Motion was made and seconded and carried that the Society endorse the application of the Saratoga County Tuberculosis Committee to the Millbank Foundation with a view to the selection of Saratoga County for the demonstrations contemplated by the trustees of said fund and we pledge our unanimous, cooperation in bringing such a demonstration to a successful conclusion should the county be chosen for such a demonstration.

ESSEX COUNTY MEDICAL SOCIETY

SEMI-ANNUAL MEETING, ELIZABETHTOWN, JUNE 6, 1922

Meeting was called to order at 2.30 p.m., by the president, Dr. T. J. Dowd, at Deer's Head Inn. In the absence of the secretary, the president appointed Dr. H. J. Harris secretary pro tem.

Members present: Drs. Barton, Sr., Bond, Breen, Canning, T. J. Cummins, Dowd, Harris, McCasland, Noe, Sargent. Guests present: Drs. Beecher, Griffin, Maston, Munson and Schiff.

On motion, duly seconded and carried, the business session was postponed until after scientific program.

SCIENTIFIC PROGRAM

A Consideration of the Accessory Sinuses of the Nose, John M. Griffin, M.D., Glens Falls. Discussion Drs. Munson and Harris.

The Endocrines, C. H. Beecher, M.D., Burlington, Vt. Discussion by Drs. Griffin, Munson and Dowd.

Suspension—Traction Treatment of Fractures, L. G. Barton, M.D.; Sr., Plattsburgh.

Pathological Laboratory at C. V. Hospital, Plattsburgh, L. F. Schiff, M.D., Plattsburgh.

Diphtheria, W. L. Munson, M.D., Granville.

General discussion by all members present.

BUSINESS SESSION

Upon the suggestion of Dr. Schiff, the president appointed a committee to enlist the aid of the Board of Supervisors of Essex County for an appropriation of \$500.00 or more to pay for bacteriological and pathological examination of specimens sent to Pathological Laboratory at C. V. Hospital, Plattsburgh, by physicians of Essex County. Members named on this committee were Drs. Breen, Noe and Harris. The committee was instructed to secure data, interview the Supervisors and report to the Society at the fall meeting.

The name of Alexander Gersen was presented for membership and was referred to the Censors.

The president suggested that a symposium be given at the fall meeting by members of the Society and appointed a committee to select a subject and make the necessary arrangements. The committee to consist of Drs. Canning, Sargent and T. J. Cummins.

WAYNE COUNTY MEDICAL SOCIETY

SEMI-ANNUAL MEETING, SODUS POINT, JUNE 13, 1922

The meeting was called to order 11.15 a.m. by the president.

Members present: J. R. Sanford, E. A. Nevin, D. F. Johnson, J. N. Robertson, C. R. Jennings, G. D. York, E. W. York, C. H. Bennett, E. H. Lapp, G. D. Winchell, A. A. Young, E. E. Esley, S. W. Houston, W. G. Lewis, J. F. Myers, L. H. Smith. Visitors: B. C. Loveland, Syracuse; A. D. Kaiser, Rochester; R. H. Nichols, Lester, Mich.; W. Getzell, Wolcott; Arthur Besemer, Marion.

The minutes of the last regular and intervening special meetings were read and approved as read.

On ballot duly seconded and carried Arthur Besemer was declared elected to membership in the Society.

Dr. J. R. Sanford, committee on resolutions on the death of Dr. Ernest H. Wiedrich reported as follows:

Whereas, It has pleased the Almighty Father, in His Infinite and far-seeing wisdom, to remove from us, in the springtime of the year and in the early course of his manhood, our beloved brother, Ernest H. Wiedrich; and

Whereas, We found him in our professional relations conscientious and untiring, despite his failing strength, in performing those duties which in addition to his own, he willingly assumed, in the spirit of charity; an example of unflinching cheerfulness and solicitude towards all who met him in every relation in life. Therefore be it

RESOLVED, that we, his fellow members of the Wayne County Medical Society, take this occasion to express our affection and high regard for the brother who has passed ahead in the forward march of time. And be it further

RESOLVED, that a copy of these resolutions be sent to his family as an expression of our deep sympathy in their great loss, and that these resolutions be spread upon the minutes of this meeting in permanent record. Adopted.

Dr. C. P. Jennings reported four cases of typhoid fever in children seven years of age traced to one carrier.

After a recess for luncheon the following scientific program was presented:

Dr. Bradford C. Loveland of Syracuse read a paper on the care of mental cases before commitment. The doctor divided his subject into three sections: (a) Conditions requiring commitment to an institution; (b) The selection of a proper institution; (c) The care of the patient preceding admittance.

Discussion opened by Dr. Ethan A. Nevin.

Dr. Albert D. Kaiser of Rochester read a paper on "The Schick Test: Toxin-antitoxin." He gave a history of the subject and a practical method of its use by the general practitioner. He also advised the general use of the test and immunization in order to stamp out diphtheria.

Discussion opened by Dr. C. P. Jennings.

Dr. Arthur Besemer of Marion read a paper on "Weak Arches." He described the principal symptoms as pain or discomfort in the feet, back or legs. A good indication is to find the Tendo-Achilles deviated from the perpendicular. The most important part of treatment is the proper fittings of shoes.

A general discussion followed.

MEDICAL SOCIETY OF THE COUNTY OF JEFFERSON,

REGULAR MEETING, WATERTOWN, N. Y.,
TUESDAY, MAY 9, 1922.

The business session was called to order in the Black River Valley Club at 5 p. m.

After an adjournment for dinner, the following literary program was presented.

"Practical Points in the Prevention and Diagnosis of Communicable Diseases," Dr. C. R. Hervey, Oswego.

Discussion opened by Dr. F. G. Metzger, Carthage.

"Considerations Regarding Prophylaxis and Management of Chronic Infections of the Genito-Urinary Tract in the Male," by Dr. J. D. Olin, Watertown.

Discussion opened by Dr. M. MacG. Gardner, City.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

A TEXT-BOOK OF PRACTICAL THERAPEUTICS. With Especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By HOBART AMORY HARE, M.D., LL.D., B.Sc. Eighteenth Edition, enlarged. Octavo 1038 pages, 144 engravings and 6 plates. Phila. and New York, Lea & Febiger, 1922. Cloth, \$6.50.

A MANUAL OF CLINICAL LABORATORY METHODS. By CLYDE L. CUMMER, Ph.B., M.D. Octavo of 484 pages, illustrated with 136 engravings and 8 plates. Philadelphia and New York, Lea & Febiger, 1922. Cloth, \$5.50.

INDIVIDUAL GYMNASTICS. A Handbook of Corrective and Remedial Gymnastics. By LILLIAN CURTIS DREW. 12mo. of 225 pages, illustrated with 100 engravings. Philadelphia and New York, Lea & Febiger, 1922. Cloth, \$2.00.

HAYFEVER AND ASTHMA; CARE, PREVENTION AND TREATMENT. By WILLIAM SCHEPPEGRELL, A.M., M.D. 12mo of 274 pages, illustrated with 107 engravings and 1 colored plate. Philadelphia and New York, Lea & Febiger, 1922. Cloth, \$2.75.

THE PRINCIPLES OF BACTERIOLOGY. By A. C. ABBOTT, M.D. Tenth Edition, thoroughly revised. 12mo of 686 pages, with 121 illustrations. Philadelphia and New York, Lea & Febiger, 1921. Cloth, \$4.00.

THE MEDICAL CLINICS OF NORTH AMERICA. Volume 5, Number 6. Chicago Number. May, 1922. W. B. Saunders Co., Philadelphia and London. Published Bi-monthly \$12.00 per year.

A HISTORY OF THE NATIONAL TUBERCULOSIS ASSOCIATION. The Anti-Tuberculosis Movement in the United States. By S. ADOLPHUS KNOPF, M.D., National Tuberculosis Association, New York City. 1922.

THE WRITING OF MEDICINAL PAPERS. By MAUD H. MELLISH, Editor of the Mayo Clinic Publications. 12mo of 157 pages. Philadelphia and London; W. B. Saunders Co., 1922. Cloth, \$1.50 net.

THE PRACTICE OF MEDICINE. By A. A. STEVENS, M.D., Professor Applied Therapeutics University of Pennsylvania; Professor Therapeutics and Clinical Medicine Woman's Medical College of Pennsylvania. Octavo of 1106 pages. Philadelphia and London; W. B. Saunders Co., 1922. Cloth, \$7.50 net.

MANUAL OF THE DISEASES OF THE EYE. For Students and General Practitioners. By CHARLES H. MAY, M.D. Tenth Edition revised. With 377 original illustrations including 22 plates, with 71 colored figures. William Wood & Co., New York, 1922. \$3.50 net.

SMELL, TASTE AND ALLIED SENSES IN THE VERTEBRATES. By G. H. PARKER, Sc.D., Professor of Zoology, Harvard University. 37 illustrations. J. B. Lippincott Co., Philadelphia and London.

THE HEALTHY BABY, THE CARE AND FEEDING OF INFANTS IN SICKNESS AND IN HEALTH. By Roger H. Dennett, B.S., M.D. Professor Diseases of Children and Director of the Department New York Post Graduate Medical School; Attending Physician Babies Wards of the New York Post Graduate Hospital; Consulting Pediatrician to the Victory Memorial Hospital, Brooklyn; Fellow of the New York Academy of Medicine. Second Revised Edition. The Macmillan Company, New York, 1922.

APPLIED CHEMISTRY. An elementary Text-book for Secondary Schools, by Fredus N. Peters, Ph.D., Instructor in Chemistry in Central High School, Kansas City, Mo., for twenty-three years; more recently Vice-Principal; Author of "Chemistry for Nurses," etc. Illustrated. C. V. Mosby Company, St. Louis, 1922. Price \$3.50.

REPORTS OF THE ST. ANDREWS INSTITUTE FOR CLINICAL RESEARCH, ST. ANDREWS, FIFE. Vol. 1. Henry Frowde and Hodder & Stoughton, The Lancet Building, 1 & 2 Bedford Street, Strand, W. C. 2, London.

CHLOROFORM ANÆSTHESIA. By A. Goodman Levy, M.D., M.R.C.P., Physician City of London Hospital Diseases of Chest. With a Foreword by Arthur R. Cushny, M.D., LL.D., F.R.S., Professor Materia Medica, Pharmacology University of Edinburgh. John Bale, Sons & Danielsson, Ltd., London, 1922.

Book Reviews

CLINICAL ELECTROCARDIOGRAPHY. By **FREDERICK A. WILLIUS, M.D.**, Section on Clinical Electocardiography, The Mayo Clinic, Rochester, Minn. Octavo 188 pages, 185 illustrations. Phila. and London: W. B. Saunders Co., 1922. Cloth, \$5.00 net.

The patient of today has read and heard much about the electrocardiograph, and if he suffers from heart disease is very apt to have an electrocardiographic tracing in his possession. It therefore behooves the doctor, though he be no cardiologist, to know something of the principles involved, the mechanics, the indications for taking, the curves, and their diagnostic, prognostic and therapeutic indications.

Willius' book is one of extreme importance and should be widely read. He has made a thorough study of the subject and can speak from an authoritative point of view. Much is written concerning the arrhythmias, conduction lesions, and the tachycardias which fill in gaps in our previous knowledge as to their causation, interpretation, and treatment. Proper emphasis is laid on the abnormalities of the Q R S complex and the negative of the T wave in isolated and combined derivations, so as to be of great value in our prognostications of cardiac disorders. **MEYER A. RABINOWITZ.**

NUTRITION AND GROWTH IN CHILDREN. By **WILLIAM R. P. EMERSON, A.B., M.D.**, Professor of Pediatrics, Tufts College Medical School; President, Visiting Physician (in charge of Nutrition Clinic), Children's Out-Patient Department, Mass. General Hospital. Illustrated. D. Appleton & Co., New York. 1922.

Up to the advent of the book under consideration there has been a much lamented lack of an authoritative work which would bring together the many separate monographs and papers on the all-important subject of Nutrition in Children. We are now fortunate that such a volume has appeared, and doubly fortunate that, when it did appear, it came from the pen of the pioneer and recognized authority on nutrition. Not only was Dr. Emerson the first to take up in a systematic way the diagnosis and correction of malnutrition in children, and the organization of nutrition classes, but he was actually the first to recognize the existence of the definite symptom-complex or clinical picture of undernourishment. There can be no doubt that this book will be at once accepted as the classical authoritative work by all who are attempting to take part in the vast and formidable task of remedying the blight which has attacked one-third of all the children of this country, and of all so-called civilized countries of the world.

Dr. Emerson is a benefactor to these undernourished children quite as much by the writing and publication of his book, as he was before by his actual work of organization, clinical observation, and sound treatment. **W. H. DONNELLY.**

TUBERCULOSIS IN INFANCY AND CHILDHOOD. Lectures delivered at the Children's Hospital, Philadelphia, under the auspices of the Philadelphia Pediatric Society by **J. CLAXTON GITTINGS, M.D.**, Professor Pediatrics, Graduate School of Medicine, University of Pennsylvania, and **FRANK CROZER KNOWLES, M.D.**, Professor Dermatology, Jefferson Medical College and **Astley P. C. Ashhurst, M.D.**, Associate Professor Surgery, School of Medicine, University of Pennsylvania. 23 illustrations. J. B. Lippincott Co., Philadelphia, Pa., 1922. \$5.00.

This work is an attempt, on the part of the authors, to gather from many special works and from their own wide experience, a complete picture of tuberculosis, as it appears in children. While written by specialists (a pediatricist, a dermatologist, and an orthopedist), it frankly aims to supply the needs of the general practitioner, who of course sees the vast majority of the cases of tuberculosis in children.

Starting out with a brief historical sketch of our knowledge of the disease from earliest times, and an allusion to its widespread occurrence (from $\frac{1}{3}$ to $\frac{1}{2}$ of all adult individuals of the population are infected), Gittings points out that the death-rate is steadily declining, and that this decline antedated by four decades the beginning of the tuberculosis crusades. He discusses the much mooted question of the comparative virulence of the three types of tubercle bacilli (human, bovine, and avian), assigning by far the major role to the first. He takes up at considerable length the various avenues of infection, concluding his discussion as follows: "We find that most authorities concede to inhalation the first place in introducing infection, while the relative importance of ingestion, or lymphogenous transmission from the mouth, remains to be defined."

Under symptomatology, stress is wisely laid upon the early symptoms, especially those that are most easily overlooked, or confused with other diseases. Under the caption, "Tuberculin in Diagnosis," the various ways of employing Old Tuberculin as a diagnostic agent are described in detail; with a natural preference for the Pirquet method.

The volume constitutes a very readable as well as valuable reference work on a subject of considerable interest and great importance to those dealing with children. It should have a wide reading.

FRANK HOWARD RICHARDSON.

THE SURGICAL TREATMENT OF NON-MALIGNANT AFFECTIONS OF THE STOMACH. By **CHARLES GREENE CUMSTON AND GEORGES PATRY, M.D.**, Lecturers University of Geneva. Introduction by **SIR BERKELEY G. A. MOYNIHAN, K.C.M.G., C.B., M.S.**, Professor Clinical Surgery, University of Leeds. J. B. Lippincott Co., Philadelphia, Pa., 1921. \$5.00.

This work of Cumston and Patry will be welcomed by all Surgeons and Internists, who are especially interested in Gastro-Enterology. The Bibliography is most comprehensive and the manner in which the history of the advances in the surgery of the stomach is considered show into what detail the authors have gone to make this book of great value. Aside from all aid as a reference work, it is truly as it is stated in the preface, "a medico-surgical treatise on the subject."

The subject of Gastro-Enterostomy from the time of Woelfler (1882), to the present day is reviewed, with due emphasis placed on the advances in surgical technique and complications, and a complete discussion of the physiological principles underlying all these studies. Pulmonary complications and operative shock are considered in a special chapter, in association with the question of Gastro-Enterostomy.

On the question of Gastric Ulcer the authors have considered in detail the etiology pathogenesis, pathology in clinical types; a special chapter is devoted to operative indications. The Hemorrhagic Ulcer, the Resections, the Stenoses, the Perforated Gastric Ulcer, Gastric Dystopias, the Nervous Dyspepsias, Tuberculosis and Syphillis of the Stomach, Disturbances of Secretion and Traumatic Affections, are all discussed with great care, by these two surgeons, who surely have given attention not only to the surgical technique and history of the advances in gastric disease but have also considered the question from a medical standpoint.

There is an introduction by Sir Berkeley, G. A. Moynihan, which in itself speaks for the value of this work, as an excellent addition to the literature on "The Surgical Treatment of Non-Malignant Affections of the Stomach."

In the final paragraph of the preface one reads with interest the following statement, "the book represents the combined experience of an American Surgeon well versed in Continental methods and a Continental Surgeon fully conversant with Anglo-Saxon surgery and practice. This international team work is, perhaps, the most original part of the book."

IRVING GRAY.

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THE VALUE OF EYE OBSERVATIONS IN FRACTURES OF THE SKULL AND SEVERE HEAD INJURIES.*

By J. A. KEARNEY, M.D.,
NEW YORK CITY.

EYE observations are now regarded as an important part of a routine examination in every severe head injury and fracture of the skull. In many instances the findings aid in diagnosis, prognosis and treatment, and because an accident is usually responsible for a severe cranial injury, such data are often valuable from a medico-legal standpoint. Literature dealing with this subject is sparse and unsatisfactory. In this paper the writer endeavors to give an outline of the important changes occurring in and about the eyes and his conception of their significance as the result of observations made of 441 severe direct cranial injuries, all occurring in civil life, the major portion of which were diagnosed as brain injuries with or without a fracture of the skull. Of this number 232 were seen at the Polyclinic Medical School and Hospital, New York, in the service of Dr. William Sharpe, and 209 at Gouverneur Hospital, New York, in the services of Dr. A. E. Sellenings and Dr. E. L. Kellogg; also 480 children with cerebral spastic paralysis, with or without mental deficiency, were examined at the Polyclinic Medical School and Hospital, New York, in the service of Dr. William Sharpe. These spastic paralyzes in the majority of instances were traceable to injuries to the head at birth.

The usual eye examination employed for practical purposes in severe head injuries and fractures of the skull when the patient is semi-conscious or unconscious consists of inspection of the lids and tissues contiguous to them, the condition of the conjunctiva, shape, equality or inequality of the pupils, noting in millimeters the diameters, their reaction to light, direct and consensual, direct ophthalmoscopic examination of the media and eye grounds in minute detail, estimating the refraction with the ophthalmoscope at the same time. When the patient's condition permits, further examination of visual acuity, pupillary reaction to accommodative effort,

motility of the external ocular muscles and fields of vision for form and color may be made. Other refinements in the eye examination may be employed at this time, depending upon the studies one desires to make.

Changes in the shape, size and reflex activities of the pupils occurred not infrequently succeeding head injuries and might be observed at any time while under observation but these derangements usually disappeared. In a few discharged patients permanent pupillary inequalities were noted but in every such instance the pupils reacted equally to the usual stimuli. Pupillary changes *per se* were found of small value as an indication of excess intracranial pressure or localization of the seat of injury, but they have become an aid at times when taken into account with the entire clinical picture.

Pareses and palsies of the lids and external ocular muscles occurred quite commonly but none was observed as the immediate result of these head injuries. They were observed in the second and third week and even later following the accident and were found to be an aid at times in the localization of the seat of injury. Oculomotor pareses and palsies occurred most frequently, abducens pareses and palsies but seldom. In every instance they disappeared before the patient was discharged. The passing of these ocular pareses and palsies would indicate that a nerve block probably as the result of edema or hemorrhage rather than of a destructive process produced them. Diplopia occurred rather frequently, usually after the first week following the injury and it disappeared entirely in every case observed.

Retinal hemorrhages were seen occasionally and usually after the first week following the injury. The hemorrhages observed were slight as a rule, occurred in patches and were usually found in the retina on the nasal side of the disc and about one-half a disc's width from its margin. They appeared usually in both eyes and at about the same time. These hemorrhages eventually disappeared and the damage done to the retinal tissues as the result of them was seldom noticed by the injured.

A rise in the intracranial pressure, as the result of cerebral hemorrhage or edema, is usually one of the most damaging factors in cases of recent

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fractures of the skull. Because of the importance of determining the presence and degree of cerebral compression early, we will dwell more particularly upon this phenomenon and its effects as noted in the fundus oculi. It is only within the last ten years that changes observed in the eye grounds were utilized as an indication of cerebral compression in cranial injuries.

Dr. Harvey Cushing, in the Wesley M. Carpenter lecture delivered before the New York Academy of Medicine, October 18, 1906, upon "Consequences of Cranial Injuries," in the discussion of one of his cases reported in the paper, dealing particularly with the phenomena of compression, states: "One important observation was neglected in this case for not until the past years have I learned to appreciate, through close affiliation in my work with an expert ophthalmologist, that the routine examination of the eye grounds is as valuable in acute traumatic cases as in those of chronic intracranial disease. The neurologists and ophthalmologists unfortunately do not, as a rule, see patients soon after the reception of a cranial injury and the surgeon is rarely sufficiently expert with the ophthalmoscope to recognize the slight changes in the eye grounds which indicate the beginning degrees of choked disc."

In our series of head injuries the eye grounds only occasionally exhibited changes from the normal in those that were examined within the first twelve hours following the accident. The alterations observed were *commotio retinae* and exceptionally a pre-existing fundus dyscrasia that was quiet or active at the time. This early determination of the condition of the fundi, recorded in detail, is important as a basis for comparison should subsequent changes occur following the injury and also from a medico-legal aspect.

We align ourselves with the believers in the mechanical theory rather than with those holding the theory of toxicity as the cause of the dilatation of retinal veins and edematous extravasations occurring in and about the disc when intracranial pressure is elevated following cranial injury, because we have found such changes occurring rapidly in the great majority of cases with excess tension and regressing just as rapidly after the reduction of this tension.

The following is our understanding of the mechanical theory given tersely. The cranium is normally filled by brain tissue with its vascular system and cerebrospinal fluid. Encroachment by any agent foreign to its normal content will produce compression. Brain tissue itself is practically incompressible and a rise in the intracranial tension above normal presses the fluid contents in the cranial spaces onward into channels which are the extension of these cranial spaces outside the skull, when these channels are patulous. These extending channels are contin-

uous within the membranes of the spinal cord and vaginal sheaths surrounding the optic nerve trunks. The optic nerve trunk contains, besides the optic nerve, the immediate prolongations of the retinal veins and arteries and perivascular lymph vessels. Because venous and lymphatic vessels are readily compressible, venous dilations and edematous extravasations may be noted in the eye grounds quite early from stasis, as the result of pressure exerted within the vaginal sheaths enveloping the optic nerve trunks which extend to the globe. Spaces within the vaginal tunic are continuous with the sub-arachnoid spaces in the brain. Elevation of tension measured by spinal mercurial manometer at lumbar puncture is also noted early as the result of pressure effects transferred to the cord.

As the result of increased intracranial pressure edematous changes in the fundus of the eye occur generally in the following order: Upper margin of the disc where vessels cross it, nasal margin adjoining, lower margin of disc where vessels cross it, nasal margin adjoining, balance of nasal margin, nasal half of disc, temporal half of disc, temporal margin. Following these, the edema of the entire disc increases and exceptionally its elevation is measurable with the ophthalmoscope. Upon the reduction of intracranial pressure the edema usually disappears in the reverse order to its formation. A measurable edematous elevation of the surface of the disc by the ophthalmoscope was noted a few times but at no time resembled the mound-like appearance of a characteristic choked disc.

When recent cases of head injuries are examined for the first time—*i. e.*, within twelve hours after admission—there is usually observed either a normal fundus or occasionally general retinal edema, blurring equally all the eye ground details slightly, and at times obscuring the usual landmarks (*commotio retinae*). This retinal edema may be the result of concussion which probably temporarily deranged the vasomotor system controlling the retinal blood vessels. Frequent and careful observations are made while these patients are in bed. In cases uncomplicated by an increase in the intracranial tension, the previously normal fundi show no untoward changes and in the instance of previously observed eye grounds where a general retinal edema was observed at the first examination, this edema gradually subsided.

In the routine examinations after the first twelve hours following the accident, we noted in the fundi that were previously found to be normal, that occasionally the retinal veins were dilated out of proportion to the calibre of the accompanying arteries and associated usually with an edematous haziness of the upper margin of the disc, where the vessels cross it, and the nasal margin adjoining. In the cases where there existed a general edema blurring all fundus de-

tails equally at the first examination, we noted occasionally an added edematous obscuration of the nasal half of the disc and its margins. These observations are most valuable because they are usually some of the earliest indications of a rise in the intracranial pressure and just as soon as possible after their detection the measurement of the pressure of the cerebrospinal fluid at lumbar puncture by the spinal mercurial manometer should be done to determine its extent. In nearly every such instance an increase in the tension of the cerebrospinal fluid above normal was recorded. Infrequently there is seen in some of these cases, an edema occupying the entire surface of the disc, the elevation of which is measurable with the ophthalmoscope. In all of these the cerebrospinal fluid was found to be under much higher tension than normal. A decided increase in the edematous extravasation when noted in and about the optic nerve head from one examination to another indicates a rapid rise in the intracranial tension and antedates, as a rule, other signs and symptoms of cerebral compression that result from this rapidly elevated tension.

Minute observations of the fundus oculi throughout are of the utmost importance and the direct method of ophthalmoscopy is therefore preferable to the indirect method. By the indirect method it is impossible to get so good detail. A perfect acquaintance with the normal fundus picture in detail and a knowledge sufficient to detect the usual untoward changes in the media and the edematous, inflammatory and degenerative processes in the eye grounds is essential beforehand; as any observation made without this knowledge is of small value. The slightest haziness as the result of edematous extravasations from increased intracranial tension is more discernible at the margins of the disc than elsewhere in the disc and retina adjacent and for this reason is detected earliest in this location.

The extent and amount of edematous change observed in and about the region of the optic disc, the recorded degree of pressure of cerebrospinal fluid at lumbar puncture, the symptomatic evidences of compression upon the cerebral cortex, temperature, pulse, respiration, blood pressure and the general condition of the patient in a given case are prime factors which must be taken into account in deciding the character of procedure the condition requires. Where pronounced medullary compression symptoms, as marked slowing of the pulse, and slowed and arrhythmic respirations are observed and edematous changes are noted in and about the optic nerve head at the same time, a spinal puncture record of compression becomes unnecessary in arriving at a decision of operative procedure.

There were no stab nor bullet fractures in the series and the head injuries were all the

result of direct trauma and were usually fractures of the base and only occasionally of the vault. In one of every six of the severe head injuries examined, we noted the retinal veins dilated out of proportion to the calibre of the accompanying arteries and associated with edematous blurrings of the disc and its margins at some time in our observations.

Fractures of the skull are always associated with brain injury of some character. In three instances the roentgenograms revealed distinct fractures of the base of the skull with only clinical signs of commotio cerebri, that passed away in a short time, and no further complications arose while under observation. In some of the head injuries the roentgenograms revealed no fracture and latterly there developed symptoms of cerebral compression that equaled and in some instances exceeded those exhibiting fractures. Some of the cases of basal fractures in which an extensive hemorrhage and cerebrospinal fluid exuded from the ears at the time of injury (virtually a "natural" decompression) developed, none of the signs or symptoms of an increased intracranial pressure while the fracture wound remained patulous.

The severely traumatized head injuries are usually admitted in a state of shock and while they are in this state, naturally there is no intracranial hypertension and therefore no pressure signs are to be seen in the fundus oculi. In the moribund this state continues and the patient does not recover. Should they react, they usually do so as soon as the general arterial pressure rises sufficiently to equalize the cerebral arterial pressure. If the resulting brain injury is such as to produce excessive intracranial tension, signs may be expected to be seen in the eye grounds in the length of time it takes that given pressure to produce them.

Intracranial hemorrhage at birth is responsible pathologically for 70 per cent of the spastic type of paralysis in children and 20 per cent of the resulting idiocy and feeble-mindedness now existing. With the knowledge of these statistics, it is a prime consideration of the present-day obstetrician whether to perform an abdominal section in selected cases or to allow the woman to enter into labor. If he decides that labor should take place, then every means must be employed to facilitate it so that any injury to the infant's cranium and its contents be minimized.

In spite of all the modern perfections in accouchements there will occasionally occur a case in which the obstetrician in charge may be convinced that grave injury has been done in the infant's intracranial tissues whether instruments were or were not used in the delivery. In this event, every sign and symptom should be studied most carefully as soon as possible after the birth of the child to determine any untoward neurological phenomena that might result.

In the event of intracranial hypertension as the result of the presence of a small amount of cerebral hemorrhage, a fullness of the retinal veins in the first few days after the birth of the child or later on additional edematous blurrings more pronounced on the nasal half of the disc and its margins may be observed. However, when massive intracranial hemorrhage occurs, in addition to the engorgement of the retinal veins, gross edematous changes may take place quite early, a measurable edema confined to the nasal half of the disc or a measurable edema of the entire disc (*papilledema*). If these gross eye ground changes are noted and at the same time there is an increase in the pressure of the cerebrospinal fluid determined at lumbar puncture by the spinal mercurial manometer, whether or not convulsions and other signs and symptoms are recorded, an appropriate measure to reduce this hemorrhage should be decided upon and employed. All suspected infants should have, as soon as possible after birth, repeated and careful ophthalmoscopic examinations of the fundus oculi for evidences of a possible increase in the intracranial tension.

Dr. William Sharpe, in his recent book, "Diagnosis and Treatment of Brain Injuries," states: "All newborn babies, whether the labor is apparently a normal one or whether it is a difficult one, with or without the use of instruments, if the child does not appear to behave as it normally should by being rather drowsy or stuporous and surely in the presence of convulsive twitchings, or if it should be a "blue" baby, then careful ophthalmoscopic examination should be made and repeated lumbar punctures, if necessary, to determine the pressure of the cerebrospinal fluid and the presence or not of blood in it. It is only by this means that a large number of babies having an intracranial hemorrhage at the time of birth will be diagnosed early and the appropriate treatment of spinal drainage or the cranial decompression and drainage instituted early."

The eye ground findings in our series of cerebral spastic paralyses examined, with or without mental impairment, were interesting. In the spastics traced to maldevelopment of the embryo the optic discs were not infrequently found to be somewhat smaller than normal, the surfaces markedly pale throughout, margins clearly defined. The vessels were usually attenuated but were proportionate as to calibre. Pupils were semi-dilated and not responsive to light stimuli. The movements of the eyes in some of them were curious. They seemed to wander incessantly, one eye would move in one direction, the other in another direction, rarely ever concomitantly. Other signs of malformation, cleft palate, harelip, supernumerary fingers and toes were occasional accompaniments. No signs of intracranial hypertension were noted in the eye grounds nor at lumbar puncture and naturally

no operative interference was indicated in these cases.

The spastics that could be traced to birth injuries or to meningo-encephalitis occurring in infancy and sometimes later, had had spasticity for some time in the majority of cases observed and in these later spastic conditions, when an operation is indicated, great benefit is not to be expected as the result of it especially when the spasticity is of long standing. The ideal time for operative procedure is within several days after birth when the supra cortical hemorrhage can be drained off in fluid form. The operative risk has proven to be as slight at this time as in later life—not over ten per cent. Examination of the eye grounds of the children in whom the spasticity had lasted for some time revealed not infrequently variable regressive edematous changes in and about the optic disc.

We deduce that general rather than localized cerebral compression was present in the severe head injuries examined because the edematous changes occurred usually in the fundi of both eyes equally. Only occasionally one eye would exhibit slightly more extravasation than the other. The visual acuity was reduced in a few instances, and then only slightly, as the result of the accident in the injured that were observed.

The greatest hope of restoration to normal or nearly normal function in any of these stricken individuals from severe head injuries depends upon early knowledge of untoward cerebral conditions and early employment of judiciously selected procedure to relieve them. An increase in the intracranial pressure is probably the most damaging factor and for this reason we are coming more and more to utilize minute readings of the fundus oculi by direct method ophthalmoscopic examination because of the very early registration of dilated retinal veins and edematous extravasations which may be seen in and about the optic nerve head as the result of this heightened tension.

THE RELATION OF CERTAIN OCULAR AND CEREBRAL CONDITIONS TO INFECTIONS IN NOSE AND THROAT.*

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THE consideration of focal infection as a cause of disease in various parts of the body has been an important development in medicine of recent years. This has very much increased the relative importance of some of the specialties. It has added a scientific import to the work of the oral specialist, and has changed the function of the nose and throat specialist from that of a spray artist to an important counsellor

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in the diagnosis of many diseases. His sphere of activity is in the most fertile field of focal infections and demands the exercise of all that a man hath of judgment and skill in diagnosis and treatment. The full importance of the examination of the upper respiratory tract is not as entirely recognized by members of the profession as it should be, even yet. One may still see many mistaken diagnoses of lesions in other parts where infected sinuses were responsible for the whole phenomena. I have known two cases diagnosed, cerebrospinal meningitis where the sphenoid sinuses were producing all the symptoms. I could mention many other such mistaken diagnoses, but that is not the subject of my paper.

There is perhaps no group of specialists that has more fully recognized the importance of focal infection than the oculist. Many of them have, perhaps, gone to the other extreme, and expect to find the cause of nearly all the pathological conditions of the eye in infections of the nose, teeth or tonsils. The proximity of the nasal sinuses to the orbit renders this field of infection more productive of eye diseases than more remote foci. The first of these conditions I would mention is one well known to all, in which pus from the ethmoids ruptures externally through the orbital plate. This produces exophthalmos, with swelling of the eyelids. The pus in these cases has always been outside the orbital capsule, in my experience, and while it may cause a good deal of fixation of the eyeball from pressure, there is usually considerable muscular action left. If these cases are getting some drainage through the nose and the eyeball is not markedly pushed forward and fixed, it is wise to leave them alone, beyond using means to facilitate nasal drainage. The eye grounds in these cases are not affected, whereas in thrombosis of the cavernous sinus, which may occur from a severe ethmoid infection there is exophthalmos with slight movement and marked chemosis and engorgement of the retinal and orbital veins. Cavernous sinus thrombosis is a rare phenomenon from ethmoiditis or sphenoiditis. I have seen four cases from a boil on the vestibule or upper lip, but none from a sinusitis.

Let us now consider some conditions in the eye structures themselves; and I would mention first retrobulbar neuritis. This strange phenomenon is caused by some affection of the posterior sinuses. What that affection is nobody seems to know. Many of these noses seem perfectly normal, and as far as one can see the sinus cells, when opened, appear normal, and yet the neuritis clears up. This type of neuritis may occur, however, with a chronic purulent sinusitis, and I have seen one case where it occurred with an acute purulent condition. This leads me to believe that there is always a purulent infection in the cells or cell proximal to the nerve. If one examines many cadavers he will find the optic

nerve runs through the antero-external angle of the sphenoid, or through a posterior ethmoid cell in quite a number of cases. The covering of the nerve is as thin as an eggshell. Now, given such a condition, a slight retention of infected secretion may cause an inflammation to spread through the bones by direct continuity and set up a neuritis. This cell may discharge its contents in a short time, but the neuritis may not subside until serious changes have occurred in the nerve. We often see a frontal sinus annoy a patient for years, with headache every few weeks, which may only last a day or two, or even a few hours, and yet produce no obvious gross pathological changes. The escape of a little discharge of which the patient is not conscious may relieve the headache. There has been no evidence of a hyperplastic ethmoiditis in these cases that I have seen, though it might easily be an associated condition in some instances.

The eye conditions which are produced by focal infections in the sinuses include almost everything from conjunctivitis to retinitis. There is, perhaps, nothing distinctive about eye lesions from absorption of pus, whether it comes from sinuses or tonsils, or a pus focus in other parts of the body. One may be in doubt, sometimes, in regard to the etiology of the eye condition after operative treatment of the sinuses, but once you establish complete drainage the eye condition will clear up in time. A brief reference to a case will illustrate this. A man afflicted with iridocyclitis for over a year was operated on by me last September. The operation was done intranasally, and as both sides were affected I opened every sinus in his head. He improved for a time, then began going back. I thought I had good drainage. However, I had him x-rayed, with applicators in each side of his nose, going in to the back wall of the sphenoids, as I supposed; but to my surprise I found both applicators went into a large left sphenoid, which extended past the midline. The right sphenoid was more to the right and below. I opened this and found a deep cavity. I continued after-treatment by irrigations five months, the discharge remaining quite copious from ethmoid and sphenoid regions. His nose would start clearing up at times and as it did, the eye would improve. Then an exacerbation with increased pus in the nose and the eye would flare up, I decided to open him externally to more thoroughly eradicate the cells or open some which might have been missed by the intranasal operation. A few days before the date fixed for the operation he seemed to start with one of his periods of improvement. I at once cancelled the operation, and to my surprise this time his progress has continued, until now, six weeks later, his nose is almost free of pus and the eye is making steady recovery, with vision slowly returning.

The moral of this is not to look for quick re-

sults and be discouraged when you do not get them. Establish the best possible drainage, and give it a chance. Treat them as you would a tuberculous patient, and put them on absolute rest, out of doors, if necessary. More of them should be treated that way, where eye complications are present. After all, tuberculosis is only a focal infection, but is treated much more intelligently than the others.

In regard to the tonsils as a focus causing eye conditions, I have not had much experience. I have seen episcleritis from this cause, also corneal ulceration, but the more grave conditions I have never observed, although no doubt they do occur. Pus in a middle ear, without proper drainage can produce the same things as pus in the other sinuses. I say other sinuses because the middle ear and mastoid can be called an accessory sinus, but, simply because the eustachian tube is a little longer than the naso-frontal duct, that particular sinus is relegated to an assumed unique position in human anatomy and pathology, and all its pathology and treatment presided over by a group of learned and unlearned specialists, designated as Aurists, who usually forget that there may be other sinuses involved with the middle ear, and may be taking considerable part in producing the pathological picture. I know of a jugular being tied, when a sphenoid should have been opened. I also know of a case where I removed the tonsils and was thinking of opening nasal sinuses for an episcleritis with hemorrhage into the nitreous, when pus was present in an ear, after a radical mastoid, cleaning out the focus in the ear caused a rapid recovery from the eye symptoms. A fairly common eye symptom from sinusitis is muscular asthenia. This may be partly a local phenomenon, or in frontal sinusitis and ethmoiditis there is probably some periostitis about the pulley of the superior oblique which accounts for an imbalance in muscle action. A toxic effect might also account for some cases.

Of the true ocular motor palsies which occur from sinusitis the external rectus is by far the most common. The sixth nerve palsy from a sphenoiditis is not an unusual phenomenon. The fourth may sometimes be affected and rarely the third. I have never seen the third alone involved in the sinuses, but have seen it in combination with the fourth or the sixth, and in one case all three together.

We now come to cerebral manifestations in sinus disease. The minor affections, such as drowsiness and lethargy, are very common. Dizziness is also a frequent symptom, sometimes very marked in acute sinusitis, due perhaps to a rapid blockage of the eustachian tube, or a toxic action in the vestibular nerve. The grave cerebral complications, namely, meningitis, encephalitis, epidural abscess, and brain abscess all occur from infections of the sinuses. Meningitis from acute sinusitis is very rare, unless some enter-

prising surgeon has invaded the field. Symptoms resembling a basilar meningitis do occur from an acute sphenoid. I know of two cases where an acute sphenoiditis was diagnosed cerebral spinal meningitis, and afterwards came under my care for a sinus operation on account of eye symptoms. A high temperature, with severe pain in the back of the head, occasionally with delirium, may look very like a meningitis, but if the nose is well shrunken up a small stream of pus may be seen trickling from the sphenoid opening, or the symptoms may suddenly clear up with a sudden flow of pus into the throat, which a patient may not tell you unless you are on the lookout for it. An acute sphenoid can account for quite a number of cases of severe threatening illness, which suddenly seem to abort in a day or two. An acute exacerbation of an old chronic sinusitis may set up a meningitis, but this also is rare, unless complicated by an operation.

Epidural abscess is quite frequently found with necrosis of the posterior wall of the frontal sinus, or it may be present with a very small opening in the posterior bony wall. These cases are usually not suspected and are found during the course of a radical operation. The abscess may extend into the frontal lobe, and be draining through a small opening in the bone, through the frontal sinus into the nose, or external fistula may be present. Such conditions are rarely diagnosed from clinical symptoms. I remember one case of abscess showed very plainly on the X-ray plate, taken to show the condition of the frontal sinuses.

Encephalitis, resembling encephalitis lethargica, or a basilar syphilitic lesion, may come from an old sphenoiditis with necrosis of the posterior wall. Such a case came under my care during the past year. The patient made an apparent recovery after operation, but relapsed and died about three months from the onset. Such a complication of sinusitis may possibly be overlooked and diagnosed as true encephalitis lethargica. It may be fairly stated that the pathology and complications of inflammatory processes in the nasal sinuses are the same as the pathology and complications in the mastoid cell, and we can learn the pathology of the former from the easier observation of the latter. Thus there are suppurative processes which are mainly confined to the lining membrane of the cells, and which may undergo complete resolution. Or there may be more severe infections in which the bony septa are quickly destroyed. This may go on to resolution, the formation of granulation tissue and ossification, provided there has been some drainage.

In the mastoid these cases are nearly all operated on, and I think they should be in the nasal sinuses, when once it is determined that resolution without structural change is not going to take place. They may become quite free of dis-

charge for certain periods, but still remain a menace and intra-cranial or serious eye conditions may develop at any time. The intra-cranial complications of mastoid suppuration are more common than from the nasal sinuses, for the probable reason that drainage is not as good in the former as in the latter. The localization of the complication is somewhat different. Thus, a meningitis from a sphenoid is apt to be basilar in type, and a brain abscess from the frontal sinus is situated in the frontal lobe.

In conclusion, I wish to emphasize the importance to rhinologists of using all available means in diagnosis of sinus disease, when grave complications are threatened. The X-ray is a great help. Repeated examinations of the nose, with cocaine, and especially a careful history, should be taken. One may often elicit the history of some obscure, undiagnosed illness, or a long hang-over from a cold, which marked the onset of a disease to which they have long since been oblivious, but which, nevertheless, had meant the initiation of a pathological process which is still going on.

SURGICAL TREATMENT OF CRANIAL AND INTRA-CRANIAL INJURIES.*

By JOSEPH E. J. KING, M.S., M.D.,
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CLASSIFICATION.

CRANIAL and intra-cranial injuries, in regard to treatment, are primarily classified as 1. *recent*, and 2. *old*.

RECENT INJURIES.

In classification of these cases, the following clinical grouping of the injuries, for the most part stated by Eagleton in a recent paper, serves the purpose admirably from the standpoint of treatment.

- I. *Concussion*.
- II. *Contusion*.
- III. *Fracture of Skull*.

A. *Simple fracture*.

- 1. *Simple linear*.
 - a. Without brain symptoms.
 - b. With symptoms of compression.
- 2. *Simple depressed, with or without symptoms*.

B. *Compound fractures*.

- 1. *Compound linear*.
 - a. Without brain symptoms.
 - b. With symptoms of compression.
- 2. *Compound depressed, with or without brain symptoms*.

This classification is not absolute, but as soon as a patient is admitted to the service, one mentally places him or her, almost at once, in one of these groups. The condition may change in a few hours to a few days, which will necessitate a change in the treatment. However, as soon as a patient, suspected of having suffered cranial or intra-cranial injury, or both, is admitted, one classifies the injury in one of the above groups for the time being, and must institute treatment accordingly.

With the exception of the violent cases of injury in which immediate operation is imperative, or those in such severe shock, in which no operative procedure is advisable, the following routine should be carried out in all cases:

1. *Lumbar Puncture*.—This procedure, in my experience, has never produced a fatality or an untoward effect in an acute post-traumatic condition. In order to ascertain if the cerebro-spinal fluid is bloody, or not, and to definitely determine the pressure of the fluid with a mercury manometer, only a very small amount of fluid need be removed. The presence of blood in the fluid, unless due to injury of the spinal sub-dural vessels by the needle itself, is indicative of sub-dural (sub-arachnoid) hemorrhage, into the sub-arachnoid space or into the ventricles. It is frequently associated with fracture of the skull, though not necessarily so. An extensive sub-dural hemorrhage may be present, associated with bloody fluid, which later becomes almost colorless or straw-colored, due to the fact that the blood clots become partially organized, and become sealed off, so to speak, from the remainder of the sub-arachnoid space. Such an instance has been recently observed. Extra-dural hemorrhage alone does not give bloody cerebro-spinal fluid unless there is laceration of the dura and arachnoid. The pressure of the fluid should be accurately estimated by the use of the mercury manometer, and not be guessed at by observing the number of drops per minute or the distance to which the fluid will spurt. The manometer reading will indicate whether or not the fluid is under increased pressure, and, if so, will help, together with other signs and symptoms, in determining the kind of treatment to be advised. Increase of the intra-cranial tension as recorded by the manometer may be due to intra-cerebral, —cerebellar, or spinal hemorrhage or oedema; hemorrhage or sub-dural, extra-dural, sub-arachnoid or sub-pial; ventricular hemorrhage; increased secretion of cerebro-spinal fluid; or depressed fracture of the skull. Lumbar puncture, in fact, as a therapeutic means, may, in a large percentage of cases, be the only surgical procedure to be advised.

2. *Determination of Blood Pressure and Pulse Rate* should be done every hour and sometimes more often—until it is ascertained whether there

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is a persistent rise in the blood pressure or a slowing of, or increasing of the pulse rate or not, or if there is irregularity of the pulse rate. Frequent repetition of this procedure will also assure a more constant observation of the general condition of the patient by the examiner. A gradual marked increase of the blood pressure and an associated marked slowing of the pulse are indicative of severe compression, with medullary involvement. Immediately following the injury, the blood pressure, if not normal, is low, especially in the severe injuries associated with shock. The pulse may be normal, but is usually increased in rate in cases of more or less severe injury, averaging between 80 and 100. There may be normal pulse and blood-pressure even in extensive lesions, *e. g.*, sub-dural hemorrhage; such a case having been recently observed.

3. *Neurological Examination.*—The neurologist should make an early, and then a repeated, examination until a diagnosis has been made, and treatment advised. For record, a guide such as was used in the neuro-surgical services in the army, is of great value in making and recording routine examinations.

4. *Radiographic Examination.*—This should be made in every case except those in severe shock. Even cases which will obviously be operated upon, should have radiographic plates made with the portable machine, if there are justifiable reasons for not moving the patient to the X-ray room. The plates can be developed while the patient and operating room are being prepared. Extensive fractures may be demonstrated, even in cases not associated with marked symptoms. In others, the extent of the bony lesion may be accurately determined. In cases showing compression from extra- or sub-dural hemorrhage, there may be disclosed a fracture line on the opposite side of the skull from that which is the site of a contusion, hematoma, laceration, etc., and so decide the site at which the operation is to be performed. A negative X-ray finding does not necessarily exclude fracture, however. Fissured fractures of the base and in some instances of the vault, may be demonstrated only at autopsy, and even then there may be difficulty in observing it.

5. *Ophthalmological Examination.*—In every case in which there is suspected intra-cranial injury, early and repeated examination of the fundi should be made until the diagnosis has been made. In our experience, papillœdema has not been present in the early stages (first few hours) following cranio-cerebral injuries. When marked it is a late sign of the injury. Frequent repeated examinations may show moderate choking of the discs several days following the injury. We observed a case in which there was an extensive

sub-dural hemorrhage, in which the operation had been deferred more than two weeks. The examination of the fundi showed moderate choking, 1.5 D. The general condition of the patient was that of one "not doing well." A sub-temporal decompression was performed, with removal of the clot. Although the patient's general condition immediately improved and continued to improve, his condition becoming and remaining that of a patient who is "doing well," the examination of the fundi subsequently showed an increased papillœdema.

6. *Otological Examination.*—Though probably not so important as the ophthalmological, in the early cases, should be made. Those cases, in which there is bleeding from one or other ears, or in which there has been injury to the temporal bone, should be carefully and repeatedly observed by the otologist, in the event of infection from this source.

Treatment in General.—If the patient is not in shock, all lacerated wounds of the scalp should be excised at once. Should there be no fracture, the clean cut scalp edges should then be loosely approximated with interrupted sutures, with a small rubber drain sutured in an angle of the incision (this is removed after 48 hours) and wet dakin gauze dressing is applied. This usually assures a primary healing of the wound, with the danger of cellulitis, abscess, etc., practically eliminated.

Should an examination of the skull reveal a linear fracture without symptoms, the fracture can then be converted into a simple fracture. Should there be a linear fracture with symptoms, or a depressed fracture, it can be dealt with accordingly.

In all of these debriding operations, dakin solution on sponges, or as an irrigation, has been continuously used, preceded by a swabbing out of the wound with tincture of iodine when the operative field is prepared.

Regarding intra-cranial procedures it is advised that one should assume a *conservative* attitude, and by so doing it is believed that better results will be obtained than if one operates too frequently.

Operation is imperative: (1) In those cases of persistent increasing intra-cranial pressure and should be done in the early stages before there is medullary involvement. Where one waits until there is a very slow pulse, high blood pressure and marked pulmonary embarrassment, one is then inviting disaster. (2) All compound fractures, linear or depressed-basal fractures with bleeding from the ears, nose, etc., being excluded, should be operated upon as soon as the general condition will permit. (3) The majority of cases showing irritative or paralytic focal symptoms should be operated upon. However, there will always be cases in which it will be difficult to

decide, after all sides of the question have been considered, whether operation should or should not be done. The general appearance and condition of the patient may often help to determine the decision, *i.e.*, whether he is or is not, "doing well" or "looking well," where other factors may remain the same.

Anesthesia.—Local anesthesia, if any is required, is preferred in all cases except with children. Chloroform is here preferred.

It is my opinion that, in all of the cases in which operation is not advised, and in which there is an increased intra-cranial pressure, as shown by the lumbar puncture and manometer, and also in the "border-line" cases, repeated lumbar punctures should be made, with withdrawal of 10-20 c.c. of fluid, or until the pressure is reduced one-half or to normal (about 6 mm.), the amount depending upon the monometric reading, and the blood pressure taken before and after the puncture. This puncture should be repeated every 12-24 hours if the intra-cranial pressure remains at a rather high stationary mark, 12-25 m.m. or more. As the intra-cranial tension becomes less and less, the punctures should be made less frequently.

Lumbar puncture has been very useful in a number of cases, as a therapeutic means. It is well known that prolonged marked increased intra-cranial pressure is followed by a flattening of the convolutions, anemia of the brain, decreased absorption of cerebro-spinal fluid in the sub-arachnoid space due to its partial or complete obliteration, all of which tend toward a fatal termination by medullary compression. Theoretically, therapeutic lumbar puncture should be done in the class of patients indicated, and clinically it has proved of value.

All cases, except those of concussion only, should be kept in bed for at least four weeks and some longer. The residual symptoms are much less pronounced if the patient remains quiet for a long period of time, and refrains from work, either mental or physical, and excessive heat, or noise.

CONSIDERATION OF THE SEPARATE CLASSES OF INJURIES

Concussion.—These cases need no special surgical treatment other than that which is mentioned above. If there is an associated lacerated wound of the scalp, the wound is excised.

Contusion.—These cases, as a rule, require no surgical treatment. Therapeutic lumbar puncture may be indicated.

Simple Linear Fractures.—Without neurological symptoms, are treated as stated above—prolonged rest in bed.

Simple Linear or Fissured Fractures.—With symptoms of compression, should in most cases be treated conservatively, repeated lumbar puncture

being advised. This applies whether the fracture line is of the base of the vault. Should the patient's condition not improve, but the intra-cranial pressure continues to increase the patient is noisy or stuporous, there are focal irritative or paralytic signs, and his general condition is not improving, operation is advised, for the purpose of removal of the blood clot and decompressing effect. In a majority of these cases, if there are not definite localizing signs, a sub-temporal decompression should be done. If radiographic plates show the line of fracture traversing or invading a temporo-parietal region the decompression should be made on that side, provided there are no focal symptoms referable to the opposite side, either right or left. Otherwise, the right side is chosen. If the hemorrhage is extra-dural, the clots are removed and the bleeding vessels ligated. If not, the dura will appear darkened or bluish, due to the presence of a sub-dural clot, or accumulation of blood. The dura is then incised, by a crucial incision, and the blood evacuated. The bleeding vessel should be found and ligated or clipped. If the hemorrhage is recent, and the blood is still soft, it will not be necessary to make a large opening in the bone, as the blood can easily be removed through an opening the size of a fifty-cent piece, by careful sponging with wet cotton sponges and irrigation with saline. In older cases, in which the clot has become partly organized, the opening in the skull should be wide so as to allow ample room for gentle and systematic removal of the clot. It may be so firmly attached to the dura or inner table of the skull or both as to necessitate removal with a blunt curette or a curved brain spatula. One should not wait, however, long enough for organization of the clot to take place. Whether the dura should be closed or not, depends upon the amount of increased intra-cranial pressure following removal of the clot. In most cases, it is believed, that the dura can and should be closed with safety, depending upon subsequent lumbar punctures to keep the intra-cranial pressure reduced if necessary. Some special points in connection with the operation itself should be emphasized. (1) The elevation of the pericranium and temporal muscle should be carefully done so as not to tear the muscle away from its origin. This may inadvertently or carelessly be done by an assistant pulling on a retractor if proper precaution is not given. (2) The opening in the skull should be made low, well beneath the muscle, and large enough to allow of sufficient exposure. (3) The muscle, fascia and scalp should be carefully closed in layers with interrupted sutures of silk, so as to give a firm covering over the bony defect—especially so if the dura is not closed.

Should no sub-dural or extra-dural clot be found and there is sufficient evidence to make one

believe that one is present, a decompression should be made over the opposite sub-temporal region, provided the condition of the patient will allow of its being done.

Simple Depressed Fractures.—Except some occurring in babies or children should, in my opinion, be operated upon. This belief is all the more impressed upon me after having observed the marked residual symptoms—sometimes late focal—occurring in the large number of skull fractures seen in the Public Health Service—old cases which were injured during service. The depression of the outer table may be but slight while the crumpling in of the inner table may give marked pressure on the brain, with laceration of the dura, or brain, substance, or both. Intra-cranial trauma cannot be judged by the amount of depression of the outer table. The blood clots, either extra- or sub-dural, are removed and bleeding points ligated. The dura, if lacerated, should be closed. In this type of case, with extra-dural hemorrhage and with no, or but little, injury to the brain substance, the late, as well as the immediate, results are best.

Compound Linear Fractures.—Without neurological symptoms should be operated upon, the wound excised and the fracture converted into a simple fracture by closure of wound, when the compounding wound is in the scalp. This should be done in *all* cases. In basal fractures, with bleeding from the ears, nares or pharynx, all care should be taken to prevent coughing, sneezing, or blowing of the nose. Such acts encourage extension of infection to the intra-cranial space, resulting in meningitis. Urotropin in large doses should be given, although, as Dr. Cushing states, the efficacy of this drug in preventing meningeal infection has not been definitely proved.

Compound Linear Fractures, with Symptoms.—Include more cases of the "border-line" type than any other group, so far as determining whether intra-cranial operative procedure should be done or not. It goes without saying that the wound should be excised and the condition be converted into that of a simple fracture. Repeated lumbar puncture should be done with manometric reading. If the intra-cranial pressure shows persistent increase, operation should be done at once before the terminal signs appear. To wait for Cheyne-Stokes respiration, very slow pulse, very high blood pressure, and papilloedema, in my opinion, is to be strongly condemned. However, should the patient be in such condition when he is admitted to the service, he or she should immediately be operated upon, and given the only chance, though it may be slight, of saving life.

Bleeding from the ear, although a source of great danger, may be of real benefit in certain cases in that it provides or affords a decompressing effect. Such a case was observed in the service at Bellevue Hospital. This patient, a wagon

driver, was struck and thrown from his seat to the street. He was immediately brought to the ward in a dazed condition. The examining ward surgeon reported considerable hemorrhage from the left ear, and also escape of brain substance through the external auditory canal. This proved to be the case upon examination. There was about 1 drachm of brain substance in the external ear and rather profuse continuous bleeding, in such quantity, had it not escaped, would have demanded immediate operative interference for relief of compression. Although the patient, after admission, showed a definite aphasia, had a convulsion affecting both arms and legs, and semi-comatose condition alternating with excitability, there was no evidence of increasing intra-cranial pressure. The drainage of blood and cerebrospinal fluid from the left ear continued for several days and provided sufficient decompressing effect. Therefore operation was not advised. The patient's condition gradually improved and after twelve days left the hospital against our advice. When seen about six months later at the follow-up clinic, he complained only of dizziness upon sudden change of position and partial deafness in the left ear. Subcutaneous emphysema following fracture through the frontal sinus has not required surgical treatment in our cases.

In those cases in which air has found its way through the fracture line into the ventricle or brain tissue, ventricular puncture, or puncture of the brain substance has been advised by some surgeons, but it is doubtful if any benefit is derived from the procedure, following evacuation of the air alone. In all cases of meningitis, repeated lumbar puncture with intra-spinal injection of the anti-meningococcal serum has been routinely done. It is still doubtful whether a simultaneous ventricular and lumbar puncture, with a through-and-through irrigation is of benefit, although some writers have reported good results from such a procedure.

Compound Depressed Fractures.—Demand immediate operation if the patient is not in shock. If so, the wound should be swabbed out with iodine, a dry gauze dressing should be applied for control of hemorrhage and absolutely no other procedure other than those for combatting shock should be done. The patient should be left absolutely alone and not moved, until the condition of shock has disappeared. As soon as the patient's general condition has improved, he should be immediately operated upon—preferably within six hours. If there is need of any anesthesia, local (novocain with suprarenine tablets) is preferred for young patients and adults, and chloroform for children. In the latter group of cases only a small amount of chloroform will be required. The incision or incisions should be made according to the location of the fracture and the

scalp wound. Every other consideration should be disregarded in order to obtain adequate exposure of the site of fracture. The exposure should extend well beyond the site of depression, so that proper exposure can be obtained in order to allow of unhindered, rapid, and thorough debridement of the wound with removal of bone fragments, foreign bodies, extra- or sub-dural blood clots, and pulpified brain substance, if the cortex has been injured. In the placing of the incision or incisions, the cosmetic effect is only of secondary consideration.

In brief, the following procedure is carried out in a usual case, but individual modification of details will necessarily have to be made in certain cases: The entire head is shaved, prepared with full strength tincture of iodine, and the wound is swabbed out with the iodine sponge. The incisions in the scalp are made as the occasion demands, beyond the wound in the healthy scalp, creating two, three or four flaps. The outer thickness of the scalp is dissected up without entering the potentially infected field, until well beyond this field, where the flaps include the entire thickness of the scalp, leaving the pericranium attached to the outer table. A wide exposure is insisted upon. When the entire site of depression is exposed, a circumscribing incision is made through the pericranium and the pericranium is rolled inward. One or more openings are then made with a Hudson bone drill in the skull along the line of incision in the pericranium and the entire area is circumscribed with a Hudson bone rongeur of the De Vilbiss type. Thus a complete extirpation of the major portion of the potentially infected tissues, consisting of scalp, galea, and a mosaic of bone, is removed. During the entire procedure, the operative area is sponged and irrigated with Dakin's solution. Extra-dural blood clots are removed. If the dura is lacerated, the torn edges of the dura are excised, bone fragments and adjacent foreign bodies are removed. Should the brain substance be pulpified, the substance is removed by suction and irrigation through a soft rubber catheter. Hemorrhage from the brain substance, if present, is controlled. For irrigation, Dakin's solution is likewise used. No ill effects have been observed from its use, and it unquestionably has an immediate bacteriacidal action. If the dura can be closed by sutures, it should be done with interrupted sutures of fine chromic catgut. If not, I have used a free transplant from the pericranium or aponeurosis for the purpose of closing over the dural defect. The area is thoroughly sponged off with Dakin's solution, and the incision (or incisions) are closed. Interrupted through-and-through sutures of black silk are used. There is usually but little need for additional ligatures or suture ligatures to

control the bleeding points. Most of the bleeding or oozing occurs from the free scalp edges, which will be practically entirely controlled by the sutures which approximate the edges of the scalp. The tendency to infection is thus lessened. A small rubber drainage tube, which extends only just through the scalp, is sutured into each angle of the incision, all being removed after forty-eight hours. A small wisp of gauze wet in Dakin's solution is inserted just through the scalp between every second or third suture, and is removed after twenty-four hours. The entire head is covered with gauze flats and head rolls wet in Dakin's solution, including the lower jaw to prevent the patient removing the dressing, and is held with bandage and long adhesive strips. The dressing is changed every six hours for five or six days, at the end of which time one can fairly well ascertain if the union will be by primary intention or not. Should the excision of the infected scalp be so extensive that the edges cannot be approximated, it is advised that a pedicle scalp flap be swung over so as to completely cover the cranial defect produced, and allow of suture. The denuded pericranium from which the flap was removed can readily be covered two weeks later with Thiersch grafts. Should the fracture site be adjacent to and involving the air sinus, mastoid, frontal, ethmoids, etc., the wound is not completely closed, but is loosely closed about strips of gauze—Dakin's and iodoform—which are packed against or into those sinuses and left for six to eight days, until communication with the sinuses has been well walled off. Each time the dressing is changed, the gauze packings are moistened in the depths with Dakin's. In case of gun-shot injury with retained missile, it is not advisable to attempt its removal at the time of operation for the compound depressed fracture, if the missile is far distant from the site of the fracture, which would necessitate craniotomy at another site. This should be deferred until the patient has recovered from the original injury, if it is to be removed at all. Should it be necessary to reduce increased intra-cranial pressure to prevent herniation of the brain through the fracture site, lumbar puncture on the table is to be advised rather than a ventricular puncture through a probable infected field. This has not often been necessary, as the brain bulk is usually reduced in the cases operated upon early.

By giving careful attention to these details, good results have been accomplished. There has been no immediate death following operation for a compound depressed fracture. Following secondary operation, in which I have performed the first operation, two deaths have occurred. One patient died on the tenth day following operation. He was doing well up to the seventh day,

and it was believed that he would recover, when he developed pneumonia. Autopsy revealed a left lobar pneumonia with a large accumulation of serous fluid in the right pleural cavity. There was no evidence of meningitis or other intracranial damage which was responsible for his death. The service should be provided with donors at all times, so that an immediate transfusion of blood may be done if necessary.

OLD CRANIAL AND INTRA-CRANIAL INJURIES.

These cases may be divided into the following:

1. Old compound fractures, with discharging sinus.
2. Old simple or depressed fractures with residual symptoms.
3. Cranial defects. (Brain abscess will not be considered in this paper.)

1. *Old Compound Fractures, with Discharging Sinus.*—All of the wounds should be dressed daily with Dakin gauze dressing. After several days, six or seven, the sinus should be excised and the infected bone exposed. Loose pieces of dead bone should be removed. No attempt should be made to remove the exposed necrotic margin of the bone unless it has already become detached, except to allow of more adequate drainage. It is impossible to determine the extent to which the bone should be removed, and if the margin is removed, there will in all likelihood be subsequent partial necrosis which will delay the closure of the wound. Should there be a small sinus (or sinuses) extending into the brain, this is evidence of a retained foreign body—large or small. Sometimes a very tiny piece of bone fragment will keep a sinus discharging for months. The sinus should be gently and carefully explored with a small eye-curette, and the foreign body thus gently teased out. Even following this procedure I have seen an elevation of temperature on the following day to 104 degrees, with vomiting, etc. These attacks are probably due to a localized recent meningitis. Usually in two to three days, the attack subsides and the patient feels well. I have never seen a fatality following this procedure. The sinus should not be probed, nor roughly curetted. This process may have to be repeated, due to failure to remove all of the small pieces of bone or foreign bodies. I have seen a patient in whom a sinus failed to close after more than two years, in spite of repeated cranial and intra-cranial procedures. Old compound depressed fractures connected with the frontal sinus oftentimes run a long chronic course. After the wound has thus approximately been debrided (a complete radical operation such as is performed for an old osteomyelitis or sinus of the long bones, etc., is not recommended in these cases), it is left open, packed with Dakin gauze and the wound is irrigated

through tubes fastened with adhesive strips to the scalp, every two hours. The scalp is well protected with vaseline gauze. I have used this in frontal wound as well as those located in other regions, without injurious effect to the eyes. After the bony margins are covered with healthy granulations, a scalp plastic should be performed, and the area covered. This is the form of treatment used by me in the neuro-surgical services in the army at Cape May and Fox Hills and U. S. P. H. S. Hospital No. 38, and it has consistently given good results.

2. *Old Simple or Depressed Fractures with Residual Symptoms.*—There have been so many ill-advised operations for these residual symptoms, with but little relief. It is still doubtful whether one should operate or not. These symptoms have been repeatedly observed in the rather large number of ex-service men treated in the Public Health Service Hospitals. We have consistently advised against operation for general symptoms, *e. g.*, headache, dizziness, epileptic seizures, etc.

We have, on the other hand, operated upon several cases of markedly depressed fracture. In some instances, the inner surface of the inner table was smoothed off along the line of greatest depression, with a considerable amount of new bone or callus, arranged in ridges or masses, pressing on the dura. In others, bony projections, $\frac{1}{4}$ to $\frac{5}{8}$ of an inch long have been found, hanging from the inner table like stalactites, having perforated the dura and grown into the brain cortex. Pieces of isolated living bone fragments near the surface of the cortex have been removed. Dural cysts have been evacuated.

The procedure followed during these operations was suggested to me by Dr. McGugan. A straight incision is made over the depressed area, sufficiently long to properly expose the area, scalp edges are dissected up and held with two self-retaining Frazier cranial retractors. An incision is made through the pericranium to the outer table of the skull, horse-shoe shaped, with the base towards one angle of the incision. With an osteotome and mallet a pericranial-osseous flap consisting of the outer table together with a considerable portion of the entire thickness of the skull, is turned up, in the same manner in which a pericranial osseous transplant is removed for repairs of cranial defects. The flap, however, is much thicker. The roughened inner table, with the bony projections, is then removed with rongeurs. The dura should be opened, and if cysts are found, they should be evacuated, the wall should be removed, as much as is possible, and the remaining portion of the cyst wall should be thoroughly cauterized with pure carbolic acid, followed by alcohol. Should there be bone fragments in the cortex, they should be removed. The dura is then closed.

The bone-pericranial flap is placed in position and the pericranial edges are sutured. This flap is not depressed, as it rests upon the bevelled margin of the opening made in the skull. The local condition is comparable to a repaired cranial defect. The incision is closed, with drainage, to allow for escape of ooze and prevention of an hematoma.

The cases operated upon in this manner have been very much improved. It is a question yet to be determined whether the improvement will be lasting or not. The longest interval which has elapsed since operation is in the case of a nurse who was operated upon two years ago. A large dural cyst was found and treated as described above. She has remained much improved up to the present time. The operation is not a serious one. There have been no fatalities or untoward sequelae in any of the operative cases.

The only permanent associated cranial nerve palsy which is amenable to surgical treatment by the neuro-surgeon is that of the facial nerve. In such a case, a facial-hypoglossal nerve anastomosis should be done.

3. *Cranial Defects.*—This subject was fully covered in a paper by the writer in 1919, as well as in papers by Frazier, Coleman, Kerr, Bagley, Primrose, and others on this side. The oseo-pericranial, or-periosteal transplant still remains the transplant of choice. Primrose advised the use of the costal cartilage graft. The former method proved to be satisfactory to the surgeons who had a more extensive experience with this work in the army hospitals, and they continue its use in civil practice.

In civil practice, cranioplasty will likely prove to be followed by better results than in the military service, owing to the following factors: First, the patients are operated upon earlier and therefore a better chance for primary healing of the wound is obtained. This in turn allows of an earlier repair of the defect before the cicatrix and adhesion about the defect have become too firm.

Second, there is a relative greater proportion of simple depressed fractures with loss of bone substance than in the military service. These cases, in which there is an extra-dural hemorrhage, without severe brain damage, and laceration of the dura, are the most ideal for cranioplasty.

Third, conversely, there is a smaller percentage of patients associated with through-and-through gun-shot injuries and other destructive brain lesions, which result in marked gliosis and mental deterioration.

In 1920, a heavy-set motorcycle policeman was admitted to the Lawrence Hospital, Bronx-

ville, N. Y., about twenty minutes after he had sustained a large simple depressed fracture of the right temporo-parieto-frontal region, with extra-dural hemorrhage giving symptoms of marked compression. There was no severe injury to the brain and only a small incomplete laceration of the dura. The resulting bony defect was oval and measured about two by two and one-half inches. The patient remained in the hospital about two and one-half weeks, and was discharged to his home, with instructions to rest and remain quiet. He was readmitted to the hospital after about three months, without symptoms. His only complaint was that his cap band pressed on the site of the defect and annoyed him. A cranioplasty was performed, the defect being closed with a periosteal-osseous transplant taken from the tibia. After two and one-half weeks he was discharged, sent to the country to rest for a short while, after which he returned to Bronxville, where he has been on active duty on the police force since this time.

This operation has been performed by me in over fifty cases, without a fatality. No graft has ever become absorbed, and the defects have remained firmly closed.

The *contra-indications* for cranioplasty are:

1. Sepsis or recent infection. The operation should be delayed at least six months following the complete healing of a grossly infected wound, on account of the danger which may result from latent infection.

2. Retained foreign bodies. We have consistently advised against cranioplasty until a considerable time has elapsed following the removal of the foreign bodies, on account of the possibility of late abscess formation about the missile. When the foreign body is located in an accessible region, where gross damage to the brain will not be inflicted by its removal, it should be removed. Several months following its removal, the defect may be closed. Should the foreign body be located in an inaccessible position, deep within the brain substance, or where its removal should be attended by gross damage to the brain, it should not be removed. In such an event, the defect should *not* be closed.

3. Persistent increased intra-cranial pressure. The operation is not advised for the purpose of relief of gross organic brain lesions, manifested by hemiplegia monoplegia, hemianopsia, aphasia, epileptic seizures, and so forth. It is not believed that these conditions are affected in one way or the other by cranioplasty.

(NOTE—The opinions and conclusions presented in this paper are based on observations made in cases treated in the Reserve Lazarett, Oppeln, Silesia, Germany; Neuro-Surgical Services, at Cape May, Fox Hills, and U. S. P. H. S. Hospital No. 38, New York; on the Second (Cornell) Surgical Division, Bellevue Hospital; and in the Lawrence Hospital, Bronxville, New York.)

THE SIGNIFICANCE OF PAPILLOEDEMA IN BRAIN TUMORS.*

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DESPITE the marked progress that has been made in the recognition of intra-cranial conditions, in the localization of brain lesions, in the study of hydrocephalus and in the interpretation of intra-cranial pressure, the early diagnosis of brain tumors is often very difficult and not infrequently impossible. In many cases one is compelled to wait for the advent of marked signs and symptoms of intra-cranial pressure before one ventures a diagnosis or urges surgical interference. By the time the general symptoms, such as severe headache, vomiting, dizziness, marked choked disk and organic mental changes make their appearance the patient is in a moribund condition, frequently past the hope of surgical intervention. This usually holds for unlocalized tumors and not infrequently for localized lesions. We have come to depend so much upon choked disk as a sign of tumor and a guide to treatment that we usually refrain (except in tumors situated in certain areas) from doing anything until the papilloedema indicates that either life or vision is threatened.

There is no question, of course, that choked disk is at present the best single, general sign of brain tumor. It is found in from 65 to 80 per cent of cases and its occurrence in any patient is said to be significant of brain neoplasm in 90 per cent (Oppenheim). But the fact is that choked disk is most often a late sign. It is obvious that despite its great value it cannot serve as the best early indication for treatment. Unless we can learn to recognize it before it reaches a measurable degree of several diopters other signs must be looked for as guides for early diagnosis and treatment of brain tumors.

With a view of gaining a better insight into the subject I have recently undertaken a study of all the brain tumor cases which have been on the services of Drs. Bernard Sachs and Charles A. Elsberg in the past few years. There were more than two hundred cases with the general diagnosis of brain tumor, but I have discarded a great many because of uncertain clinical manifestations. This left 140 cases in which the clinical diagnosis was most probable. Of these, 48 were verified either at autopsy or at operation (33 of the former and 15 of the latter). Of the 140 cases 101, or 71.5 per cent, showed choked disk; in the verified cases the percentage was 75. In 34 instances the papilloedema was unequal on both sides, the difference ranging from one to

three diopters. In few instances there was choking on one side and none on the other, but contrary to Horsley's statement that choked disk appears most often on the side of the tumor, in the series studied this was not found to be the case. Forty-five of the cases could not be localized at all and 43 of these had choked disk, which means that the diagnosis of tumor was based mainly on the fundus changes. In very few of the cases studied did the papilloedema have other than a general value in the diagnosis and in numerous instances a positive diagnosis could be made without it.

SIGNIFICANCE OF PAPILLOEDEMA

Ordinarily papilloedema is said to be significant of increased intra-cranial pressure. This pressure is commonly gauged by means of spinal puncture, by X-ray of the skull, which shows either the markings of the convolutions or the distant effects on the sella and clinoid processes, by the appearance of the brain and dura at operation, by intraventricular puncture and symptomatically by headache, vomiting and choked disk. But there are cases with verified tumor of the brain and choked in whom few or none of the signs of intra-cranial pressure can be demonstrated. Conversely there are cases with verified tumors which show signs of intra-cranial pressure and no choked disk. There are also verified tumor cases which show neither choked disk nor signs of intra-cranial pressure. Finally, there are cases with choked disk not due to tumors. Internal hydrocephalus is frequently invoked to explain the last class, but, without going into detail as to variety of conditions in which choked disk appears, it may be sufficient to point out that choked disk may occur without any evidence of internal hydrocephalus.

It may be further pointed out that large tumors are occasionally found at operation or autopsy, which infiltrated the brain or greatly encroached on the cranial contents and yet showed neither signs of intra-cranial pressure nor choked disk. It is evident therefore that increased intra-cranial pressure does not altogether explain the papilloedema, nor is it always significant of brain tumor. The toxic theory of Leber invoked to explain papilloedema is even less satisfactory, though it is still resorted to in few instances. The explanation of direct mechanical pressure on the optic nerve at the optic foramen or through the supra-optic canal (Tilney) is more tenable and more generally accepted.

It is now commonly held that it is not so much intra-cranial as increased intra-ventricular pressure that is the cause of choked disk; which explains why even large tumors which encroach on the cranial contents may exist for a long time without giving changes in the fundi. The tumor, then, must press on the aqueduct of Sylvius, third

* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 19, 1922.

† From the Neurological Service of Dr. B. Sachs and the Neurosurgical Service of Dr. C. A. Elsberg at the Mt. Sinai Hospital, New York City.

ventricle, fourth ventricle or close up the foramina of Magendie and Luschka, or in some way block the flow of the cerebrospinal fluid out of the ventricles, to cause internal hydrocephalus—the obstructive hydrocephalus to which Dandy has directed attention. And it is indeed true that tumors in those neighborhoods do most frequently give choked disk. But it is equally true that some of them do not and that others which are situated, say, in the frontal or parietal or temporal or occipital lobes and do not give internal hydrocephalus nevertheless do cause choked disk. It may further be mentioned that there are cases of internal hydrocephalus without choked disk, as the following case will show:

A. A., aged 20, was admitted to the Mt. Sinai Hospital on January 8, 1922, and died suddenly two days later. She was normal up to within one year of admission when she began to complain of headaches, vertigo and pain in the eyes. Amenorrhœga also set in. The symptoms became progressively worse. The patient was somewhat acromegalic, she showed increased deep reflexes with bilateral Babinski and left-sided ataxia. There was no choked disk. Autopsy showed obstructive hydrocephalus due to a gliosis at the caudal end of the aqueduct of Sylvius. The obstruction was complete. The third ventricle was dilated and pushed downward into the interpeduncular space, obliterating the tuber cinereum and corpora mamillaria.

Numerous other cases of internal hydrocephalus could be cited which showed no choked disk. The explanation usually offered is that the gradual onset and progress, often extending over a period of years, permits of some adaptation and prevents the occurrence of papilloedema. Against this, however, may be mentioned the fact that many brain tumors which keep on growing for months and years to large size, equally permit of gradual adaptation and yet ultimately produce choked disk.

In a very intensive study of the subject, Jacques Bollack* concluded that it is dilatation of the third ventricle which is the cause of the choked disk, as he found the ventricle dilated in 18 out of 27 autopsied cases. In every case which showed the dilatation there had been choked disk. He also found dilatation of the foramen of Monro in nearly every case with papilloedema. To explain numerous exceptions he points out that just as hypertension in the ventricles may not (yet) mean dilatation, so dilatation need not mean hypertension. The latter explains the absence of choked disk in congenital hydrocephalus. Bollack also states that the older the stages of choked disk the more likely is the dilatation of the third ventricle and foramen of Monro. The

question, however, is, does the stage of choking correspond to the age of the tumor? It is known of course that long continued choked disk leads to objective disturbances of vision.

Despite the frequently obvious connection between internal hydrocephalus and choked disk it is evident that we cannot always invoke the one as to the cause of the other. Nor can we always rely on papilloedema for the diagnosis of brain tumor. Conversely, we should be able to make a diagnosis of brain tumor without choked disk. This implies the need of other equally reliable diagnostic signs. The recent work of Dandy on ventriculography, although so far brilliantly successful only in his own hands, promises a method of diagnosis which will be of value not only in localization but in the early detection of tumors. Cushing and Walker in their articles on field and color defects in brain tumors, state that early lesions can be recognized long before there are visible ophthalmoscopic changes. There is further need of distinguishing more precisely early optic neuritis from early choked disk. While this is occasionally very difficult, especially when the papilloedema is barely measurable, effort must constantly be made to delimit sharply the two ophthalmoscopic pictures. So, too, confusion must be avoided from the interchangeable use of the terms papillitis, optic neuritis and papilloedema or choked disk. Too many neurologists and not a few ophthalmologists still use the terms indiscriminately.

PAPILLOEDEMA AS A GUIDE TO TREATMENT

The brief review of the facts concerning the significance of papilloedema in brain tumors is not an attempt either to exhaust the subject or to solve the problem, but to call attention to the difficulties which stand in the way of treatment. If we are unable or unwilling to make a diagnosis of brain tumor without the presence of choked disk it means that we are unable to vouchsafe surgical intervention at a time when it can do most good. The surgical mortality of brain tumor cases is so high late in the course of the disease that to wait for advanced signs of choked disk frequently means to sacrifice the only chance of recovery that the patient has. The following two cases may serve to illustrate this point:

S. P., aged 10, was brought in with the complaint that he had been vomiting for six weeks and that he had difficulty in walking for one week. On examination he showed a tilt of the head to the left, chin turned to the right; the gait was ataxic, on a broad base. He tended to fall to the right. He showed ataxia of the right extremities, right adiodachokinesis and dysmetria. The speech was scanning and explosive. The deep reflexes were very lively, more so perhaps on the left, the right abdominals were diminished and there was a right Babinski. The cranial

* Bollack, Jacques: Rapport entre le stase papillaire et la dilatation des ventricules au cours des tumeurs cérébrales. Thèse pour le doctorat de médecine, 1918-19, Paris.

nerves showed normal fundi, weakness of the right external rectus, slow horizontal nystagmus to the right and left and rotary nystagmus vertically. The right corneal reflex was diminished. Hearing was normal.

He was sent to the hospital where the diagnosis of probable right cerebellar or cerebello-pontine angle neoplasm was made. Unfortunately he showed no choked disk and his symptoms improved. After several weeks' stay in the hospital it was decided to wait with surgical intervention until more signs and symptoms, especially choked disk, would make their appearance. He came to operation three months later when a large right-sided, irremovable tumor was found. Now it may be unfair to say that the tumor would have been removed had he been operated on his first admission, but it is not unfair to insist that his only chance lay in the early diagnosis and early treatment. What is important, however, is that the absence of choked disk deterred us from undertaking the treatment which the clinical signs so plainly indicated.

Another case is that of H. S.,* aged 45, whose illness dated back eighteen months when it began with buzzing in the left ear, then impairment of hearing, later herptic eruptions on the left side of the mouth, subsequently pain in the left side of the face and facial paresis, finally weakness of the left leg and tendency to fall to the left. On examination he showed mild horizontal nystagmus, more marked to the left, no pupillary, ocular or fundal changes, left facial weakness, anesthesia of the left sensory trigeminal (of a segmental character, which led to the suspicion of an intrapontine lesion) impaired bone and air conduction on the left, absent caloric responses of the left vertical semicircular canals and very faint response of the horizontal canals. He showed no disturbances of coordination, only slightly of the gait. There was a definite right and suspicious left Babinski. On account of the doubt as to the localization of the lesion, whether intra or extra pontine and mainly because of the absence of choked disk nothing was done until one year later when the fundus showed marked swelling. Then an irremovable cerebellopontine angle tumor with a cyst overlying it was found at operation, and the patient died the next day.

Again it is possible that earlier operation would not have saved his life, although it is reasonable to suppose that it might. Further, there was some justification for the doubt as to the localization in view of the segmental character of the sensory trigeminal distribution. But when one views in retrospect the almost classical onset and develop-

ment and the fact that operation was delayed mainly because of the absence of choked disk, one is tempted to ask whether in the presence of clinically conclusive proof of neoplasm one need always wait for the appearance of papilloedema.

It is not of course the object of this paper to urge immediate operation on every case of probable brain tumor. There are so many possibilities of error, even by very experienced neurologists and skilled brain surgeons, that it would be rash to counsel too early intervention; although the writer feels that the only answer to the hitherto disheartening results of brain surgery is more boldness and less conservatism. But I do wish to point out, first, that every patient on whom the probable diagnosis of brain tumor is made at once becomes a surgical case, though not necessarily at the same time an operative one; and secondly, the presence of clinically conclusive proof of a localizable brain neoplasm should warrant operation even in the absence of signs of choked disk. On the other hand, it is to be hoped that the technique of brain surgery will improve to such an extent as to make an exploratory craniotomy a relatively safe procedure.

CONCLUSIONS

Papilloedema is the best single sign of brain tumor. It is most often a late sign. It is most common in certain locations such as the pineal or quadrigeminal region, even up to 100 per cent, and least common or altogether absent in others, such as the hypophysis. It is frequently absent in many tumors and in many locations which by current theoretical explanation should give choked disk. Internal hydrocephalus is commonly held to account for choked disk, but there are sufficient exceptions to call in question at least part of the theory. Being usually a late sign it is not the best guide to treatment although it is always an urgent one. As we are gradually learning to diagnosticate tumors by more refined methods operation is justified whenever we can satisfy ourselves that the proof of the existence of a neoplasm is clinically fairly conclusive, even in the absence of choked disk. This holds good at present for tumors of the motor cortex or acoustic neuromas, but should hold good also in other regions, as soon as localization is made with a fair degree of accuracy. Every case of brain tumor becomes surgical, though not necessarily operative, as soon as a diagnosis of brain tumor is made, whether localized or not and whether there is choked disk or not. Greater knowledge of the fundus changes in brain tumors is needed, and effort should be made to restrict as far as possible the use of the terms papillitis, papilloedema and optic neuritis to sharply defined ophthalmoscopic pictures.

* This case was reported by me in the *Neurological Bulletin*, Vol. III, Nos. 9-10, Sept.-Oct., 1921, under the title of "Segmental or Nuclear Trigeminal Sensory Disturbance."

THE RELATION OF SYPHILIS TO DIAGNOSIS AND SURGERY.*

By ALBERT M. CRANCE, M.D.,
GENEVA, N. Y.

THE subject of syphilis has for many years past, and, in fact, until quite recently, been placed in a class by itself. It has too often been shunned by the practitioner as a something he cared not to deal with. It has far too often been looked upon as a venereal disease only.

Syphilis has not by any means reached the climax of its importance in diagnosis, or in surgery. In 1906, with the discovery of the Wassermann reaction, a great many more cases began to be discovered by practitioners simply by verifying their differentiations with the complement fixation test. In spite of the fact that the importance of the Wassermann has long been emphasized, there is too small a number of these tests taken. Those who are taking routine Wassermann tests agree that it is a much safer procedure than it is to take it in only the so-called "suspicious" cases. On the other hand, if routine complete physical examinations are given, many cases of syphilis will be brought to light regardless of the Wassermann reaction.

It is also true that the clinical history, which should always include the venereal history, will often suggest the possibility of syphilis being present. There are some patients who will deny ever having had any form of venereal disease; others who admit having had gonorrhoea, a "soft" chancre, a venereal "pimple" or some other lesion, and yet in many of these cases there is no question regarding the diagnosis of syphilis. Let it be emphasized that the only way to absolutely differentiate the syphilitic chancre from other similar conditions is by the presence or absence of the spirocheta pallidum. Chancroids are very rare as compared with chancres, and this is always to be kept in mind when taking the history of any case. The number of lesions does not rule out syphilis. I recall a case in which there were seven chancres on the penis, all of which contained the spirocheta pallidum. The writer recently examined a young man who had three of the so-called venereal pimples which all contained many of the spirocheta pallida. In this particular case they were associated with an active acute gonorrhoea.

In this paper we are dealing with late syphilis, and principally the obscure type of cases, and its relation to diagnosis and surgery. In the diagnosis we rely chiefly upon three important factors, namely, a carefully taken history, the physical findings and the blood or spinal fluid Wassermann test. By the Wassermann test, I wish to include provocative tests also.

In the physical examination, there are a few outstanding signs which at once arouse suspicion when found. Beginning with the head, we often notice areas of alopecia which suggest lues. The eyes very often show a slight external strabismus. Ptosis of the upper lid seems to be a rather prominent symptom in many cases. The reaction of the pupils to light is of considerable importance, as well as any inequality of them. Routine Romberg tests are valuable. The throat also may show some signs such as whitish contracted areas, scars of previous mucous patches, or other specific signs. The appearance and arrangement of the teeth are of considerable importance, especially in congenital syphilis. In the chest, if a heart lesion is found, the pulses and blood pressures on either side should be compared. A variation of twenty m.m. or more mercury, in the two arms, is suggestive of aortic aneurism. This condition may easily be verified by the roentgenologist's findings. The abdominal examination rarely reveals any valuable sign, unless it be enlargement of the liver, a condition which is often due to lues. The patellar reflexes if at all diminished or absent, demand further study before ruling out syphilis. The skin also should always be examined closely for syphilitic lesions, especially scars. Perhaps one of the most obscure, and yet one of the most important signs, is enlargement of the epitrochlear glands. One should never feel for epitrochlears in a hurried manner. It occasionally takes diligent search to find the most marked enlargements. Roughening of the tibia has been mentioned as very suggestive, but because of the fact that so many normal individuals present this sign, it seems better to disregard it.

It is to be remembered that many cases of obscure syphilis present no external signs nor symptoms whatsoever. All chronic cases presenting abdominal symptoms, such as those referable to the stomach, duodenum, gall-bladder, appendix, etc., should be thoroughly studied, and the Wassermann tests taken before either medical or surgical treatment is suggested. The work of Warthin, of Ann Arbor, has been very enlightening in this respect. He has lately demonstrated after autopsy the presence of the spirocheta pallida in such tissues as the heart muscle, the aorta, the liver and in certain ulcers of the stomach. It is very interesting to note that in a recent report of a series of 778 cases, Dunham found 137 cases of active and latent syphilis. His cases were referred for diagnosis, and were all of the obscure type.

With these few paragraphs in mind, I would like to report a few cases which will better show the importance of this subject. First of all, let us consider those which are more interesting from the standpoint of diagnosis.

CASE I. A little five-year-old girl, who presented a partial paralysis of the left forearm and

* Read at the Annual Meeting of the Ontario County Medical Society, held at Canandaigua, October 11, 1921.

leg. The condition had been previously diagnosed as a post-poleo paralysis, and the parents were about to have a harness made by "specialists" so that she would have more strength to walk. Examination revealed a dilated right pupil and a positive Argyll-Robertson sign. The left pupil only reacted slightly to light, and was somewhat constricted. Ophthalmoscopic examination revealed marked pigmentation in both retinae. She was nearly totally blind in the right eye. There was a slightly detectable external strabismus of the right eye. Her right upper incisor tooth was slightly deviated. The left forearm was partially paralyzed, abduction being impossible. The left leg showed a spastic paralysis. The thigh was apparently unaffected. The left patellar reflex was markedly exaggerated. The Wassermann was four plus. The entire condition had progressed gradually for over three years, and yet had been overlooked as a case of post-poleo paralysis rather than one of congenital syphilis. It is of interest to know that the father and mother gave negative histories, and were both free from symptoms except that the mother has a very slightly detectable external strabismus of the right eye. The mother's Wassermann is four plus; the father's one plus.

CASE II. is that of a man, aged 33, who complained of pain in the lower right quadrant, gas in the bowels, loss of weight and weakness. His illness dated back over a period of three years. He was operated upon elsewhere one year ago at which time he was told there were ulcers of the bowels. The appendix was removed. There was no physical sign of syphilis. Fluoroscopy of the colon showed a constriction in the ascending colon probably due to adhesions. He had had gonorrhoea and a pimple on the penis fifteen years before. But, a Wassermann test, which is taken as a routine procedure, was found to be four plus. The question arising in this case is, "Was it a surgical case one year ago, or was it not purely an overlooked case of syphilis?"

CASE III. is that of a man aged 45, complaining of pain in the chest and occasionally short of breath. While loading hay in a field he was suddenly seized with pain in the chest. It lasted but a short time, but since then it had troubled him at times. It gave him more trouble in damp weather. He had had gonorrhoea 27 years ago. Twenty-five years ago he had had a so-called soft chancre which lasted but a few days. His heart presented a diastolic murmur over the second interspace at the right sternal border. This was also heard along the vessels of the neck. The right pulse was greater in volume, and of the pistol shot type. Blood pressure was as follows:

	Systolic	Diastolic
Right Side	142	110
Left Side	108	70

X-ray of the chest showed a moderately sized aneurism of the transverse aortic arch. His Wassermann test was four plus.

CASE IV. is that of a man aged 37, who complained of pain in the stomach when walking. His history resembled that of gastric ulcer. Seventeen years ago he had had gonorrhoea. He had also had at the same time a sore on the penis which disappeared in a few days after taking internal medicine. This fact in the history suggests lues in itself. There were unequal pupils and a noticeable external strabismus. The left patellar reflex was exaggerated corresponding to the dilated left pupil. His first Wassermann was negative. There was sufficient evidence to demand further study, therefore a provocative Wassermann was made one week following an injection of arsphenamine. This test resulted in a three plus. Rigid treatment relieved him completely from all of the symptoms.

The next two cases are reported chiefly because of their close relation to surgery.

CASE V. A man aged 33, with an impacted fracture of the os calcis. He had a negative venereal history, and the only important physical sign, other than the fracture, was a systolic apical murmur. His Wassermann reaction was four plus. From a surgical point of view we know that wounds in luetic patients often resist healing. Is it not more sensible to know how the Wassermann stands in the beginning rather than to perhaps wait until a long-drawn-out convalescence has been witnessed and then discover that the cause was due to syphilis?

CASE VI. is that of a woman, aged 52, who sought surgical removal of a large thyroid. She presented a slight ptosis of the upper eyelid. There was sluggish reaction of the pupils to light. There was a large goiter, which suggested adenoma. She also had a fibroid uterus and two small tumors on the cervix. The Wassermann was four plus. This case is interesting inasmuch as her goiter, which might have been the only consideration from a surgical standpoint, subsided following anti-syphilitic treatment.

COMMENT

I have chosen these cases to report because they all illustrate one or more of the main points at issue. It is to be remembered that syphilis is found in all classes and walks of life. In its late forms it remains more or less hidden. Patients have too often gone out of the doctor's office with a prescription for some gastric or nerve sedative, or some other medication, whereas a few "shots" of salvarsan might have done considerably more good. Most surgeons have had at some time in their career the sad experience of operating on patients only to find that syphilis existed. It is certain, most naturally, that if one does not look for it, he will not find it. That is the main point—always look

for it rather than take the chance of missing it.

In conclusion I wish to repeat three necessary procedures in order to arrive at a diagnosis of obscure syphilis. First, a carefully taken history should be the introduction of every case. Secondly, the physical examination should include every part of the body, from head to foot. Thirdly, the taking of routine Wassermanns is absolutely necessary, and when occasion suggests, a provocative test should be taken. To this may be added the therapeutic test.

The fact remains that there is an important relation between syphilis, diagnosis and surgery. The fact that syphilis may mimic all other diseases is sufficient to warrant the most careful consideration of all cases. It is well to recall what Sir William Osler once said, "Know syphilis in all its manifestations and all things clinical will be added unto you."

DISCUSSION

DR. H. J. KNICKERBOCKER, Geneva: There is in Dr. Crance's paper a message written so plainly and in such large type that "He who runs may read" without difficulty if he be not of that kind who are best described by the old adage that "There are none so blind as they who will not see."

Syphilis, like many other diseases, is not a respecter of persons, and whenever a physician conceives the idea that the social, ethical or moral standing of his patient is so high that lues cannot be considered, it is about time for a thorough investigation to begin. More syphilis is overlooked in the average physicians' practice than is diagnosed. Not because the doctor is incapable of making a diagnosis, but because he thinks he knows his patient, fears to offend him or is content with assuming that syphilis is non-existent and that the symptomatology is due to something else. Too often the case is treated entirely on the basis of local conditions without any consideration of the causative factors. I have just reason to remember a case I once had who denied stoutly that he had ever had syphilis or anything like it. At least four other physicians believed his story. X-ray plates showed his cough due to some lung condition which was not typically tubercular, and still we all slept soundly, tucked in our nice little trundle beds. We sent him to Saranac and they opened the book with a 4+ Wassermann. Then I knew I had seen syphilis of the lung and since then have picked up two more cases. This man died of general paralysis leaving an infected wife and two infected children. The story would have been different had he not lied or had I not been so credulous.

A patient may have syphilis and develop other conditions, but every time that happens, syphilis is a factor, often the causative factor,

and too often given too little consideration. I have operated two cases of non-suppurative appendicitis in which the pathological condition supported the Wassermann findings, syphilitic lesions being found in the specimen. Intestinal obstruction caused by stricture especially in the lower bowel are often syphilitic. There is no tissue of the body that may not be affected and it is well said that "He who knows syphilis knows medicine."

In what percentage of our patients do we consider the possibility of syphilitic infection? I will venture that it is mighty small with each of us and still less, the more we are doing general practice. The doctor limiting his work to any special line knows only too well the danger of skidding and is on the watch. His patients are mostly referred and are not among his acquaintances. He has to dig out a history and to his credit he is generally not credulous. He goes at it and gets his data satisfying himself that syphilis is not present rather than that it is. In this way only can he be assured and feel that he has done his duty. Contrast this method with the average practitioner who sees syphilis only when it presents classical symptoms.

Of all physicians, the general practitioner should be the one to be on the watch to make the diagnosis early. He is necessarily more exposed to accidental infection than the men in special work. His contact with his patients is frequent and close. His daily life often demands that he do everything for them. Were it not for the fact that the period of transmissibility is short, almost every physician would at some time or other become infected. Before the days of rubber gloves, syphilitic physicians were not uncommon. I have known several who claimed they were infected during the delivery of syphilitic mothers, or the examination of gynecological patients. The chances some physicians take make one wonder how they ever escape.

General practitioners see the bulk of the early cases. They should at least be sufficiently interested to make a diagnosis and impress the patient with the necessity for proper treatment. The ability is seldom lacking, but the disgust which the average general practitioner feels for venereal diseases in general often leads him to give the patient such short shrift that by the time he has reached home he wonders if the treatment will do him any good. He follows it in a perfunctory manner, if at all, and as soon as that particular stage of the disease is passed, he brands the doctor a liar and a robber, considers himself cured, and proceeds to do his best to infect others. The primary lesion may be so small or its duration so short that it may go unnoticed. Likewise the secondary stage may pass and not until the tertiary lesions give their protein manifestations will he seek a physician. If he has

been told that he has had syphilis, he carefully conceals it, leaving it to his medical adviser to find out. The average patient goes to a physician to find out what ails him or for treatment; a few have sense enough to ask for both. The syphilitic asks only for treatment and unless we depend on laboratory and other tests beyond his control he will fool us, brand us "no good" and go elsewhere. These tests must not be perfunctory, but thorough and far-reaching. They must be done in co-operation with competent laboratory workers in whom we have confidence. A single blood specimen is of value only when positive and coming from a reliable laboratory, and even then may need confirmation by other signs or repetition of the test. It may require a dose of arsphenamine to develop the resistance of the patient and make a positive Wassermann appear or a spinal puncture may unmask the underlying cause. Several doses may be necessary to mark the disease. Until the limit has been gone, we have hardly done our duty.

Truly the physician's responsibility in the matter of syphilis is great. To the patient, his associates and his descendants we stand in a most responsible relation. Let us make the diagnosis, if we can. Let us impress the patient with the gravity of the case; treat him if we choose, or send him where he can get proper treatment. We should suppress just what we would like to do to him and ever keep in mind that good old maxim that admonishes us to do to others as we would have done to us were our relative positions reversed.

DR. JAMES PRIMROSE AND HIS VULGAR ERROURS.

By WILLIAM RENWICK RIDDELL,
LL.D., F.R.S.C., Etc.

IN the first half of the 17th Century there lived and practised in the ancient City of Kingston-upon-Hull, in Yorkshire, England, a physician of great note, Dr. James Primrose (or Primerose) who came of a good Scots family from Culross, Perthshire, his grandfather, Gilbert Primrose, having been principal surgeon to King James VI of Scotland and the elder brother of Archibald Primrose ancestor of the Earls of Roseberry, and his father, the Reverend Gilbert Primrose, M.A., D.D., Minister of the French Church in London and Chaplain-in-Ordinary to James I (of England, James VI of Scotland).

James Primrose was born in France, graduated M.A. in the University of Bordeaux and in 1607 M.D. at Montpellier, ad eundem Oxford, 1628: he was admitted on examination to the College of Physicians, London, 1629, and settled in Hull where he practised his profession, dying in 1659.

He wrote many medical works, all in Latin, which were published at London, Oxford and Leyden: two of these were attacks on Harvey's

work "de Motu Cordis et Circulatione Sanguinis"; but Harvey did not reply.¹ He was, with the better known Nicholas Culpeper the first to write in England on the diseases of women. One of his works "De Vulgi in Medicina Erroribus" published in London in 1638, 8vo, was republished in Latin at Amsterdam, 1639, and Rotterdam, 1658 and 1668, both 12mo; there was also a translation in French by M. de Rostagny published at Lyons, 1689, 8vo.

What we are more particularly interested in is a translation in English by Dr. Robert Wittie,² a physician also practising in Hull, which appeared in London 1651 as an 8vo; it is one of the most interesting and amusing of the many interesting and amusing books of that time which have come down to us. The celebrated Andrew Marvell wrote eighteen lines in Latin verse and a poem of forty lines in English in praise of this translation.³ The volume is of 461 pages with a Table of Contents of 7 and a list of publications of "Nicholas Bourne at the South Entrance of the Royall Exchange" of 4 pages. The Frontispiece is a well engraved cut representing a sick man in bed, standing by his side a physician feeling his pulse, and an Angel pushing forward the physician and at the same time pushing back a woman who, says the Explication, "brings her *remedie* . . . a pepper posset" for " . . . alone It cures the Fever, Strangury, and Stone." The Angel

" . . . gently puts her backe
Lest such erroneuous course the sicke doe wracke,
Leads the Physitian and guides his hand,
Approves his Act and what he doth must stand."

The Angel is represented as saying:—"Infirmum corpus Medico committite fidei"—entrust the infirm body to the faithful physician. This Explication and the angel's words well illustrate the purpose and contents of the book which is directed against "Popular Errours or the Errours of the People in the matter of Physick" and urges the employment of a regular physician.

The type is clear (the Greek is the horrible type of the day) the paper is good, the spelling as erratic as was to be expected in this pre-Johnsonian times.⁴ The language employed is terse good English but too plain for our finical times—the translator uses Saxon monosyllables for the functions and excretions of the human body and there is never any chance of misunderstanding his meaning.

He begins by assailing "Ministers, Mountbanks, Runnagate Quacksalvers and women who are said to meddle in surgery"—a ground of complaint as old as Hippocrates and ever new in all succeeding generations—but at the same time he considers it a vulgar error that the people "call them a learned Physician and a great Scholler who can perhaps speake Latine or understand a little Greeke" but who do not "understand thoroughly the Diagnostick, Prognostick and Therapeutick parts of Physick." He has no use for

graduates who "returne home from Universities not a whit better learned than when they went up—*doctores non doctiores redeunt*"; and he approves the London ordinance that every "Doctour of the Universitie" must pass an examination by the College of Physicians. His dislike is extreme of those "mongrell Physicians" who "having bought the title of Doctour in forrain Universities . . . return home that they may bee cram'd with the blood and wealth of their countrymen."

No better are "men of Ecclesiasticall order" who greedily undertake the cure⁵ not of souls but of bodies also, for, as he wisely says, "the medicinall art seems so cumbersome, difficult and long that it cannot be thoroughly learned of any man but it requires and exacts the whole man"—he cites with approval the decree of the Council of Tours⁶ forbidding monks to leave their "Cloysters" to practise medicine, and subdeacons, deacons and priests to exercise any part of surgery, burning or letting of blood. Still more objectionable are women—they, indeed, "know how to make a bed well, boyle, pottage, cullices,⁷ barley broth, make almond milke,"⁸ but they will busy themselves about surgery and especially the cure of Tumours and Ulcers without the skill to know "whether it be a simple wound or corroding, contused, with putrefaction of the bone, corrupt, cancerous, fistulous, etc."

"Silly women observe the beating of the arteries, peepe into urines and prescribe purges . . . and who can refrain from laughter when hee sees women feele the pulse?" And he has no language strong enough in reprobation of women that serve or visit the sick and insist on him having abundance of food "to uphold his strength."

"Mountebanks" so called by the English and Italians, "Charlatans" or "Ceretans"⁸ by the French who have a specific against all poisons are worse, their antidotes are not so good as the "well approved Triacle of Andromachus, the Mithridate of Democrates or Matthiolus his Antidote"⁹—their balsam and ointments are worthless or almost so.¹⁰

The pretended followers of Paracelsus are next assailed, who "do cloak their wiles with Paracelsus, his name, whose books they never read, much lesse understood"—and anyway, Paracelsus "spares neither spirits nor words nor conjuring tricks, for he teaches that diseases ought to be cured by any art whatsoever, whether by the help of Devils or of naturall meanes."

Physicians should be surgeons, although the time had not come for surgeons to be physicians and gentlemen.¹¹ A physician might make up his own medicines like Galen who made a "Triacle," Pachus who made a "Hiera," and Fernel who was wont to compound his own remedies.¹² Secret remedies are deprecated; and the popular idea that some physicians are lucky—"they are unlucky that trust in them, for by art and not by

fortune are diseases cured," and the day of miracles is past. God keeps his covenant he has made with nature—a quaint and striking manner of expressing the uniformity of natural cause and result.

Those surgeons and Mountebanks who promise an easy cure of the French Pox are as bad as those ignorant men and women who "peepe into urines, handle pulses and prescribe purges." How can the ordinary person distinguish the "Pulsus arhythmos, ecrythmos, pararhythmos, mejouros in una vel pluribus pulsationibus, caprisans, imparcitus, aequalis inequaliter, equaliter inequalis . . . out of which wee take the knowledge and prognosticks of diseases?" And the same may be said of Urines and their "differences, simple compounds in colour, consistence, contents and their causes."

While "it is a very easie thing to loose the belly," "they are much mistaken that . . . if their bellies be but abundantly loosed, doe applaud it"—and "some mongrell Physicians . . . by men's deaths make their experiments."

Having now sufficiently assailed irregular practitioners, Dr. Primrose attacks common errors as to disease, diagnosis and cure. First he exposes the fallacy of Uroscopy—"Now a dayes in France and Italy Physicians have quite abandoned this colish custome of divinity by urine"¹³ although "to this day among the Germanes this custom is in force." That pregnancy and even the sex of the foetus can be diagnosed by uroscopy is disputed—Avicenna's pathognomonic of "Sediment like unto carded cotten" is deservedly rejected; and Avenzoar's remarkable experience of being deceived as to his own wife being enceinte is cited.¹⁴ A merry story—not *the* story of uroscopy—is told of a certain maid substituting a cow's for her mistress' urine, and being told "that the patient eat too many sallets."¹⁵

Troubled urine is not always a good sign in disease—it may indicate approaching "head-ach, frenzy, convulsion, death"—nor can consumption always be diagnosed by the urine, whether it be actually marasmus, atrophica, hectic fever or phthisis. Here a warning is given not always fully appreciated in our own day, though both Hippocrates and Galen¹⁶ are definite, that phthisis is contagious.

The plague is infectious—"Yea, there is no true plague which wants contagion. . . . The scab or itch otherwise a very light disease, the skull, leprosie, madnesse, the ulcer of the Lungs, the *Ophthalmie* or inflammation of the eyes and the french pox doe infect those that are neere, why not also the plague?" What difference if Hippocrates, Galen and the other ancients say nothing of its contagious character, or that the Turks and other fatalist nations think it impious to attempt to avoid it? Galen did speak of it, though obscurely,¹⁷ Aristotle likewise, and Thucydides said that the Athenian

plague during the Peloponnesian War was most contagious, while the Turks pay dearly in victims for their rashness.

It is lawful for a Christian—whatever it may be for a Turk—to flee from the plague: even “Hippocrates saith it is the safest way to fly soon and farre and to return late”—and the rat flea was not thought of.

It is a mistake to think that there is no remedy for “intermitting feavers . . . called agues”—they “proceede from divers humours, cholericke, phlegmaticke, melancholick . . . if they are exquisitely cholericke, they are easily cured”—of the others “some doe end sooner, some later, some are cured and some doe kill, according to the diverse disposition of the peccant humour, in quantitie, thickness, toughness, acrimonie, malignity; according to the state of the patient and his strength, time of the yeare, country; temperature of the weather; manner of diet, constitution of the noble parts,¹⁸ diligence of the physicians and others that be conversant about the cure and other circumstances, the explication of which belongs not to this place.” No one has ever given a more complete prognosis—it may not, however, give much information or comfort.

You cannot tell the heat of the liver by the temperature of the palm of the hand: “that unusual heat of the hands doth rather proceede from the heart”: “the heat of the Liver is perpetuall . . . the heat of the hand is fugitive, often goes and comes again . . . other Authours attribute it to the Spleen”—the unfortunate Spleen has for ages been the receptaculum and diverticulum for villainy according to the whim of physiologists. And it is nonsense to say “that the shortnesse of the fingers betokens a little liver”—Averhoes knew better.

No one should “complaine of a hot Liver and a cold Stomach,” the “Stomach because it is a spermaticall part, membranous and bloodlesse and white is of a cold temperament” by nature and “to thinke that the heat of the Liver can hurt it is an absurditie” fenced about as it is “on every side with hot Intrails . . . in the middle between the Liver, the Spleen, the Caule and the . . . Colon.” The trouble arises not from the heat of the liver but “too much drinking . . . of wine and of ale and Beere” whereby “crudities in the belly doe growe and swimings, belchings, windinesse and spittings doe arise,” even “too much gulletting of hot drinks.” “If they would live soberly and use moderate drinkes they should experience no such matter.”

Of all the many errors, Primrose thinks that “most worthy to bee laughed at” that a husband is thought to be sick and troubled with the same symptoms as his pregnant wife—he “had a patient sick of a Fever . . . who would not be perswaded of any other cause of his sicknesse

than his wives being with childe.” He had never heard of this idea except in England; I have not met it before anywhere.¹⁹

His own experience led Primrose to score another popular error “One that without license practised Physician, a Surgeon by profession, that he might doe me a displeasure was often heard to say that a Frenchman cannot understand the nature and constitution of the English.” He instances the distinguished example of Galen born and bred in Greece, practising at Rome; Hippocrates asserting his principles applicable in Lybia, Delos, Scythia, etc.

Those who “refer almost all diseases to a Cold” are not all dead yet, and they were still more numerous at this time.

The water in England is just as good as that in France, Spain and the hot Countries, and it is wrong to imagine that that “which lyes open towards the Sunne or runnes Eastward” is the purest. The alleged badness of the water should not be made an excuse for drinking “beere” especially if as in the North of England it is drunk very new.

The common people think it a “hainous offence, often to change the linnen used about the sick . . . they think the sick are enfeebled and weakened thereby.” Hollerius and Rondeletius have noted that the same idea prevails in France and Italy, but both direct frequent change of linen.²⁰ Hippocrates and Galen insist upon cleanliness and the “Ancients that did not use linnen did keep a frequent use of bath and frictions whereby the body was opened and cleansed.”

“Lessius the Jesuite, a more learned man” had published an “Eloquent Diet-booke”—I confess my complete ignorance concerning book and author—he thought “twelve ounces of meet and fourteen of drink sufficient for any man.” Dr. Primrose very much approves the book, but its precepts cannot always be followed—circumstances alter cases.

A “Slender diet” is good for the sick—those nuisances not yet all dead are rebuked who serving or visiting the sick “do usually obtrude on him, abundance of meat . . . as they say to uphold his strength alwayes fearing lest he dye with hunger.” As Primrose says, “their intention truly is good,” but every physician knows what a peril they are.²¹ Not only the quantity of food is improper; but also the quality for “they are . . . wont to offer to the sick . . . divers strengthening meats as they call them, as ale boyled with eggs, mace, nutmeg and cynamon” (our “egg-nogg”)—and even solid meats. Primrose says in case of fever especially “cooling, drinking of water, rest”—and I do not know that the prescription has ever been bettered. Asclepiades in Rome went too far in granting to the sick “bathes, wine, flesh and whatever they liked and wished for”; and Galen

quite far enough who "did yeeld to some that were sick of Feavers to taste fruit."²²

"The drinke called a Posset" is not wholly objectionable—made of boiled and curded milk it has "the virtue of whey which is opening"; but the milk is often coagulated with strong ale or wine and delightful as the drink is to the healthful, it hurts the "sick of Feavers or of any cholerick disease . . . it heats the body . . . inflames the Liver . . . troubles the head and causes the same evils . . . as drinking wine." It is always given hot, while cold drinks are more pleasant and salutary. If a posset must be administered, "let the boyling milke be coagulated with the juice of lemons or a little vinegar, adding . . . a little sugar . . . take away the curd and . . . the whey alone . . . is an excellent remedie to coole Feavers and to open obstructions."²³

Dioscorides, Paulus Aegineta, Aetius, Galen, all had their form of posset "made with acide or oxymel . . . more convenient for Feavers and cholerick diseases."²⁴

The ordinary practice of making broth for the sick from the flesh of an old and fat cock is not sensible. It is true that Dioscorides says that broth made of an old cock loosens the belly and draws down gross and raw humors, black choler and excrements while Galen²⁵ says that "Hen-broth hath the value of binding the belly as that of old cocks hath the force of loosing"—but "the broth of a young cock doth nourish very well and . . . therefore is very good for them that be sick." The opinion of Hippocrates, Galen and others is sound—old flesh is not fit for nourishing, and consequently not convenient for the sick.

The usual practice of boiling gold in the broth of the sick, especially the consumptive, is not indeed hurtful, but it is altogether unprofitable.

Gold may have many virtues—Avicenna says that "if a new borne child hold it in his mouth he need never feare the Devill." Fernel highly commends it, Paracelsus contends that all diseases may be cured by it and many other physicians extol its virtues but Primrose not denying that it "may seeme to be an excellent cordiall and a strengthening medicament" says "though it be not hurtfull to seeth it in broths, yet it doth no good at all for nothing is dissolved from it nor passes into the liquor except some drosse." He ridicules "the good man Daniel Sennertus²⁶ for being deceived by a Germane sycophant" into believing that a hen "crammed a whole month with leafe gold, doth so perfectly turn the gold into her owne substance that three pure golden lines . . . may be seen on her breast"—this he truly thinks to be "an extraordinary form of nourishing . . . for the food . . . to retaine its own nature even to the third concoction."²⁷

Of milk as a remedy for consumptives,²⁸ he has a high opinion, "it being for this purpose much better than gold for it nourisheth, refrigerateth and consolidateth ulcers." But he combats the common notion that water should not be mixed with it "for sometimes it turnes into a nidorous and burning savour, sometimes it growes tart and soure or curdles in the stomach." It is well when it turns into a burning savour to put in a "good deale of water"; Hippocrates mixed cows' milk with one-sixth water; Pythocles a good deal; Avicenna preferred buttermilk as more watery; Galen gave asses' milk as very thin, full of whey and having little curd; Gordondus, Ioubertus, Holterius and others preferred Asses' milk; but if that could not be obtained, they diluted cows' milk to the consistence of Asses' milk.²⁹ The falsity of the common proverb "Milke must be washed from the liver" is next asserted—"Many when they eat Milk, do presently drink Beere or Wine, and say that Milk must be washed off the Liver."³⁰ Why the milk has not reached the liver and it is by the liquor curdled in the stomach, "waxes soure and becomes hurtfull."

Nor should that "most usuall custome of all" be indulged in of taking a morning draught of strong beer or ale or wine. A morning draught is useful "so that it be not of strong drink," say Small beer; for it "helps forward the distribution of the meal, purges the stomach, cleanses it, tempers naturall heat, moystens the body and . . . hinders the generation of the stone for it tempers and moystens the Kidneyes." Strong ale and like drinks on an empty stomach "hurt the nervous part, from whence the Gout, paine of the joints, inflammation of the bowels and other grievous diseases may arise."

Just as bad is the custom of many who if they eat meats of hard digestion like venison, beef, salt-fish or soon corrupted like summer fruit, at once drink strong distilled waters or aqua vitae, cinnamon water, Rosa Solis or other such like "to help concoction." All the best authorities are against the practice, Rondeletius, Riolanus, Gordonius, Fuchsius, Savanarola, Rubeus, Aetius, Valleriola, Mercatus, Amatus, Galen. Aetius recommends wormwood for "hypochondriack windinesse" so does Galen; and Amatus recommends coarsely ground pepper.³¹

Midwives should not give parturient women only hot drinks; they should not feed them with much meat and very nourishing but sparingly as with broths. Rodericus a Castro saith: "It hath alwayes been a vexation to tolerate women about childbed, for unlesse they cheere her up with delicate meat and wine they think that they doe no good at all." And Petrus Salius reproves the same error amongst the Italians.³²

It is equally absurd to reject a wet nurse who has given milk for (say) a year on the supposi-

tion that her milk is not wholesome for a new born child.

Children should not be given strong drink at all. Galen forbade wine to children till they were fourteen; Paulus till twenty-one; Plato and Hippocrates were of the same opinion. Wine "makes them fiery spirited and dulls and troubles the mind."³³ Nor should they have solid food "before they breed their teeth."

It is not safe for a man to drink freely. Dr. Primrose does not "like the custom of some of the ancients who thought it wholesome for the body to be drunke once a month." It is true that "there are some cases in which it is very profitable for a man to drinke wine liberally," but "that ordinary drunkenness . . . drinking and fuddling . . . is very dangerous and not undeservedly reckoned among the causes of diseases."

Aristotle, indeed, thought that a "Quartane" could be cured by excessive wine and "Amatus the Portugall" gives the reason—Hippocrates thought that a Doglike appetite could be cured by drinking wine; Galen says he has thus cured it; Hippocrates advised treating strangury with liberal wine drinking; Paulus Aegineta allowed it as diuretic and sudorific—but *cavete*.³⁴

Red cloths over those suffering from "measles and small pox" do not hasten the cure—"Yea, rather I would commend the whitest"—as do our modern hospital physicians.

You cannot always check an approaching disease by "walking, exercise and labors." The old saying may be all right: "Tu ne cede malis, sed contra audentior ito."³⁵ (Don't retreat before evils but oppose them the more boldly.) Sometimes it works satisfactorily; but unless the cause of the disease be very slight, "exercise is troublesome and hurtful to the sicke in regard of the agitation of the morbus humours thereby." Prodicus who "was wont to molest those in feavers with much walking abroad, coursing about, wrestling and dry fomentations" was blamed by Hippocrates: Herodicus had the same unwise system and Asclepiades who would have his patient use violent exercise at the beginning of a burning fever was rebuked by Celsus.³⁶

"Chymically prepared remedies" are not to be altogether neglected. Paracelsus did not invent this manner of preparing medicaments. Raimundus Lullius, Villanovanus and many others used it; Matthiolus used the spirit of vitriol and antimonie, Crato praised such medicines, so did Erastus the great antagonist of the Paracelsian Sect, and Riolanus of Paris—and "it is certaine that by this spagircall art, the most unruly medicaments are made serviceable and many that are otherwise poysonous, their deadly qualities being corrected do become cordiall."³⁷

The mere fact that remedies are not immedi-

ately successful is no reason for discontinuing them and if one medicine fails there is no wisdom in refusing another. "Antonius Mursa, Physitian to Augustus Caesar when he perceived the frame of Caesar's stomach to become worse by the use of hot remedies, he applyed cold remedies and so cured him."³⁸

Nor should medicines be rejected from their unpalatableness. *Cito, tuto, facile curandum*, of course; but sometimes the unsavoriness of drugs cannot be taken from them. And "it were not amisse if many both men and women did take physick more sparingly for they prejudice their health and they that are ever and anon taking Physick doe seeme almost always to have need of it."

The contention that England could furnish itself with remedies is next discussed.³⁹ Pliny thought that all "forraine" remedies should be rejected; but he was the great antagonist of physicians. Galen used Lemnian earth from Lemnos, candy, dittander, Macedonian parsley; and in England foreign "Sene, rhubarb, etc.," are used.⁴⁰

Four chapters are devoted to exposing the folly of observing times and seasons for bleeding and purging—of course Hippocrates does recommend that "They that finde blood-letting and purging to doe them good . . . to purge and let blood every Spring"; but that is not advice to everybody. It is absurd to take note of conjunctions, oppositions of the stars for bleeding and purging and Hippocrates forbids purging under the Dog-Star only because of the heat at that time in his country; the almanack makers and astrologers move the doctor to laughter with their warnings about physis.

It is no new error but often rebuked by physicians that purging pills should be taken after supper; Primrose says they should be given the same time as every other medicine "namely, the morning after perfect concoction," and cites Galen, Paulus and Fuchsius in support; and it is not "a heynous crime," as almost all men think, to drink cold drink the same day as a purge—generally only hot drinks as Possets are taken. When John de Vega, Viceroy of Sicily, had taken a purge which worked but slowly, the learned physician, Philip Ingrassias, gave him a pint of cold water with a little sugar and the purge "wrought very well."⁴¹ Sanctorius, Mesue and Rufus approved this treatment.⁴²

Purging may safely be had even if the patient does not eat, or if he sometimes vomits, or if there be "a flux of the belly"—clysters are not dangerous and should be administered with a syringe so as to go beyond the ilio-caecal valve. Old men may be bled with impunity and the surgeon should not be too particular what vein he opens; sleep and drink should be forbidden immediately after venesection; enceinte women

may safely be bled and purged, and physic is good for women in child-bed.

It is not hurtful to take quicksilver by the mouth. Dioscorides, Aetius, Galen, Avicenna, Fernel all say that it is; and Conciliator tells the story of a druggist who by mistake drunk a glass of quicksilver and "dyed congealed, insomuch as when his dead body was opened, the Physicians found the blood about the throat congealed and frozen." But Rosarius tells a different story: "I knew a Germane . . . drunk and sleeping in a Goldsmith's house . . . groping about . . . lighted on a vessel in which was three pound of Quicksilver . . . half asleepe he drunk up all the quicksilver . . . awaking in the morning and feeling some cold humour neare him, hee found quicksilver." Rosarius gave it in confinements to facilitate the birth and the expulsion of the Secundines; Brassavolus even gave it to children for worms; "Amatus the Portugall" says that the "Spanish Physicians prescribe it as a most excellent Antidote for children that are bewitched and for such as are troubled with wormes . . . and hee tells a story of a certaine boy, tenne years old which drank up more than a pound of Quicksilver instead of wine and felt no symptome from it except the weight thereof and by the help of Clysters purged it all out again and remained free from all further harm." Matthiolus recommends it and the women of Goritia administer a scruple in difficult parturition; while Hartmannus used it freely "for the curing of wormes in the belly." The "evill symptomes, Fernelius, Palmarius and others do affirme to arise from it, as Stupefaction, Convulsions, Tremulations, Lethargy, paine in the Guts and such-like" must arise from imperfect preparation or excessive quantity. In fact it is safe without any preparation—of course mercury sublimate and precipitate are a most violent poysen, although Dr. Primrose has known some so bold as to put a grain or two into Pilulae Barbarossae. Mercurius dulcis, "Sweet Mercury," is safe but no more so than the crude.

To a modern, the most interesting part of this work is in the three chapters on Tobacco, the "Henbane of Peru" believed by some to "provoke sleep and assuage paine." Primrose has seen inveterate headache cured with tobacco but he does not believe that it "provokes sleepe." It "doth purge the body both upwards and downwards in a violent manner like Hellebore or Antimony. And any man shall as soone prove Hellebore to bee a narcotick, as perswade mee that Tobacco is so."

He "never yet took Tobacco, nor . . . desire to take it" but he does not think it "very hurtfull unless it is immoderately used." Lewes (Luis) Mercatus highly extols it for sundry diseases—but sometimes the use of it is very pernicious and it must be taken with care. Consumptives have been benefitted; but it is grossly

erroneous for everyone taking it to be continually drinking or getting drunk "hereby bereaving themselves of that benefit that would accrew to them by the right (use) therof."

Warning is given that the habitual takers should "bee very cautious" about leaving it off "except they keep a very temperate diet" for they shall feel their head and, indeed, their whole body filled with humours, their sleep will be short and troubled, the stomach will not "concoct" the food so well and "many like evils may arise from thence."⁴⁴

But the "smoake doth not goe up into the Braine" as some vainly imagine; the dizziness comes not from the smoke filling the ventricles of the brain but from the spirits being too much heated and agitated or from the vapors stirred up by the immoderate heat of that smoke—to understand which one must know something of the then current doctrines of animal spirits and vapors.

Monardes⁴⁵ commends tobacco "against poysen . . . wounds . . . made by poysened weapons and venemous beasts," and Primrose thinks it may "doe good against the Plague" but cannot be sure. "Other poysens have their proper antidotes . . . but the Pestilence hath none at all."

The unreasonable use of cordials and antidotes does much more harm than good; antidotes like Triacle, Mithridate and the like, cordials like Aqua celestis, Imperialis—cold water will generally be much more beneficial.

Real "cordiall medicine" often does good, for example such as recreate the spirits as wine, eggs, broth, easily digested meat; such as clear and purify the spirits as "Pearls and Silk"; hinder the resolving of the spirits and thereby compact the substance of the heart as "Carrabe, terra sigillata, Bolearmoniack"; delectable to the heart as Aqua celestis, Imperialis and Maria; corroborate the heart by manifest qualities as Borage, Buglosse, Gold; evacuate the melancholic humour as Myrabalanes; corroborate the heart by occult qualities as Hyacinth; while "Triacle, Mithridate, Strong waters, good ale, burnt wine . . . may not only do harm to the sick but to such as are in perfect health, too."⁴⁶

The "Bezaar Stone" next comes in for discussion. What is the Bezaar Stone? It is an antidote and a preservative from poison, plague, jaundice, all intestinal and other obstructions—so say Averrhoes and Avenzoar—but Avenzoar's Bezaar Stone is not ours which comes from India. His is really the "teare of a Hart . . . which . . . Plinie . . . testifies, by the breath of his nostrils draws serpents out of their holes and eats them, immediately he is taken with a grievous thirst . . . runs to some standing poole . . . plunges himself up to the neck but through nature's instinct drinks not or hee would fall down dead presently. Then a certain

humour distils to his eyes which by degrees thickens, unites, and compacts together and grows to the bigness of an acorn which . . . being come out of the water the Hart shakes off and is fought for by men which some call the Beazaar Stone, being as they say broad tending to a Pyramis of the colour of honey which Amatus the Portugall saith he hath seen."

Our Beazaar Stone is not "the teare of the Hart, which is too rare, if ever there was such a stone." Ours is very common, of divers sorts, yellow, duskish, whitish, the yellow being the best, then the duskish. Rhazes used the yellow successfully against the poison of Wolves bane. Garcias ab Horto, Physician to the Viceroy of India, says it is of a dark green color, and Matthiolus who calls it Quacelbenus says it is often adulterate. However that may be, there are two kinds of Beazaar Stone—one brought from Persia and adjoining countries which is found in a certain kind of goat (Paser is said to be the Indian name of it), the other from America found in divers creatures. Josephus Acosta says it is found in the Vicugnae and the Tarugae in the stomach and belly in some only one, sometimes two, three or more varying in size from a hazel nut to an orange, colored black, green, white, golden, gray. In Peru they are found in the Ganaci and Paci ("a sort of Rammes") black, small and inferior; in the Vicugnae green and whitish, larger and better—the best in the Tarugae, thick, greyish and thick shelled—in New Spain in Stags.

The best are from the East, of an olive color, the next from Peru, those in the third place from New Spain.

Primrose does not much believe in the virtues of this stone; he never saw any sudorific or emetic effects from it; Hercules Saxonia had the best in Venice, but he found them ineffective: Valerius, Physician in Ordinary to Philip II of Spain, said there was not a single genuine one in all Spain "much less is it likely that a true one should bee sold among us." Andreas Laurentius commended it against melancholy, but only if it "be naturall and true"; and Acosta said that the East Indians counterfeited it.

Primrose has read that Edward the Confessor had 60 grains of Beazaar given him, but thinks that as "the right Beazaar is seldom found, and that which we have is sold at too deare a rate" it should "be prescribed only for rich men and . . . always bee administered in a large dose . . . a dramme . . . it is such a gentle and innocent remedy." Some children might take two or three grains.⁴⁷

"Unicorne's Horne" is not so common as the Beazaar, "yet many bragge that they have great pieces of it."

There are creatures with "but one horne in their head," Aristotle names the Oryx, and the Indian Asse, others, Aelian and Pliny, add the Rhinoceros and that which is properly called the

Unicorn. Pliny and Solinus never saw the Unicorn, but they described it—Pliny "a very fierce beast, in body like an Horse, in his head like to a Stagge, in his feet to an Elephant, in his taile to a Bore, with a terrible voice, having one black horne in the middle of his forehead two cubits long and . . . cannot be taken alive." Solinus' description is practically the same. Ludovicus Vartimannus who says "hee saw two Unicornes in his travailes" gives the same description—he saw a whole horn at Nice and others elsewhere—but he differs from Pliny in saying that the Unicorn is a gentle and meek creature. Amatus the Portugall says if the horn is old it loses its virtue, and adds that there are many counterfeits, some made of "chaulke," the bone of a whale, sea-horse teeth, elephants' teeth, etc.

Scaliger saw a "Whole dead carkaffe . . . cast upon the coast of Tuscany with the head of a Horse, a scaly nack, two hornes, the one very little in the forehead, the other very strong in the snout, wherewith he fights adventurously and overcomes the Elephant." Caesar in the Sixth Book "De Bello Gallico" speaks of an Oxe that hath one Horne." Garcias ab Horto tells of an amphibious monster about the Cape of Good Hope with "one Horne wherewith he boldly fights against the Elephant"; out of "Island and Greenland are brought hornes which are thought to bee the hornes of Sea-Unicornes"—Primrose saw one in Hull—and Sennertus, Gesner, Fallopius, Agricola, Aelian and others speak of fossil unicorn forms.

Primrose is very sceptical of the "vertue of this medicament" and would like to see an experiment by giving some of the powder from a Unicorn's horn to a poisoned dog or chicken—so should I. He finishes this part of his book by relating some sayings of those who assert the curative antidotive virtue of the horn. "They did make a circle of the powder of it into the middle of which or into an hollow horn, they put a spider which if she passe over they will have it to be a counterfeit horn, but if she burst and die, it is natural, all of which are false, but enough of this."⁴⁸

He then warns against certain distilled waters used to drive away feavers: "Nor let the people rashly trust to their Receits . . . for they are even the hand of God when they are administered by a Skilful Physician but as it were a sword in the hand of a madman when one meddles with them who doth not well understand the rules of Physick"—perfect *esprit du corps*.⁴⁹

Apozemes, Juleps and other cooling potions should be administered freely, not scantily in fevers; stone in the Bladder cannot be cured by medicine taken by the mouth, Monardus, Augenius and Quercetanus to the contrary notwithstanding. Augenius commends a remedy made of Hog-lice with which Laurenbergius says he was cured. Quercetanus gives a prescription

for "a water to break the stone in the bladder without any pain at all." Galen laughs at Dioscorides for thinking he could effect a cure by the Lapis Judaicus and Argentarius refutes the idea, as do Duretus and Sanctorius.⁵⁰

Intestinal worms are not always to be killed at the beginning of a fever—by "Cordials such as Harts-horne, Unicorns-horne, Corall, Triacle, Mithridate, the seed of Citron, &c."—consider the wise advice of Rondeletius and Forestus and let them alone.

Cinnamon will not cure flooding; it may help diarrhoea and is undoubtedly diuretic. Syrupe de Artemisia is a good emmenagogue, so is Mugwort, also Syrupus de Stoechade.⁵¹

Opium properly prepared is a good sedative and the most innocent, though "we find in history of certain maids that have fed upon Monkshood and Hemlock." Our opium, indeed, "is for the most part, Meconicum of Dioscorides which is made of the strained juice of the leaves and heads of poppies, but the right opium is a Lachryma," much stronger. Even this Mnesidemus used "onely in smell because it would so procure sleep." Galen says such "Narcoticks . . . as Hemlock, Mandrake and the like are hurtfull"; and we are informed that the Triacle, Mithridate, Dioscordium, Philonium, etc., compositions sold in shops have opium in them. Quercetanus' prescription for laudanum is not so good as that of the "College of Physicians at London." Outward and topical applications are of little or no use in inducing sleep.⁵²

Fomentations are of but little efficacy to "open obstructions, dissolve hard tumours, assuage paine and to digest and discusse humours."

Primrose does not absolutely speak against the custom of the common people and also very many physicians of laying "to the soles of the feet young pigeons or whelps cloven through the middle of the back . . . I know it hath been often times done to the exceeding great commodity of the sick." But this remedy is ordinarily used in an application to the head in "diseases of the braine as the frensie and madnesse." Galen administered "cowparsenep, thyme, wild thyme and other such hot things boyled in oyle" but "the modern Physitians use young pigeons and whelps cloven downe the back and the lungs of a Ramme yet warm." But Primrose can see little advantage in applying such things to the sole of the feet, "nevertheless I doe not absolutely speake against the applying them to the soles of the feet, because it may doe a little good and cannot doe harm: and it is a usuall thing for them of Montpeliers to apply young pigeons cloven through the middle together with some cordiall powders to the region of the heart after the manner of an Epitheme to comfort the heart and refresh the spirits."⁵³

The weapon salve is the last "remedie" to be discussed, "the invention of some Germanes, especially of Theophrastus Paracelsus when Goclenius followed and also Grollius . . . and others." It would be marvellous if nature "revealed it not to Adam, the Patriarchs, holy men, Jewes, the primitive Christians and the most learned men; but hath revealed it to drunkards, whoremongers, dicers, such as the report goes Paracelsus was."⁵⁴

The first ingredient is *usnea*, the "mosse that growes upon a man's skull," Crollius preferred that of a man who had died a natural death, Hartmann of one that had been hanged—Primrose does not believe in it, nor does he think "the blood and fat of a man" helps any or the "fat of a pig, a bore or a beare" used instead. Some use Egyptian Mummie also and Paracelsus "Mummie of the Gallows . . . flesh of a man that was hanged." Paracelsus used "Lineseed oyle, oyle of Roses, and Bole-armoniack and Crollius, earth wormes washes, the braine of a bore, redde Sanders and the blood-stone."

Any virtue the ointment has depends on the "Divell . . . the Prince of the world," and Primrose will have none of it.⁵⁵

Nor can "the seventh sonne . . . cure the Kings-Evill . . . by touch alone."

True, Galen commends the root of Peionie hung about the neck for the Epilepsy, others the stone called aetites bound to a woman's thigh to facilitate the birth, but "the power of cureing the King's Evill is by the blessing of God granted to the Kings of great Britaine and France which is denied to other Christian Kings"—even a "Usurper if he should depose a lawful Prince" would not obtain this power. And it is incredible that it should be given to those who are so common as Seventh sons—of course these fellows may cure by the help of the Devill who may use "naturall meanes whose vertues hee is not ignorant of" if Physicians are who do not "certainly know the whole power of Nature." If these do cure, "it ought not to be attributed to the uncertain vertue of him that touches it but to Nature which Hippocrates calls the curer of Diseases."⁵⁶

So ends this extraordinary work. The most remarkable thing about it is the enormous learning of the author, he seems to have exhausted both ancient and (then) modern medical writings;⁵⁷ his quotations are apt and so far as I have tested them accurate.

Leaving out bleeding about which the whole medical and lay world was insane for many generations, the conclusions of the author are generally sound, but in many instances his reasoning is to our modern minds fantastic.

Many of the errors he attacks are still in vigour among the common people—the microscope is steadily destroying them, as authority and logic could not.

NOTES.

1. A full account is given of Dr. James Primrose and his works in the Dictionary of National Biography, Vol. XLVI, pp. 381,382; see also Watt's *Bibliotheca Britannica, sub voc.*, "Primrose, James, M.D., of Oxford."

Dr. Handerson, in a note to Bass' *Hist. Medicine*, Am. Edit., p. 530, Note 1, says that he in 1630 proposed to King Charles I, "that if His Majesty would institute a lecture at Westminster or London he (Primrose) would teach the same four times a week without payment because many were constrained to go out of the Kingdom to learn Physic." There seems to be no record of any acceptance of this offer. The D. N. B. knows nothing of this story.

2. Robert Wittie, M.D., F.R.S., is not known to the D. N. B. or the Gen. Biol. Dict. Bass, *Hist. Medicine*, Am. Edit., says (p. 546) that he died at Scarborough, 1684. His works are detailed in Watts, *sub. voc.*; in addition to this translation, he published at London, 1640, a 12mo translation in English of Primrose's "Antimoniall Cup twice Cast"; most of his other works in English and Latin were in defence of the waters of the Scarborough Spa. In the *Phil. Trans.* for 1694, Abr. III, p. 612, is printed a paper by Witte, "Anatomical Observations respecting a stone in the left kidney." He had some facility in Latin, Greek and English verse. See also Allibone, iii, 2809. "A New Year's Gift for Dr. Wittie," appeared in 1670.

3. These are printed at the beginning of this volume. The Latin verses are elegiacs well constructed. The following is a translation as literal as the idioms of the two languages permit:

"To my most distinguished friend Doctor Wittie on his Translation of Popular Errours:

Of a surety, books have increased in so vast a host
That now scarce a single cuttle fish swims in a whole sea.

More strongly the arduous rise from wound in battle;
And the more she is forced back, the mightier the Hydra returns.

Ah! with what Anticyrae (hellebore) with what herbs is curable

This wretched plague of writing, this eager desire?

India alone has medicines for such a disease,

And is said to lament our ills.

Compassionate, she gave the useful drug of Tobacco,

Which is more potent than the hellebore of Aetius.

And now you see the odorous taverns reeking with books,

Odor, O how precious to the nostrils of the learned!

With this gift I believe the herb especially delights,

Here thy Doctor sends these clouds to the stars.

Ah! What then wilt thou my timid, timid paper effect?

Even now the funeral musician prepares thy obsequies
Into this book thou wilt enter as the door of a sacred asylum

Which neither flame nor the wrath of Jove will ever destroy."

(Rather a eulogy of Tobacco than of Dr. Wittie, perhaps.)

The English poem is in praise of "The Good Interpreter." Marvell reprobrates Caelia and other translators, and ends by saying of Wittie:

"You have Translations Statutes best fulfil'd
That handling neither sully nor would guild" (gild).

Sir Robert Leedes writes four elegiacal verses in Latin; Anth. Stephanson, M.A., two in Greek and two in Latin, and also a dozen Latin elegiacs; Rich. Roper, M.A., eight verses in English followed by two in Latin (rhyming); Rich. Rakes, M.A., eight Latin elegiacs; John Burnsell, M.A., one English poem of twenty verses, all speaking of Dr. Wittie's merit; and the cele-

brated Dr. Zacutus Lusitanus of Amsterdam (Abraham Zacuto, a Lisbon Jew, a partisan of the Arabian school and of Galen), write a laudation of the original work.

4. For example, I find "physitians" and "physicians," "dayes" and "daies," "do" and "doe," "bee" and "be," "then" and "than," "he" and "hee," "leg" and "legge," "breast" and "brest," "owne" and "own," "chymicall," "farr" and "farre," "very," "verie" and "verrie," "henne" and "hen," "cocke" and "cock," "leafe," "leaffe" and "leaf," "brasse" and "brass," "drunke" and "drunk," "tenne" and "ten," "smoake" and "smoke," "good," "goode" and "goodde." There are extraordinary eccentricities in orthography in common words, sometimes even in proper names.

5. "Cure" is here, of course, the Latin "cura," "care," not "healing," "curatio."

6. The Council of Tours, 1163, produced a revolution in the practice of surgery. Before its celebrated decree much of the surgery was in the hands of the regular and secular clergy; after the decree, this fell to the surgeon.

7. "Cullis," a strong broth made of meat, fowl, etc., boiled and strained, like beet-tea, the usual kind.

8. A preparation of sweet blanched almonds and water, formerly of great vogue as an "emollient."

9. "Charlatan," from the Italian "ciarlatano," a chatterer, is, of course, good French as it is good English.

"The grand old name of gentleman,"

Says Tennyson, "Defamed by every charlatan."

"Ceretan" seems to be a local or patois word—Primrose was educated in Bordeaux and Montpellier, Littré does not recognize the word, and it does not appear in French Canadian, that repository of old French.

9. "Triacle," our treacle, from "theriacum," an antidote to the poison of "ther" or "therion," an animal, often snake.

Nero's physician, Andromachus, had a wonderful prescription which he celebrated in Greek elegiacs; it was made of viper's flesh and many plants along with honey, the celebrated "Theriaca"; his son of the same name, had some 24 remedies for earache, many for toothache, bleeding, etc., and was a pharmacist of renown. Servilius Democrates, a Greek physician who lived and practised at Rome in the first part of the first century after Christ, wrote his prescriptions in iambic verse, and they ranged from antidota through malagmata (emollient plasters) to tooth powders. The name "Mithridate" was given to the medicine as being based upon the prophylactic against poison used by Mithridates VI, King of Epirus. Every physician of note made his own improvement. Matthiolus (Pietro Andrea Mattioli of Florence, 1501-1577) put 120 ingredients into his special preparation. See my Article in the *New York Medical Journal*, September 27, 1919.

It is at least amusing to note that Amyot, Dict. de Dochez, speaks of "Ces charalatlans, triacleurs et basteleurs, joueurs de passe-passe."

10. In this chapter is quoted a saying of Cardan, "the wisest fool and the most foolish wise man" of his time, 1501-1576, that amazing compound of philosophy and quackery, a master of medicine, mathematics (the school boy still uses "Cardan's Rule" in solving cubic equations), philosophy, chess, astrology, alchemy, charlatanism.

"Cardanus reports that if one wash his hands in his own urine the fire shall not hurt him." It is well known that one may with impunity put a moist hand into molten metal but I should hate to risk a fire.

11. Primrose complains that "in many places, Surgeons are wont to arrogate to themselves the function and office of Physicians." For long surgeons were "the lower branch of the profession," unlike Physicians they could sue for their fees, because their fees were pay for services not a honorarium.

Primrose thought the custom of some countries "a

very good and laudable" one, that "no man doth practice surgery but he that is Doctor of physick."

12. Galen did dispense his own medicines when at Pergamus but ceased to do so in Rome as he found there skilled pharmacists. Of Antiochus Pacchius (not Antonius, as Bass has it, p. 158, n. 1), who flourished about the beginning of the Christian era, not much is known. He is mentioned by Galen, Scribonius Langus, Aetius and Marcellus Empiricus. He made a large fortune by the sale of a medicine invented and manufactured by himself, the composition of which was kept secret during his lifetime; left in a legacy to the Emperor Tiberius, he caused copies to be placed in all the public libraries. A "Hiera" is a purge, generally with aloe, Jean Fernel (1497-1558), a physiologist, a Galenist and anti-mercurialist.

13. Primrose quotes against this divination, Gordonius (Bernard Gordon, professor at Montpellier, 1285-1307, the first medical writer who mentions spectacles), Heurnius (Otto Heurnius, 1577-1650, of Holland), Forestus (Pictier van Forest, 1522-1597), of Alkmaer, Holland), Sennertus (the celebrated Daniel Sennert [1572-1637], who wrote six folios and "believed in compacts with the devil and witchcraft"), Fuchsius (Leonhard Fuchs, 1501-1566, of Tübingen, a follower of Vesalius, who wrote Commentaries on Hippocrates and Galen; he achieved fame by his successful treatment of "the English sweating-sickness" at Anspach, but his greatest work was botanical—the Fuchsia is called after him); Arculanus (Giovanni D'Arco, ob. 1484, of Bologna and Padua, an anatomist and surgeon, it is related of him that he filled teeth with gold), and many others.

14. Abd El Malik Merwan Ebn Zohr (1113-1162), "The Wise and Illustrious," almost certainly a Jew, born near Seville, Spain, who practised operative surgery, then considered disgraceful for a physician; he was eclectic and ventured to criticise even Galen.

15. A story old as the hills and told "in divers places of sundry Physicians . . . always ascribed to some Physician that is dead." It will be remembered that Hippocrates, Aph., Lib. iv, 70, says that urine like that of a beast indicates headache present or imminent.

16. In one of Hippocrates' undoubtedly genuine works, De Morbis Popularibus, Lib. iii (Kühn's Ed., vol. i, p. 467), Galen's undoubtedly work, de Differentiis Febrium, Lib. i, cap 2 (Kühn's Ed., vol. vii).

17. Galen at least hints at the contagion of the plague in the work just mentioned, Lib. i.

18. The "noble parts" are the parts without which life is impossible, the heart, lungs, etc. The thoracic viscera were always "noble parts," sometimes in distinction from the "base parts," the abdominal viscera; but sometimes the intestines were called "noble."

19. Readers of Frazer's "Golden Bough" will remember that in certain uncivilized tribes, the husband takes to his bed when his wife brings forth a child. The explanation, such as it is, is curious.

20. Jacobus Hollerius (Houillier), 1498-1562, of France, and Guillaume Rondelet of Padua, 1507-1566 (Rabelais' Rondibilis?).

21. The late Sir Henry Thompson wrote very strongly—not too strongly—of the wholly vicious and often disastrous practice of good and loving wives given to their aged or aging husband nourishment, "to keep up their strength," beef tea in drinks, etc. Hundreds of husbands have been killed by just such attentions.

22. Asclepiades Bithynus from Bithynia, practiced at Rome at the beginning of the first century, B. C. He had been a teacher of rhetoric but not being very successful he turned to medicine. He allowed his patients anything they wished and was very popular. He laid a wager with Fortune that he would never suffer from any disease; he won it, for he lived to a great age and died from an accident. So says Pliny, Hist. Nat., Lib. vii, c. 37. Si non è vero, è ben trovato. Galen's rather grudging permission to taste fruit is in his "Ad Glau-

conem de Medendi Methodo," Lib. 1 (Kühn's Ed., vol. xi), an undoubtedly genuine production.

23. The posset of which English literature is full is almost obsolete in this country. It was made of boiling milk, curdled with ale, spirits or wine, and generally with cinnamon or other spice added.

24. Pedanius (or Pedacius) Dioscorides (A. D. 40-90), or Anaxarba, a botanist of note, his chief work was on Materia Medica. Primrose gives his prescription for a posset. "Lac Scissile." Paulus Aegineta, a Greek physician (A. D. 625-690), of whom Bass gives an excellent account, pp. 205-208: Aetius, "the Atheist," an able physician, often called a quack, 502-575. Bass, pp. 201, 202.

25. I find that the supposed statement of Galen is taken from the certainly spurious "De Simplicibus Medicamentis ad Paternianum" (Chartier's El., vol. xiii).

26. For Sennert, see note (13) *suprà*.

27. "Concoction" practically the same as "digestion"—the old physiologists recognized three kinds:

(a) The first Concoction in Stomach and Intestines (chypo poetic).

(b) The second concoction of the chyle into blood (haemopoetic).

(c) Secretion from the blood.

28. "Consumption" in those days was a very comprehensive term. Primrose here speaks of phthisis which he describes as "an ulcer of the lungs consuming the substance of the body with a gently continual fever . . . disease much to be bewailed and hard to be cured, yea perhaps impossible."

29. Hippocrates' advice is in his "De Morbis Popularibus," I lib. 7 (Kühn's Ed., vol. viii, probably spurious); of Pythocles nothing seems to be known except what is reported of him by Hippocrates *op. cit.*, Lib. 5 (one of the works probably spurious). Gordonius is Bernard Gordon (see note 13. *suprà*). Ioubertus is Laurent Joubert, 1529-1583, of Valence in Dauphinee, Chancellor of Montpellier, of whose work on Common Errors in Medicine 6,000 copies were sold in six months. Hollerius is Jacob Houiller, 1498-1562, a semeiologist of some note.

30. Si bene commemini causae sunt quinque bibendi—
Hospitis adventus, praesens sitis, atque futura.
Aut vini bonitas, aut quaelibet altera causa.

"As I think

There are five reasons why men drink
Good wine, a friend, or being dry,
Or lest you should be by-and-by,
Or any other reason why."

31. For Gordonius and Fuchsius see note 13. *suprà*; Actius, note 24 *suprà*; Rondeletius, Guillaume Rondelet, 1507-1566, a professor at Padua (Rabelais' Rondibilis?); Riolanus, probably the elder Riolan, 1538-1606, a follower *sub modo* of Paracelsus; Savonarolo, Michael Savonarola of Ferrara, a celebrated professor of medicine 1462; Rubeus I fancy, Eustachio Rudio, 1611, of Padua; Valleriola Francis Velleriola, 1504-1583, of Valence and professor in Turin; Mercatus, Luis Mercado, 1520-1606, Physician-in-ordinary to Phillip II of Spain; Amatus Lusitanus, Juan Rodrigo de Castello Bianco, nat. c. 1510, a teacher in Ferrara and later in Thessalonica.

32. Rodericus à Castro, of 1627, a Portuguese Jew practicing in Hamburg, published in 1693 a great gynaecological treatise. I do not know Petrus Salius.

33. Galen's advice is in one of his best books "De Sanitate Tuenda" Lib. i, v (Kühn's Ed., vol vi); Paulus is Paulus Aegineta. Plato's remarks are in The Laws, Lib. ii; Hippocrates' in "De Victus Ratione" (Kühn's Ed., vol. i, probably spurious).

34. Hippocrates, Aphorisms, Lib. ii, 21, says "liberal wine drinking cures hunger"—the word is "limon" and often means boulimia. Galen Comm. 18, to the same effect, Hippocrates, Aph., Lib. vii, 48, says "liberal wine

drinking and bleeding cure strangury and difficulty of micturition" (Wittie uses the Saxon monosyllable).

35. Words of "Vates, Phoebi nondum patiens" to Aeneas, Vergil, *Aeneid* vi, 1, 94.

36. Prodicus. I presume the Sophist ridiculed by Aristophanes in the *Birds* and the *Clouds*. Hippocrates de *Epidem*, Lib. vi. Plato mentions Herodicus in the *Phaedrus*; he was a physician from Thrace and was also a Sophist and a teacher of gymnastics. Plato's annotators read a passage in the *Phaedrus* as indicating that he made his patients walk from Athens to Megara and back again, more than 70 miles; and a passage from Hippocrates, de *Morbis Vulgaribus*, Lib. vi, c. 3, has been considered to confirm this statement. Littré thinks we should read "Prodicus" not "Herodicus."

37. Raimundus Lullius is Raymond Lully or Raimon Lull, 1235-1315, a Catalan mystic, missionary and (perhaps) alchemist, more than half insane. Some of the works attributed to him seem to be spurious, perhaps the works of a Raymundus Lullius Neophytus, who lived about 1440. Villanovanus, Arnold of Villanova, Arnould de Villeneuve, 1240-1313, a physician, alchemist and astrologer whose birthplace is unknown. He has been, incorrectly, credited with the discovery of sulphuric, nitric and hydrochloric acids. He taught at Paris, Barcelona, and Montpellier and was physician in ordinary to Peter III of Aragon. He was the first to administer brandy which he considered Elixir Vitae. Crato is Johanna Crato von Krafftheim, 1519-1586, born at Breslau, practised there and at Augsburg. He became body physician to the Emperors Ferdinand I, Maximilian II and Rudolf II. Erastus is Thomas Erastus, 1523-1583, professor in Basel and Heidelberg, the chief antagonist of Theophrastus von Hohenheim, Paracelsus. Spagiricall the modern "spagyric" from "spagyricus" a word apparently invented by Paracelsus himself to denote his theory that inorganic chemistry furnished all medicines worth while. "Spagyric" often means "pertaining to alchemy."

38. Antonius Musa cured Augustus by cold baths and cold drinks (B. C. 23) for which he received a large sum of money, permission to wear a gold ring and a statue near to that of Aesculapius. By the same treatment a few months after he killed M. Marcellus; he is believed to be Vergil's Iapis dilectus, *Aen*, xii, 391. He had been a slave and was also Horace's physician.

39. If it will be remembered that it was the contention of Samuel Thomson, the founder of the Thomsonian School of Medicine early in the last century that America furnished remedies for every disease in America.

40. Lemnian earth, Lemnian bole, Sphragide, sigillated earth—"the best of medicinal carths," used internally as an astringent and externally as an absorbent and astringent. It was a variety of reddish kaolin, originally from Lemnos. Armenian bole was a similar article better known in England—it is called "Armenian Stone" in this book. Dittander is the pepperwort, *Lapidium latifolium*, which "defends and keeps us from serpents," "poor man's pepper."

41. Giovanni Filippo Ingrassias, 1510-1580, of Recaluto in Sicily, professor at Naples, a most accurate osteologist and an accomplished myologist; de Vega gave him the silver bowl worth 50 crowns in which he had prepared the drink.

42. Sanctorius is Santorio Santoro, 1561-1635, professor at Padua, also later practising at Venice, an indefatigable and accurate observer. Mesue, the elder Janus Damascenus, 780-857, who recommended mild laxatives, tamarinds, etc., for the strong purgatives of the Greeks, scammony, etc., he thought small pox a fermentation of the blood necessary for all men. Rufus, Caius Valgius Rufus, B. C. 12, or perhaps Rufus Ephesius, 98-117, who wrote several medical treatises.

43. Conciliator and Palmarius I cannot trace, Rorarius is Nicolaus Rorarius (Rorario, circ. 1572) of

Udine. Gortia is Gorizia in the Trentino. Hartmannus is Johann Hartmann of Amberg the first German professor in Marburg of Iatro chemistry, i. e., the pharmacy of Paracelsus. The "sublimate" is corrosive sublimate Hg₂ Cl₂; the "precipitate" either the red oxide or Hydrag, ammoniatum, "sweet mercury" probably the "mighty chloride," calomel, Hg₂ Cl. *Pilulae Barbarossae*, mercurial pills with added rhuarb, scammony, musk and other vegetable ingredients (pretty much *ad lib.*) For Dioscorides, Aetius, Fernelius, see notes *suprà*; Galen and Avicenna are well known.

44. Let me bear witness from personal experience to the accuracy of Dr. Primrose's observations, *Crede experto*.

45. Nicholas Monardes of Seville, Spain, circ. 1580, described the medicinal plants of the New World; he was the first, 1569, to mention coca.

46. For Triacle and Mithridate see note 9 *suprà*; of *Aqua celestis*, I know nothing; *Aqua Imperialis* was an acid drink made of cream of tartar sweetened and flavoured with lemons or lime. DuCange speaks of wines called "Maria"—here, however, Tolu seems to be meant—or possibly the Methylin of the Queen or the *Aqua Mirabilis* mentioned by Sir Kenelm Digby. "Pearls and Silk" I cannot trace. Carrabe is caraway, the Scots and dialectic "carvey" or "kervic"; *Terra Sigillata* in Lemnian bole, earth or stone see note 40 *suprà*; *Bolearmoniac* is Armenian bole; *Borage* and *Bugloss* are well known plants; *Myrabalan*, now generally *Myrobalan*, the astringent, plum-like fruit of a species of the *Combretaceae* formerly used medicinally. *Hyacinth* is probably the Lily *Hyacinth*, a species of *Squills*. Wine of *Squills* was known as an "easie vomit," "vinegar of *Squills*," "Oxymel of *Squills*," may not yet be effete. Melancholic humour is the so-called "black bile."

47. The Bezoar Stone or Bezoar Stone is a calculus in concentric layers formed in the stomach and intestines of some animals, generally remnants—the *lapis bezoar orientalis* generally in goats and antelopes of Persia, the *lapis bezoar occidentalis* generally in llamas of Peru, German bezoar in the chamois—it has no medicinal properties. Such concretions are "cunjer-stones" among the colored people. "Mad Stones" for the prevention and cure of hydrophobia I have myself seen a specimen of—it was quite as successful medicinally as the more usual decapitation of the erring dog. Averrhoes, Abul Welid Muhammed Ben Ahmed Ebn Roschid of Cordova, the Mohammedan physician who had the greatest influence upon the medicine of his own and succeeding times—he died in Morocco in 1198. Avenzoar Abd el Malik Abu Merwan Ebn Zohr, 1113-1162, "The Wise and Illustrious," a physician (probably) a Jew of Spain—Averrhoes was his pupil. Pliny's extraordinary story of the tear of the Hart (*Cervus*) will be found *Nat. Hist.*, viii, 32, 50. "Amatus the Portugall," see note 31 *suprà*—"Portugall" or "Portugal" is an obsolete form of "Portuguese"—it was used as late as 1707. See *New Oxford Dict.*, *sub voc.* Rhazes Mohammed ebn Zakarijah abu Bekr er Razi, 850-923, originally a zither-player, then a physician and professor at Bagdad, where he died poor, blind and neglected. *Wolves bane*—*Wolf's bane*—aconite, monkshood—aconitum. *Napellus* is the officinal aconite, *uncinatum* is the wild variety.

Garcias ab Horto, Garcia del Huerto or da Horta, a Portuguese physician resident in Goa, India, a botanist of some note in respect of Oriental flora. Josephus Acosta (really d'Acosta), 1539-1600, a Spanish Jesuit who lived for a time in the East Indies then in Peru; returning to Spain he was in favour with Philip II. He died at Salamanca. *Vicugnae*, the *Vicuña*; *Tarugac*, the llama (?), *Ganaci*, the *guanaco*, *Paci*, the alpaca. Valerius, Franciscus Valerius, fl. 1565, wrote on uroscopy, the pulse, fevers, and on semeiology generally.

Andreas Laurentius, a celebrated French physician, best known for his work (1609) "*De Mirabili*

Strumarum Sanatione," in which he described the cure of scrofula, "the King's Evil," by the touch of the French king (see my article, "Touching for the King's Evil," and see later in the text).

"Melancholy," "black bile," "gloomy humour," etc.

48. Aristotle, Aelian and Pliny the Younger are well known. Caius Livius Solinus lived in the third century A. D.; he was a Roman grammarian who wrote a geographical work largely based upon Pliny. Ludovicus Vartmannus I do not recognize—the Dictionaries and Bass do not know him; Scaliger is Julius Caesar Scaliger, 1484-1558, a noted Italian humanist, philosopher and scientist. Gesner is Conrad Gesner of Zurich, the "German Pliny," 1516-1565, who practised in Zurich, Strassbourg, Paris, Venice, Augsburg and other places, ending as professor of natural history in Zurich. Fallopius, Gabrielle Fallopio of Modena, 1523-1562, professor at Ferrara, Paris and Padua, a noted anatomist, amongst whose discoveries are the foramen ovale, aqueductus vestibuli, lamina spiralis, Poupert's ligament, Fallopiian tubes in the human, etc.; his saying is proverbial—"The road to surgery lies through anatomy." Agricola is Rudolph Baumann or Agricola, 1442-1485, of Wasserburg, a noted humanist. Island is Iceland.

Piny's account is in *Nat. Hist.*, Lib. XI. c. 106 (46), i. c. 21; Aelian's, *Nat. Hist.*, Lib. VII. c. 3; IV, cc. 12, 44; V. c. 22.

The unicorn's horn seen by Primrose at Hull was probably from a narwhal; sometimes antelope's horn was so called.

49. Distilled waters were all more or less alcoholic, the original "home-brew."

50. An Apozeme is simply a decoction or infusion; a Julep, a sweetened drink of any kind, often a vehicle for or a succedaneum to medicine.

Augenius is Thomas Augenius, Tomaso Augenis, professor in Turin 1527-1603; Quercetanus, Joseph du Chesne, a Garcon noble, physician in ordinary to Henry IV of France, 1521-1609; the first in France to recommend the antimonial remedies of Paracelsus.

Duretus, Louis Duret, born in Brescia, 1527, of a noble family, practised medicine in Paris where he was physician in ordinary to Charles IX and Henry III; he died 1586; he had a son, John, almost equally celebrated. For Sanctorius or Santorius, see note 42 *supra*.

Laurenbergius I have not identified; but he should be known if only for his Hog-lice remedy for vesical calculus.

51. Artemisia is Wormwood, Artemisia Absinthium; the term Mugwort is also applied to that species, but more generally to Artemisia vulgaris, Motherwort; Stoechas is French lavender.

52. Meconium, from "Mekon," the poppy, was used in the sense of inspissated juice of the poppy and the first foeces of the infant, by the Greeks. Lachryma is a gum, like a tear; Dioscordium and Philonium, medicines called after Dioscorides and Philo. Mnesidemus is probably Mnesitheus of Athens, a noted physician and author of the fourth century B. C., often quoted by subsequent writers—he recommended the practice of tipping—Galen speaks highly of him.

53. Epitheme, any kind of moist or soft external application, a poultice, less used now than formerly. John Wesley recommended placing a live whelp on the abdomen in cases of volvulus, appendicitis.

54. Goclenius, Rudolph Goclenius, 1577-1628, professor of Marburg, Jesuit and medical savant; he wrote on private hygiene and believed in Paracelsus' doctrines. Crollius, Oswald Croll, a Hessian, 1560-1609, a physician in Anhalt, whose work, "Basilica Chymica," has twenty editions.

55. The extraordinary superstition of the "weapon salve" lasted long. Sir Kenelm Digby had a sympathetic powder made of vitriol and gumtraganth. (See my article; Sir Kenelm Digby and his Powder of Sympathy, *N. Y. Medical Journal*, February 19, 1916, also my article, The Weapon-Salve, *Canadian Practitioner*, July, 1922.

Sanders is Sandalwood of three kinds, red, white and yellow.

56. Actites, the eagle-stone, a hollow nodule of argillaceous oxide of iron, having a loose nucleus, which derived its name from being supposed to have been found in an eagle's nest—it had many medicinal and magical properties.

57. I have counted 107 separate authors cited—Greek, Roman, Italian, Spanish, French, Dutch, German, Portuguese, Jewish, Arabic, and one Englishman, Gilbert (Gilbertus Anglicus, 1290, who wrote the compendium "Laurea Anglicana," following the Arabian and the late Galenic School—the earliest English work on medicine ever published). Primrose cites not only medical writers but also naturalists, Aristotle, Pliny, Scaliger, Gesner, etc.; and occasionally general literature, Vergil, Hector Boethius, etc. Among medical writers he quotes Galen on almost every page and Hippocrates very frequently. Celsus is hardly mentioned which indicates the great effect of the almost contemporary attack on him by Paracelsus, more destructive than is generally understood; Paracelsus is quoted very often generally in reprobation. Primrose does not confine his quotation to the writers who were well known, such as Fallopius, Versalius, Sanctorius, Sennertus, Laurentius, etc., but he quotes from authors always obscure and now quite forgotten. Who knows Amatus the Portugall, Dodonaeus Masue, Hartmann, ab Horto?

MOSQUITO ELIMINATION IN NASSAU COUNTY.*

By ARTHUR D. JAQUES, M.D.,

LYNBROOK, N. Y.

THE work of mosquito control in Nassau County is carried on under the auspices of the county government, the cost of the work is maintained by the county and the amount levied is limited by act of Legislation to $\frac{3}{8}$ mill per \$1.00 of assessed valuation. This provides for mosquito work about \$72,000 for this present year.

Nassau County is roughly a square 20 miles on each side with the Sound on the north having 800 acres of marsh land. The ocean and bay on the South have 19,000 acres of salt marsh. On the marsh there are salt pools each of which is a potential breeder of millions of aedes sollicitaus, the mosquito which flies long distances (40 miles).

This problem of getting rid of thousands of breeding places involved the cutting of miles of ditches in the meadows, each ditch being 10"x28-30" for the mains and 8"x16" deep for the spurs to the salt holes. To date over 5,000,000 feet of ditches have been installed at a total cost of \$100,000; leaving approximately 1,500,000 feet yet to be cut in the salt marshes of the eastern end of the county. The cutting of the ditches does several things, 1, drains the salt pools; 2, allows of the ebb and flow of the tide of 4-5 feet twice a day; 3, allows of the entrance of killi fish which devour thousands of larvæ; 4, drains the meadows making them dry to walk on, and 5, increases the production of salt or marsh hay by twice its former growth.

* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 19, 1922.

After cutting, the ditches are continuously patrolled during the breeding season and sods or obstruction in the ditches removed where they have drifted into the ditches. Ordinarily the sods "grow fast" to the meadow in one season.

The ditches are cut by hand at present, at a cost of .02 per linear foot, as against .325 for contract work by a machine. One man will cut by hand 1,500 feet a day with the new spade devised by Mr. Demott, as against 5,000 feet a day by the machine cutter.

The work already done has given results in that there is no breeding on the meadows already taken care of and no mosquitos are found on the wing till the *Culex pipiens* or house mosquito begins to breed and hatch, which is about June if there is warm weather. This presents another problem which is being met by a house-to-house patrol of the numerous villagers. This is expensive and this year three villages will be taken care of by inspectors.

Any place in which water can stand for 10 days in the summer time is a "good" breeding place—tin cans, rain barrels, manure barrels, manure pits, gutters and cesspools. In Freeport last year it was found that out of 2,400 cesspools inspected 1,400 were breeding mosquitoes; the mosquito lays eggs through holes in the cesspool top and the eggs hatch and produce mosquitoes in 10 days. This problem is one which any village or hamlet in the State has to face and one which should be taken care of in order to secure more comfort and better health.

The swamp mosquito or *Aedes sylvestris* is taken care of by systematic patrol of the swamps by upland inspectors who arrange for the oiling of ponds with "mosquito oil," for the drainage of those which can be drained, for the filling of some, for the lowering of others, during the breeding season and for the cleaning of the grass and sedge from the banks of overgrown ponds in order that there may be no harboring places for the eggs or larvae where oil cannot reach the surface.

The malaria problem is one which interests every one living in country districts, for the first question asked by a prospective summer resident is, "Is there any malaria here?" Of course the usual reply is that there is none. Nassau County could not boast of this condition previous to 1916, as malaria was so prevalent on the north shore that the government refused to allow of the establishment of a camp in a certain locality. Four communities in which records were kept showed 465 cases in one year. The anopheles were found everywhere, not only on the north shore but on the south side, breeding in brooks and ponds and in slow moving streams. Places which were unsuspected showed the presence of the anopheles larvae. A lily pond in Mr. H. P. Davison's place on Peacock Point; a brook in Mr. Geo. W. Lofts'

place. Two anopheles in my own home led to the discovery of the larvae in a sluggish brook one-half a mile away. All of these breeding places were listed and regularly inspected and oiled before the larvae became nymphae to the end that last year there were reported three cases of malaria in Nassau County, two of which were of doubtful significance, as they were without confirmation by the microscope.

We are now arranging for a publicity campaign by placing in the hands of each school child in the county a Mosquito Manual. The cooperation of the school authorities has been obtained and it is hoped that much intelligent help will be given by householders in the control of breeding places.

A few words as to organization. An office is maintained at Freeport, with an executive secretary, chief engineer, 1 district inspector and 4 sub-inspectors. A salt marsh inspector takes care of the salt marsh areas and laborers are employed to clean and dig ditches. Upland inspectors are each given territory to supervise and laborers accompany each.

THE CORNELL PAY CLINIC.

By ALBERT WARREN FERRIS, M.D.,
WATKINS, N. Y.

IN November, 1921, the Cornell University Medical School, of New York City, organized and opened the Cornell Pay Clinic, with the co-operation of a special committee of the United Hospital Fund. This Fund aims to improve the standards of dispensary management and service, and is supported by the Rockefeller Foundation.

As reported by President George E. Vincent, of the Foundation, the essentials of the plan of the Pay Clinic are "Medical, surgical and specialist service by well-trained young doctors, who are paid for their work; supervision by the college faculty; instruction of medical students in the clinic; appointments with patients made by telephone or post to avoid waste in waiting; clinics, in addition to day sessions, open two evenings a week for the convenience of patients employed during the day; a charge of \$1.00 for each call, laboratory and X-ray plates at cost; a complete diagnostic examination for an inclusive fee of \$10 for patients referred by physicians."

About eighty of our brother physicians are now on the staff of the Clinic.

The United Hospital Fund reports that the Clinic during its first six months has given 54,656 treatments to 22,828 persons. It has been carried on at a monthly deficit of \$3,000 in addition to the former deficit of the Cornell

Medical College Dispensary. The Rockefeller Institute underwrote the initial deficit of the Clinic and has met the expenses.

The reason for the Clinic's existence has been thus stated by Dr. Vincent, president of the Foundation: "A modern clinic may serve the interests of both preventive and curative medicine. Persons may resort to it to make sure that they are well or to have their diseases recognized and treated. Diagnostic and treatment facilities are now available in cities and large towns for the rich and well-to-do and for the very poor, but self-respecting people of small means are too often at a loss for good medical aid. It is true that the leading consultants and specialists make concessions in individual cases, but this generous attitude of the profession solves only a minute part of the problem. The tendency to establish medical group clinics makes it easier to provide modern facilities at lower cost, but at best the fees are considerable, and many people hesitate to ask for a concession in charges. Hence the demand for a pay clinic for persons with small incomes."

Considerable ground for debate exists regarding the fairness of the scheme, backed by unlimited wealth that can stand tremendous deficits, as against the enterprise of the average young physician. The Clinic pays no rent, meets no charges for heat or light, or equipment, or library or general upkeep; underwritten deficit takes care of all of these; there is no overhead. How does the young physician's life struggle compare with this condition of things? The following thought must arise in certain analytic minds: Cornell University Medical School graduates many physicians each year, and in effect says to them on commencement day, "Find your patients if you can, for in addition to the treatment by many other dispensaries of hundreds of patients able to pay you a small fee, your own Alma Mater will gather into the Cornell Pay Clinic 22,800 patients every six months, and more as soon as we can enlarge our facilities. You will probably be driven to locating at a considerable distance away."

At the April meeting of the American Medical Association a resolution was introduced, looking to the amendment of the Principles of Ethics of that body, which was so draughted as to condemn certain "individuals or groups of individuals or institutions from soliciting patients by circulars or advertisements, as guilty of acts deemed unworthy of the approval and support of the regular medical profession." It was questioned by some if this resolution was aimed at the Cornell Pay Clinic among other institutions. The resolution failed of approval in the House of Delegates and was not adopted.

Deaths

BARCLAY, HAROLD, New York City; College of Physicians and Surgeons of New York, 1899; Fellow American Medical Association; Academy of Medicine; Member State Society; Alumni Bellevue Hospital; Assistant Attending Physician Bellevue Hospital; Consulting Gastro-Enterologist United Hospital, Portchester, and Northern Hospital, Mt. Kisco. Died July 25, 1922.

CRUMB, CHARLES WILLIAMSON, Utica; New York University, 1886; Fellow American Medical Association; Member State Society. Died June 18, 1922.

FISHER, W. HURD, Buffalo; Buffalo Medical College, 1919; Fellow American Medical Association; Member State Society; Buffalo Academy of Medicine. Died July 17, 1922.

GRANGER, WILLIAM D., Tuckahoe; Bellevue Medical College, 1879; Member State Society. Died July 30, 1922.

LASCOLA, ROSE M., Buffalo; University of Buffalo, 1920; Member State Society. Died June 11, 1922.

LOUGHRAN, FREDERIC WILLIAM, New York City; Albany Medical College, 1890. Died August 6, 1922.

MCCHRISTIE, WILLIAM, New York City; Long Island College Hospital, 1894; Fellow American Medical Association; Member State Society. Died July 20, 1922.

MARONEY, WILLIAM JOHN, New York City; Yale, 1900; Fellow American Medical Association; Member State Society; New York Obstetrical Society; Alumni St. Vincent's Hospital; Assistant Visiting Gynecologist St. Vincent's Hospital; Visiting Obstetrician St. Ann's Hospital. Died July 10, 1922.

ROONEY, ALEXANDER JOSEPH, Somerset, England; formerly Coroner and Practicing Physician of Brooklyn; Bellevue Hospital Medical College, 1867; Member State Society. Died July 31, 1922.

WASHBURN, THOMAS C., Spencer; Albany Medical College, 1889; Member State Society. Died July 12, 1922.

YOUNGLING, GEORGE S., New York City; Bellevue Hospital Medical College, 1890; Fellow American Medical Association; Member State Society; Consulting Physician Central Islip State Hospital. Died July 24, 1922.

District Branches

ANNUAL MEETINGS FOR 1922.

First District Branch—Not yet decided.

Second District Branch—Friday, November 10th, in Brooklyn.

Third District Branch—Thursday, September 28th, in Kingston.

Fourth District Branch—Tuesday, September 26th, in Schenectady.

Fifth District Branch—Not yet decided.

Sixth District Branch—Tuesday, October 3rd, in Elmira.

Seventh District Branch—Wednesday, October 4th, in Newark.

Eighth District Branch—Thursday, October 5th, in Niagara Falls.

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AN OPPORTUNITY.

“TO a little group of eight earnest men who met at the house of William Barker a century and a quarter ago, is to be accorded the unique distinction of having founded the first county medical society in the State of New York, anticipating by at least five years the formation of any similar organization in New York State.”

Thus writes Dr. Henry T. Kelly in his delightful historical sketch of the pioneer society of Westchester County founded in 1797.

What strikes one at once, in perusing the story, is the close similarity of the problems and conditions then confronting the Doctors and those which are now before the profession. Generically they are identical, but somewhat more complicated now owing to the vast changes in modern social relations.

We note the same unresponsive general public, incapable of grasping our ideals; legislators too often betraying indifference and an unwillingness to coordinate with the profession to maintain high standards as a mutual protection to the public and profession; certain types of qualified physicians who deliberately stand aloof or else are temperamentally apathetic toward medical organization, although quite willing to accept and enjoy whatever benefits might accrue from its activities, a rather unsportsmanlike attitude on the whole; and last, the medical pretender and outright charlatans who prey upon the superstition, the ignorance and credulities of the people, and may, if grouped in sufficient numbers, command the attention of legislatures and even receive the endorsement of many presumably otherwise decent citizens. In the light of recent legislative happenings and with vivid memories of the assaults of social reformers upon our profession, one is obliged to conclude that a century of endeavor has not materially improved our political status.

It is interesting to learn that so long ago as 1853, the Westchester County members, becoming disheartened and disgusted at the unsympathetic public, solemnly resolved, “That hereafter, the *prominent object* of this society shall be the improvement of its members in medical science.”

This was by no means a confession of defeat and a retreat, but rather a wise change in policy born of ripe experience and philosophical acceptance of conditions which existed then and which still obtain.

For some time past, the writer has shared with others in serious misgivings whether we, of the State Society, have not expended entirely too much energy and time in unprofitable discussions and dissensions over medical economics and whether we have not lost sight of “the prominent object.”

This is said without disparagement of those who have worked so earnestly and with such sin-

cerity of purpose for improvement. Alert attention to unfair and unjustifiable legislation is essential. It is a pleasure to add we are particularly fortunate in the personnel assigned to this important work.

To return to "The prominent object,"—the improvement of the members in medical science. Our annual scientific programs are of unmeasurable value to each and every one of us, but unfortunately hardly ten per cent of the members attend the various sections at the annual meetings. The other ninety per cent has recourse only to the *State Journal* which publishes the papers at monthly intervals the following year. This occasions oftentimes a long and vexatious delay between the presentation and publication, obviously unfair to the author and most unsatisfactory to those who, for one reason and another, were unable to hear the paper read and discussed. This fact alone should prompt us to take definite action to provide a more efficient distribution of our scientific material than now prevails.

Your president would like to suggest, at this juncture, the serious consideration of publishing our *Journal* at more frequent intervals, say, weekly. This would enable our editors to present the more important papers within reasonable time. This would enhance the value of the *Journal* as a medical magazine, attracting subscriptions from many not now affiliated with our society. Such a weekly could serve as the official reporter of the various voluntary medical associations such as the Academies of Medicine in various cities of our State. It would furnish a convenient vehicle for disseminating medical news, while still news, and especially the bulletins from our Legislative Bureau. Such a *Journal* would give opportunity for free expressions by any member in a department under the caption, "Correspondence."

As we are now constituted, but comparatively few of us can raise our voices either in protest or proposal where they can be heard by any considerable number. A department of this sort should be as free as possible from restrictions of the censor.

At the present time, there is no weekly medical magazine published in this great Empire State containing some 15,000 physicians of which approximately 10,000 are members of our State Society. New York is the most populous, the richest and commercially the most important state in the Union. We stand next to the American Medical Association in point of numbers enrolled, and may well claim to be one of the larger medical associations of the entire civilized world. The medical men of our State have at their hand an abundance of clinical material and are provided with all manner of hospitals, laboratories and Research Foundations in which to function and seek the truth. One is

impressed with the enormous potentialities of this group of physicians situated as it is and embracing as it does all kinds and sorts from the rugged, self-reliant and oftentimes amazingly efficient country practitioner to the ultrascientific investigator of our great medical centres. Membership in the Medical Society of the State of New York affords a common meeting ground, a democracy of all our varied types. A *Journal* of such an organization should completely and faithfully reflect our scientific experiences and conclusions; our aims and aspirations; our ideals and culture. An inspiration to all for better work, higher living and higher thinking.

There would be re-created among us a consciousness of leadership in medical affairs of which we are now so sadly lacking in many respects.

The question is not can we afford to have it? but rather can we afford *not* to have it?

ARTHUR W. BOOTH.

AN ESSAY IN IMMUNITY.

There were 20,000 deaths from diphtheria in the United States in 1921, of these, 871 were in the City of New York.

The Health Department of the City of New York is starting a movement to immunize all children between the ages of six months and six years, by injecting Diphtheria toxin-antitoxin.

Circulars printed in three languages are being publicly distributed giving statistics which show a reduction in the number of deaths from diphtheria, since the new preventive methods have been employed, from 1239 in 1919, to 871 in 1921. All physicians have been asked to cooperate by using the toxin-antitoxin in private practice and parents and guardians have been asked to bring their children to the Health stations if they have no private physician. After three injections certificates of diphtheria vaccination are given. When the child enters school, if a Shick test shows the child protected, a special "Diphtheria Protection Certificate" will be given.

The figures already seem to indicate a success comparable to that attained by vaccination against small pox and justify unlimited employment of another life saving effort.

The Medical Profession is again attempting protection by immunization against a deadly disease, and also, by diminishing the number of possible errors against the criminal ignorance of sub-standard practitioners.

In his forceful letter to this *Journal*, Dr. Wallace writes "The Chiropractor, when called before the Health Commissioner, stated that he did not know it was a case of diphtheria, and that as soon as he realized that it might be such, he refused to treat it longer. The affair

was taken to the District Attorney, but the mother refused to appear against the chiropractor and the incident seems to be closed."

Has the final curtain fallen upon this tragedy or in the interest of all the people of the State of New York should not the State Health Department refuse to consider the incident closed and ask the Attorney General to prosecute an investigation to the full limit of his authority?

In the light of current experience, immunity from the infection of pestilential bacilli seems to be more promising than immunity from the demoralization of pestilential ignorance.

N. B. V. E.

EASY MONEY.

In the course of our wide reading, for the benefit of JOURNAL subscribers, one of us found, in the Police Gazette of July 1st, the following advertisement which we have photographed:

ANYONE : : ANYWHERE

 **Men or Women**

You Can Easily Learn to **Be a Doctor**

We give you easy lessons by mail and give you a beautiful Diploma. We teach you to treat all kinds of sickness. You can open a Doctor's Office in your own home and

EARN \$5,000 YEARLY

Many Doctors earn \$5000 a year and more; some upwards of \$10000 a year. What others are doing You should be able to do

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N. B. V. E.

THE INDIFFERENCE OF THE MEDICAL PROFESSION IN LEGAL MATTERS.

Experience has taught us that when we want to really accomplish a task it is better to give it to a busy man; when we want it to be done more rapidly and with accuracy we assign it to a very busy man. The Medical Profession has taken this so literally that when legal enactment is threatened they sit back supinely trusting that their duly elected officials will do all that is necessary to protect them, and just as thoroughly determined that they will do nothing to protect themselves—a most instructive example of "expectant treatment."

Is it not about time that we awake to the needs of self-defense? Each time the Houses at Albany adjourn without actually declaring the practice of medicine to be a felony, the profession takes a long breath and with a feeling similar to Micawber, on the first of the year when he renewed his I. O. U.'s, they "thank God that's over."

The chiropractors think enough of legalizing their chicanery to pledge large sums for the furtherance of their interests—they pay the legal profession well to defend them—they appear both in person and by testimonial—they plead persecution and prosecution—they weep great salt tears on the shoulders of our law makers, while at the same time they are stealing the law makers' birthright, viz., safeguarding the public from quack and charlatan.

Let the Medical Profession start its own public propaganda. *Tell the people the truth.* We plead only for a just and proper legal restraint and a Regents' control which is applicable to all professions in the State. We think there is a difference between six years in the study and preparation for a medical career and six weeks in the preparation of a chiropractic. We don't believe that a chauffeur who could not write his name is qualified to be a full-pledged chiropractor or anything else in the above time. We may be prejudiced but we state it as an honest conviction.

On the other hand, ought we to blame the embryo chiropractic? It is a short cut to a gullible public—the Palmer School, which dominates the advertising, pleads his cause for him and does it well. He has only to raise funds enough to pay for the course, save sufficient to purchase a sign and table, and there you are—perfectly simple, simply perfect.

It is unfortunate that the Medical Profession does not take on self-insurance—pay dues to the State Society sufficient to maintain the proper machinery for its own protection. We pay two or three hundred dollars yearly as dues in a golf club—health insurance. Think of it—three hundred dollars for health and amusement, and the Medical Society of the State of New York gets

Five dollars each from its 9,500 members to carry on the work of survival, not to mention the 5,500 other physicians in the state who do not care enough about medical matters to even belong to the state organization.

We never will be able to do the medical business of the state on a Five dollars per capita basis.

Let the need of a greater revenue be agitated and published, and we believe that with better organization and a wider knowledge of facts and the good accomplished both profession and laity will realize their mutual obligation.

O. S. W.

DOCTORS' LIABILITY IN TREATING MINORS

In your private practice or in the hospital, do you always have the consent of the parents or guardian when you treat or operate upon a minor?

In a case decided in the Appellate Court in Texas, two physicians performed an operation upon the throat of an eleven year old girl at the request and instance of an adult sister, the patient having died while under the anæsthetic. The doctors were liable in damages for having performed the operation without the consent of the parents or guardian of the child. The consent of the adult sister was deemed insufficient.

There is no ruling on this point in this state. There is a strong reason to believe that the courts of this state would follow the Texas ruling. In such case, therefore, the doctor, irrespective of his skill, except in the case of emergency, would be held liable in damages for performing such an operation unless the parents or guardian specifically consented.

It is only fair to the surgeon in the hospitals that the hospital authorities should procure the written consent for all such operations before the case is turned over to the surgeon. In fact, this would be proper and good practice in all cases. It would be well for all surgeons to inquire before performing such operations if such consent has been given. This rule should be applied in all cases other than those of emergency.

The case quoted from Texas calls attention to the law hazard of practice that few physicians or surgeons have appreciated in the past, and which it is hoped this notice may cause them to consider for their own protection in the future.

Incidentally, have you procured a policy of indemnity under the State Society's plan with the Aetna Life Insurance Company against the law hazards of medical practice? If not, this may remind you to consult the local Aetna agent for that purpose.

G. W. W.

COMMITTEE ON PUBLIC HEALTH AND MEDICAL EDUCATION.

The Committee on Public Health and Medical Education having been granted funds from the general budget for clerical expenses is now in a position to transact business in a manner hitherto impossible. Organization is a *sine qua non* to efficient work; and with the means now at our disposal, we hope to accomplish things which will warrant our existence and help to make the Medical Society of the State of New York a more potent factor in solving the ever-increasing problems of health and medical education in the State.

It will be our aim to keep in touch with Committees similar to ours, of the County Societies, District Branches and Special Societies, and to work hand in hand with the Committee on Legislation.

We shall covet friendly relations with the State Board of Health, the Board of Regents, the Committee on Public Health of the Legislature and other public bodies, interested in the health and educational problems of the State and country.

It is evident that medicine throughout the world is now passing through a crisis, as it did in the latter half of the nineteenth century, when Rudolph Virchow wrote the immortal Cellular Pathology and master minds, such as the cultured Schoenlein and the gentle Kussmaul, found themselves under the necessity of adjustment to the newer thought. With progressive increase of education of the masses, the public is making greater demands upon the skill of the physician. With the steady advance of medical and allied sciences, the increasing tendency of the State to regulate the practice of medicine and the persistent efforts of chiropractors and those of other cults, backed by unlimited money, to legislate themselves into the right to practice among the people, we find ourselves in the midst of a crisis which can only be met by courage, steady heads and, above all, the determination to give unstintedly of brains, energy and means to cope with the situation. We have neither time nor place for pessimism; but we cannot escape the fact that, to dodge the issue, like the ostrich who buries his head in the sand and thinks himself safe, is to invite certain disaster. We must possess a clear and distinct understanding of the fundamental principles involved in the task which is before us; mistakes we cannot afford to make. First and foremost, we must stand together. If we are to exist as a great and honorable medical body, to function as the rightful custodians of the public health and be held in veneration and love by the people of our State, we must do all in our power to promote harmony and cohesiveness in the State Society. It is political suicide, not to say crime, for physicians in the State of New York to practice medicine year-in and year-

out, without affiliation with their County and State Societies. It is this type of stupid and selfish neglect which is making it possible for those who would do us harm to point to the fact that "an house divided against itself cannot stand." It is the prime duty of every member of the State Society to get after these delinquents and try to win them to a sense of shame for their shortsightedness and neglect of privilege. In our relations with the public, what we need and must have is a well-ordered household, with every evidence of a sincere and studied effort on our part to give real and efficient service, not alone in State medicine, but also as individual physicians in the daily routine of practice. In these days, medical education is not confined to the amphitheatre and hospital clinic; we have a duty to perform with the public. If he can convince the people of his *bona fide* attitude, it will be possible for the physician to successfully approach those of his *clientele* who can and will be glad to use their influence in defeating measures, evil in nature and a menace to the whole community. This is the very crux of our situation; for while the executive body of the State Society should, like the general staff of an army, organize and direct our campaigns, it is to the rank and file of medicine to whom we must look for the hand-to-hand work. When we can hold the confidence of the people; and when we, as individuals, have acquired the habit of bringing the people to an intelligent understanding of their needs, our legislators will begin to realize that political existence depends materially upon their attitude toward the great body of medical gentlemen in the State. The truth of this has been demonstrated in one of our counties within the last two years, where legislators failed to be returned to their seats in Albany, because of their attitude towards some of the evils we are trying to combat. Much credit is due to the doctors in this county who had the vision, energy and courage to personally "do their bit." They have shown us that man-to-man work, rather than oratory, glittering generalizations and cheap invective, makes the true road to success. If every county in the State could score the same results, our problems would be solved and we would live in a freer and more genial atmosphere.

Without intent of criticism, we feel that physicians need to be educated in the matter of their individual responsibility for the status of medicine in our State. While we keenly feel and appreciate the honor of holding any office in the State Society and are grateful for the confidence of our colleagues, we are none the less aware of the littleness of anything we can do, as compared with what can be accomplished by the harmonious and effective work of the great body-politic.

JOSHUA M. VAN COTT, *Chairman.*

THE FAMILY DOCTOR.

Many years ago the family physician was the only court of resort. He was the sure guide, the profound philosopher and cherished friend of the family, as well as the only source of medical wisdom. The cub-reporter had not evolved.

An ideal relation existed between him and his patients. He was chosen as counselor and friend by a young couple at the time of their marriage, and he officiated as obstetrician, moderate gynæcologist, general internist and near-neurologist.

His laboratory work was confined to elementary urine analysis, and the only specialists he knew were operative surgeons and the practitioners who limited their activities to the combination field of "Diseases of the eye, ear, nose and throat."

His diagnoses of "putrid sore throat," or "inflammation of the bowels," or "heart failure" were readily accepted on death certificates. His ideas of the proper place in a room for the hot air register, or of the right color of the proposed wall paper, decided those weighty matters to the full satisfaction of his clients. His ministrations during illness, or at the beginning or at the end of life were grateful and comforting. In short, he was trusted, respected, admired and loved by the people of his community, and the confidence he inspired on entering a sick chamber was of great value to the patient.

It seemed once upon a time that an ideal theory and method consisted of the selection by the family of a general practitioner who should be chosen for life, or until he retired from practice; who should make the fullest possible fruitful inquiry into the inheritance and antecedent history; who should study the tendencies as well as the transmitted susceptibilities, and also the cross strains admitted through marriages; who should make in addition psychological studies of mental adaptabilities and capacities and potentialities; to the end that he should not only advise as to the avoidance of disease and treat actual illnesses on their appearance, but also act as a guide in sports and physical development, in courses of study, and in choice of a vocation in life, as well as regarding the marriageable age of the individual daughters in the household and their preparation for the formerly popular profession of motherhood.

Upon his death or retirement from practice, his histories and case notes should be transmitted to the man who succeeded him as physician to this family or to the next generation thereof.

This scheme would be admirable if it were possible in more than a very few communities, or in any besides a sessile population. A physician with a broad, trained mind and an exceptional medical preparation would be invaluable and ideal in the relations just described. But

doubtless such a real "family doctor" was a rarity.

With the expansion of medical knowledge and the better comprehension of disease, with the tremendous growth of preventive medicine, the general practitioner became less valuable and entirely inadequate. It is a trite saying that one man cannot do everything.

As specialism grew, an inevitable and welcome result of the increase of technical knowledge, families began to ask for separatists and individualists in practice, and by degrees the general practitioner well nigh disappeared. The head of the family, with several specialists in mind, came to thinking and asking, when sickness appeared, "Whom shall I call in?"

For many years, in urban and suburban communities, the medical specialist has been summoned precisely as would be an efficiency engineering expert, to examine the conditions, point out the deficiencies, and suggest the remedy.

The internist favored by the family has been put in charge of the case to follow the specialist's directions, and to assist in securing convalescence, after the bright effulgence of the oracular specialist had faded upon his departure.

Thus the group system has grown. The internist is one of a group of physicians including aurist, oculist, neurologist, etc., one or other of whom must be summoned from time to time. The head of the family must reckon on being surrounded by six or seven specialists, instead of relying on the "family doctor," as in the good old times. The specialist may be called but once; he may operate; or the case may pass into his hands entirely. But in few instances can his grasp of family conditions be comprehensive; rarely can his interest be deep; very seldom can he stand in the valuable relation of the former "family doctor."

Many of our specialists are of the utmost value. Their keen insight and diagnostic skill cause the initiation of measures that save life. But many of them lack the human touch and the human sympathy and, after all, very naturally their connection with the case is often merely technical and ephemeral. A few have secured most of their medical knowledge at the autopsy table. After these have cleverly solved the diagnostic problem and have formed such a clear conception of conditions as to be able to draw the lesion on the blackboard with colored chalks, their interest ceases.

Talented physicians with such an attitude toward sick people will not alone make a satisfactory and comforting impress. Certain semi-invalids or invalids who seek help, as well as those who apply for preventive care, will not be satisfied with an impersonal examination and disposition of their cases, as if of so much material. If dissatisfied and not at ease, they will

not progress very rapidly toward good health. They need the relations of the old-style physician who never loses sight of the person in his attention to the case.

The family physician must be more than a mere technician, an expert mechanic. He must be a doctor with great patience and devotion, broad tolerance, kindly sympathy, and a warm human feeling; an optimist with an abiding zest in existence and himself, and with a constant desire to help, sustain and cheer. Will the pendulum swing back, and will he return?

A. W. F.

HUMAN LONGEVITY.

The refinements of medicine are excellent for the individual, but damaging for the race. Modern medical expedients save from death, and repair and keep together weaklings—children and youths—till they can grow up, marry and propagate their feeble and vulnerable progeny. Thus population becomes more numerous, but the average of sturdiness and efficiency is lowered. It were far better for the progress of our race in industry and in culture, in achievement and in happiness, if the puny were allowed to pass away at very early ages. Such a thought will be considered immoral by the sentimentalist, but will assuredly be hailed as practical by the economist and the statesman.

Accepting social conditions as they are (and we must admit that much energy is expended in arranging for the unfit and the simpleton), our aim as physicians must be to prolong youth and with it to secure longevity, in our endeavor to contribute to "the greatest good to the greatest number" in this world of suffering.

Age does not impair. Impairment and decay come only from misuse and disease. There is no real "age limit," but there is an efficiency limit, inevitably resulting from improper diet, lack of exercise, insufficient sleep, and the ravages of disease.

Judging from comparative biological studies, the span of human life should be from 100 to 125 years, with youth persisting till 90 years of age have been reached. This statement is often met with the shocked assertion that the Almighty has ordained that the proper age limit is "three score years and ten," or, at most, four score; for did not King David say so in Psalm XC.?

Whoever wrote that Psalm, also called "A Prayer of Moses," made the statement quoted in opposition, and it has as much value as if King David had said, "The infant mortality of Babylon is 500 per 1,000." Either utterance is merely a report on conditions or belief. Had David alluded to the Babylonish bambinos, would we have agreed that such a mortality was necessary, and ordained of God? Surely not. And, in like manner, should we feel that the human race is doomed to brief life by the Creator, because

Correspondence

David's observation, in his time, led him to regard 80 years as the decreed limit of existence? David was a plutocratic monarch, with all the vices of the oriental freebooter. He and his ilk probably lived "the short and the merry life," and died younger by twenty years than they should have done. They set no standard, but only a totem pole of warning.

It is said that all the members of a certain tribe in the Philippines die at or before 35 years of age. They laugh at a possible long life; and, with the usual assurance of ignorance, deny that there ever was an octogenarian. We are just as fatuous, for we hug our pet undermining indulgence and smiling scornfully say that everybody is old enough at 80, and that youth necessarily terminates at 35 or 40.

Many examples are chronicled every week of people somewhat under or somewhat over 100 years of age, who dance at weddings, or take out fishing licenses, or plough fields, or go daily to desks in banks. The instance of Stephen Smith, M.D., of New York City, temporarily sojourning at Montour Falls, N. Y., has received wide newspaper publicity during the past year. He will reach the century mark in February, 1923, by which time he will partially complete his autobiography, in which he narrates the events of his marvelously varied, protracted and useful public life. Former U. S. Senator Cole, of Los Angeles, Cal., recently went to his college commencement at Wesleyan University, Middletown, Conn., to receive his degree of LL.D., then revisited the houses of Congress in Washington, D. C., and then returned home to go into court and try a case for a law client. Senator Cole will be 100 years old in September, 1922. Both these grand old men have very clear intellects, with unclouded memories and persistently sound judgment, with a vast capacity for enjoyment of life.

Lewis B. Reed, active, vigorous, mentally unimpaired, gave up his active business life in Brooklyn, N. Y., about six years ago, to go to Los Angeles to live. He will be 100 years of age July 1, 1924. Undoubtedly authentic cases of much greater age are on record. But the newspaper reports of Uncle John Shell, of Kentucky, were inaccurate. He was shamelessly exhibited and exploited as 134 years old, by some showmen, while in his dotage and probably demented. Shell was born, as was decided by a careful and credible investigating physician, in May, 1822, and died in July, 1922. The census records since 1860 confirm this statement of his birth.

Great age, without persisting youth, is undesirable; but a continuance of memory, judgment, initiative, activity, and zest of existence are possible for a score of efficient and happy years longer than the allotment deemed proper in the wail of the Psalmist.

A. W. F.

The Council at a meeting held in Albany, April 20, 1922, moved, seconded and carried

That the Journal be not used in any way suppress any expression of opinion; and that its correspondence columns be open for all proper communications; and that "proper" communications will be deemed those which are not slanderous or libelous in their nature.

MOTHER REFUSES TO PROSECUTE CHIROPRACTOR.

July 21, 1922.

To the Editor of the

NEW YORK STATE JOURNAL OF MEDICINE:

A chiropractor in Oswego recently treated a case of diphtheria, and when brought before the board of health pleaded the baby act—that he was not practising medicine.

In a fatal case of diphtheria, which recently occurred in Syracuse, a chiropractor excused his criminal neglect by pleading ignorance. A child was taken with a sore throat. The mother called a chiropractor who examined the back and claimed to find a spinal misplacement as the cause, and proceeded to cure the sore throat by manipulating the neck. When, at the end of nearly a week's torture, the child was gasping for breath and evidently dying, the chiropractor advised the mother to call a physician. I cannot learn whether the chiropractor ever looked into the mouth, but the physician found the cankered, membranous throat of diphtheria. The child was taken to the City Hospital and given antitoxin, but died in a few hours.

The chiropractor, when called before the health commissioner, stated that he did not know it was a case of diphtheria, and that as soon as he realized that it might be such, he refused to treat it longer. The affair was taken to the district attorney, but the mother refused to appear against the chiropractor and the incident seems to be closed.

I do not doubt that the same lack of principle which led a chiropractor to treat this throat in confessed ignorance of the condition would lead him to brag of his many cures of diphtheria, when diphtheria was not present; and while he pleaded ignorance, to evade merited punishment and responsibility. I cannot doubt that if the child had recovered, in spite of his neglect, he would have procured a testimonial from the mother to prove his ability to cure diphtheria.

To neglect a case of diphtheria in the light of our present knowledge seems criminal, yet why is it any more illegal for a chiropractor to care for diphtheria than to treat acute appendicitis, pneumonia, Bright's disease, etc., etc.? And why is it more illegal for a chiropractor to treat diphtheria than for him to advertise and hold himself out as being able to treat diphtheria and actually offer to do so? In the numerous advertising circulars sent out by all chiropractors, diphtheria is included in the list of diseases which they claim to be able to cure and which they offer to treat. By this claim and offer they are as much practicing medicine as by actually treating diphtheria; and they are doing more harm by advertising their claims than by actually treating diphtheria. They are educating the public to disregard and defy the department of health's admonitions to report and care for infectious diseases. They are acknowledging utter ignorance of even the nature of the ailment of their patient and yet claiming to be able to cure; and then excusing their blunders by hiding behind their ignorance.

In Syracuse a claim of ignorance of even the existence of a disease which he had offered to treat and cure was a valid chiropractic excuse for a fatal error. In Oswego, the claim that he was not a legal practitioner of medicine was a valid excuse for illegally practicing medicine. Criminal ignorance and illegal practice are successfully offered as a legitimate defence against criminal and civil responsibility. Suppose a physician,

called to care for a broken hip, should advance the claim that since he treated it for rheumatism, he should be excused for not discovering the existence of a fracture? Or if he recognized the fracture and rubbed the back to cure it, would the claim that he was not a surgeon excuse him?

That illegal and ignorant pretenders can practice medicine, free from liability, can be accounted for by considering two facts:

(1) Chiropractors have carried on an extensive and unprincipled advertising campaign and spent money to hoodwink the public.

(2) Physicians have felt it beneath their dignity to pay any attention to such absurd claims, and this has been interpreted by the public as an inability to controvert them, and therefore an acknowledgment of their truth.

The result has been an astonishing growth of the chiropractic heresy in public influence until chiropractors now flaunt their growth as an evidence of the truth of their claims. As well might the existence of myriads of weeds be advanced in evidence of the fertility and value of a barren waste.

But the medical profession, if it has any regard for the truth and right, can maintain its lofty indifference no longer. It must proceed to teach the public:

(1) The falsity of the chiropractic claims and the dangers of trusting the health of the public in the hands of ignorant pretenders.

(2) The fundamental and marvelous truths of the medical science; for instance, that antitoxin is better in diphtheria than back manipulations, and that diphtheria is caused by germs and not by spinal displacements.

(3) That it is grossly unfair to demand an extensive, exacting and expensive preparation from medical men, and then give ignorant pretenders the same privileges, with none of the liabilities. This could be accomplished through a publicity committee working with or under the legislative committee of the Medical Society of the State of New York, and would result in the passage of the medical practice act, under which impostors could be prosecuted and scientific investigation encouraged.

W. L. WALLACE.

Syracuse, N. Y.

July 14, 1922.

To the Editor of the

NEW YORK STATE JOURNAL OF MEDICINE:

DEAR SIR: In reply to your editorial, "Less Than Five-eighths," in the current number of the STATE JOURNAL, I wish to offer the following suggestions:

Would it not be far better to have 15,000 physicians enrolled at a reduced yearly rate? I think the yearly dues are excessive for what we receive in return.

Personally I see no excuse for the STATE JOURNAL as at present made up, except as a sop to the up-state practitioner. To me the "Weekly" published by the County Society is more up to date and of far more interest.

I think the fault *does* lie with the State Society and the County might with profit ask for criticism from its members.

These suggestions are offered in the same friendly spirit in which your editorial is written, and I hope that you will receive many more letters of a more constructive nature than this one.

With kindest personal regards and wishing you all the success in the world in your thankless job, I am,

Very truly yours,

HARRY E. PLUMMER.

40 East 41st Street, New York.

STATE DEPARTMENT OF HEALTH NOTES.

PHYSICAL EXAMINATIONS OF DEPARTMENT PERSONNEL.

Since the Commissioner and the Department are convinced of the importance, in general, of periodic physical examinations it has been felt that the Department should itself set a good example in this respect. Accordingly arrangements were made a few months ago whereby the privilege of a thorough examination was offered to every employee of the Department, care being taken to have it understood that the result would in no way affect the employee's status in the service of the Department and of the State, but would be carried out solely for the benefit of the members of the staff, while any conditions requiring special advice and treatment would be, in accordance with the established policy of the Department, referred to the family physician. The examinations of the employees of the Department under this plan have now been completed, practically the entire personnel having availed themselves of the opportunity. A large number of conditions requiring attention were found. The examinations were made by physicians attached to the Department, supplemented by the services of consultants specially retained to go over the more serious conditions thus disclosed. This medical survey of each employee was accordingly much more satisfactory than the routine certification as to physical condition which is required upon entrance into the state service through civil service examination and it is hoped that other departments of the state administration may be persuaded to follow the lead of the State Department of Health in its endeavor to promote the physical welfare of their personnel.

OUTBREAKS OF DIARRHEA.

The Department is again communicating with all practicing physicians of the state and with all local health officers seeking their cooperation in the study of outbreaks of diarrhea from clinical, bacteriological and epidemiological standpoints. The reporting of individual cases of diarrhea is not required by law nor has the Department any desire to place such a heavy burden on physicians and health officers. Local health officers, however, are required to report outbreaks of this disease to the Department and physicians can assist them in this duty by calling their attention to any unusual prevalence of diarrheal disease observed in the course of practice. Several times in the past the Department has learned of such outbreaks only after the lapse of several weeks when it was too late to make any clinical or bacteriological examinations or to collect reliable and important data relative to the nature and spread of the disease.

The Department in requesting this information from physicians and health officers does not have in mind the sporadic cases of diarrhea due to obvious dietetic errors or cases which are symptomatic of some underlying organic disease. It desires, however, to be informed promptly through the local health officer of any definite outbreaks of diarrhea whether among children or adults. A typical outbreak of the kind which the Department is anxious to study is characterized by the sudden appearance of a considerable number of cases—a prevalence in excess of that noted elsewhere or greater than the usual seasonal increase which most localities experience during the summer months. The appearance of such outbreaks, explosive in character and limited as to area, may warrant the belief that some local condition common to the people of the community is at fault.

Aside from the scientific interest which the Department has in such outbreaks there is frequently involved the more practical interest of typhoid prevention. Many outbreaks of typhoid fever been preceded by epidemics of diarrhea, the typhoid infection being traceable to the same source. By the early correction of conditions causing diarrhea, such typhoid outbreaks may be cut short or prevented. It is also believed that attacks of diarrhea have much to do with "activating" chronic typhoid carriers thereby increasing their men-

ace to the public. It is probable that during such active periods not only are more typhoid bacilli thrown off, but they are apt to be more widely disseminated.

Physicians are reminded that while individual cases of diarrhea are not reportable each case of bacillary or amebic dysentery is reportable. In such cases stool specimens should be submitted in glyccrine containers used for fecal specimens. These containers may be obtained from the local laboratory supply stations of the Department.

DIVISION OF MATERNITY, INFANCY AND CHILD HYGIENE.

The current issue of the Department's monthly bulletin "Health News," combining the May and June numbers under one cover, has been delayed in publication in order to make possible the presentation therein of a comprehensive outline of the problems of maternal and infant mortality in the state, and of the program of the new Division of Maternity, Infancy and Child Hygiene created by the Davenport-Moore law enacted last winter. The number contains a general survey of the problem by the Director of the Division, Dr. Florence McKay, and a brief history of the development of the child hygiene work in New York State with reference to the recent debate over the adoption or rejection of the Federal Sheppard-Towner Bill. Under the direction of Dr. Otto R. Eichel the Division of Vital Statistics has completed certain preliminary studies of maternal and infant mortality in New York and a number of graphic charts included in this issue of "Health News" present the results in a striking manner. Readers of the STATE JOURNAL who do not ordinarily receive copies of "Health News" but who are particularly interested in the work of the new Division may obtain copies of this special number as long as the supply lasts by writing to the Department.

POLIOMYELITIS.

Four cases of poliomyelitis were reported for the State of New York outside of New York City during the week ending July 27th. This makes a total of ten cases for the month of July as against thirty cases for the corresponding month of 1921 and a total of thirty-seven cases for the first seven months of the year as compared with fifty cases for the corresponding period last year. Since the extensive epidemics of this disease in recent years have begun during the summer the reports for July and August are noted with unusual interest. It is apparent that so far this year the State has escaped any unusual prevalence of poliomyelitis.

AFTER-CARE OF POLIOMYELITIS CASES.

The after-care clinics which the Department has been carrying on since 1916 in cooperation with local physicians and agencies have been conducted this year in communities in all parts of the state where cases remain from last year or where new cases had arisen. During the first six months of the present year thirty-four clinics have been held with a total attendance of 622, and 200 pieces of apparatus have been sent to patients. The total number of poliomyelitis cases now under observation is 1474 of which 1034 are new and 440 old cases.

TUBERCULOSIS CLINICS.

The traveling clinics of the Division of Tuberculosis during the month of July reached several communities in the northern part of the State in St. Lawrence, Lewis and Warren counties. In August clinics will be held in Chenango, Tioga and Schoharie counties. The mobile unit which comprises two physicians and carries a portable X-ray outfit travels by automobile. It is the policy of the Department to hold these clinics in the rural districts where X-ray and other aids to diagnosis are not available. All cases are referred by physicians and the reports are in every instance sent back to the physician so that the patient is obliged to return to his own physician in order to find out the result of the examination. Last year over 1600 examinations were made in this way, the average daily attendance being 30 patients.

NEWS ITEMS.

Drs. Luzerne Coville, R. C. Wilson and Willets Wilson, Ithaca, have for several years been unable to resist the lure of the bass of Bedford Mills, Ontario, Canada, and this year is no exception.

Dr. and Mrs. Martin B. Tinker, Ithaca, are at their cottage at North Truro, Cape Cod.

Dr. and Mrs. Elmer E. Cary, Ithaca, are at their cottage at Blue Mountain Lake in the Adirondacks.

Dr. and Mrs. Eugene Baker, Ithaca, are at their farm, Cayuga Vista. Later they will tour the Adirondacks.

Dr. J. W. Judd and family, Ithaca, will spend the month of September in the Berkshires.

Dr. W. B. Holton and Dr. A. R. Hill, Interlaken, have returned from a successful two weeks' fishing trip.

Dr. I. M. Unger and family, Ithaca, are spending the summer at "The Lodge," their cottage in the woods ten miles from the city.

Dr. Edward L. Bull, Ithaca, is residing on his farm at Slaterville Springs for the summer where he is much interested in his herd of pure bred Jerseys.

Dr. Esther E. Parker and Miss M. E. Peabody are on an automobile tour of New England, after which they intend to enter Canada and visit old Quebec.

Dr. C. F. Denman and family are spending the summer at Brookton.

Dr. E. Singer, Liberty, has for an associate in his practice, Dr. Arthur Linden of New York City, who has recently returned from Berlin and Vienna where he has been doing Post-Graduate work.

Albany is one of the foremost of the second class cities for the choice by the Milbank Foundation as an ideal locality for the establishment of a Tuberculosis Demonstration. The Chamber of Commerce and many leading social and civic bodies have endorsed Albany's eligibility for such a demonstration.

Dr. J. Ivimey Dowling, Albany, is on an extensive tour in Iceland and nearby regions.

Dr. Victor Jacobson, Professor of Pathology at the Albany Medical College is in charge of the pathological department of the summer course at Harvard University.

Dr. E. M. Freund, Secretary of the Albany County Medical Society has moved to 391 Madison Avenue.

Dr. Henry Hun, Albany, has recently returned from a long trip to Europe.

Dr. Clarence E. Mullens, Albany, has left for a six weeks' European trip.

Dr. F. W. Lester, Seneca Falls, is entertaining his son, John Campbell Lester recently graduated from the U. S. Naval Academy at Annapolis.

Dr. G. M. Brandt, Seneca Falls, and family are enjoying an automobile trip through the Adirondacks.

Dr. A. Letellier, Seneca Falls, and a party of friends have been on an extended automobile trip in Canada.

Miss Laura Lester, Seneca Falls, daughter of Dr. F. W. Lester has accepted a professorship in the American College at Shanghai, China.

The Bassett Hospital, the pride of Otsego County, has just been opened in Cooperstown. It was built by Edward Clark and named in honor of Dr. Mary Imogene Bassett. It is a beautiful building entirely of stone. A nurses' home and contagious ward, also of stone, are built near the hospital.

Dr. A. W. Cutler, Oneonta, has started for Alaska on a vacation trip of about six weeks.

Dr. George L. Brodhead, New York City, has sailed for a six weeks' vacation in Europe.

Dr. C. Knight Deyo has resumed practice in Poughkeepsie after completion of Dr. Cabot's course in physical diagnosis at the Massachusetts General Hospital.

Dr. Aaron J. Rosanoff, for many years First Assistant Physician and Clinical Director of Kings Park State Hospital for the Insane, has resigned from the State service and removed to Los Angeles, where he has established himself in the practice of neuro-psychiatry.

Dr. Walter C. Everett, Nichols, has been elected supervisor of that town.

Dr. George M. Cady, Nichols, has been appointed a member of the Board of Managers of the Elmira Reformatory.

Dr. Thomas H. Halsted, Syracuse, ex-president of the State Medical Society, will have an article on "Group Medicine" in the forthcoming August and September numbers of *Woman's Home Companion*.

Dr. O. W. H. Mitchell, Syracuse, professor of bacteriology in the Medical Department of Syracuse University, who was appointed Commissioner of Health of the City of Syracuse by Mayor Walrath, has resigned because of ill health. Dr. Thomas P. Farmer has been appointed in his place.

Dr. John L. Heffron, Syracuse, has resigned as Dean of the Medical Department of Syracuse University after serving as a teacher for 40 years, and as Dean for 15 years. Dr. Herman G. Weiskotten has been appointed acting Dean.

Dr. G. W. Cottis and Mrs. Eliza Cottis of Jamestown are at present enjoying a vacation in California.

Dr. John A. Weidman of Dunkirk has been recently chosen Secretary of the Board of Managers of the Brooks Memorial Hospital.

Dr. Harry Wheelock formerly of Jamestown has located in Fredonia.

Dr. A. W. Dods, Fredonia, is spending the Summer in Algonquin Park, Canada.

PRUNES.

Contributions Invited

A doctor and a lawyer took a ride into the country and lost their way. They inquired of a farmer as to their whereabouts. In the conversation the farmer invited them to take a little bite to eat before starting home.

After a plain meal, they seated themselves on the porch and told stories. Every story by the doctor or the lawyer ended up in a jeer on farmers. "Now, then, Mr. Farmer," said the lawyer, "it seems you ought to tell a story."

"There was a certain prominent physician who had a serious operation to perform on one of his patients," said the farmer. "During the operation the physician became rather nervous and excited, and instead of removing the membrane he was after, accidentally took out the man's conscience."

Here the farmer stopped.

The lawyer inquired, "Well, what became of the patient? Did he get well?"

"Oh, yes," replied the farmer, "but having his conscience taken out he was not fit for anything else, so he studied law."—*Judge*.

We don't know whether to be more amazed at the prowess of the mute who began talking in an airplane or at the auditory nerves of the companion who says he heard him.

Co-operation in Kentucky.

Born to Mrs. Noah Watson and Mrs. Frank Todd a boy.—*Somerset, Ky., Journal*.

The archbishop had preached a fine sermon on the beauties of married life. Two old Irish women, coming out of church, were heard commenting upon his address. "'Tis a fine sermon His Reverence would be after givin' us," said Bridget. "It is indade," replied Maggie, "and I wish I knew as little about the matter as he does."—*Tid-Bits*.

"I'd do something for that cough if I were you, old man."

"That cough, my dear boy, is indispensable. Whenever a life insurance agent calls to see me I turn it on

and he never stays longer than three minutes."—*Boston Transcript*.

Why He Turned Out.

"Why do you turn out for every road hog who comes along?" she asked, rather crossly. "The right of way is ours, isn't it?"

"Oh, undoubtedly!" her husband replied, calmly. "As for turning out, the reason is plainly suggested in the epitaph which appeared in a newspaper recently:

*"Here lies the body of William Jay,
Who died maintaining his right of way;
He was right, dead right, as he sped along,
But he's just as dead as if he'd been wrong."*

No Expert.

Judge: "What had the defendant been drinking when you arrested him?"

Cop: "Whisky, I think, your Honor."

Judge: "You think? You think? Aren't you a judge?"

Cop: "No, your Honor, only a patrolman."

—*The American Legion Weekly*.

There was a man who loved the bees;

He always was their friend.

He used to sit upon the hives,

But they stung him in the end (finally).

—*Johns Hopkins Black and Blue Jay*.

Alibi Ike.

Babe Ruth blames the sun for his batting slump.—*The Sun*.

A. R. T. suggests that the Babe has overlooked the possibilities of his tonsils.

Or are they out?

Young Physician: "Is there any advice you can give me?"

Elder Medic: "Yes; before prescribing find out your patient's business. My first patient was the golf champion of the town and I advised him to take up the game for recreation."

Robert Underwood Johnson, director of the Hall of Fame, announces that there will be no sex discrimination there. Grand news, that, for Belle Guinness and Lydia Pinkham.

Nebuchadnezzar was the king

Who chewed up all the grass;

Made shredded wheat a thing to eat,

The simple, silly ass.

—*Pennsylvania Punch Bowl*.

"Any good fishing around here?" asked the visitor of the little village lad. "Yes, sir," answered the boy.

"You goes down that private road until you comes to a sign in a field wot says 'Trespassers will be prosecuted.' Well, you go across the middle of that field, and then you comes to a pond, with a noticeboard wot says, 'No Fishing Allowed.'" "Yes?" "Well—that's it."—*Farm and Home*.

A kind-hearted woman, visiting in an English military hospital, was going from ward to ward, asking each patient where he had been wounded, although the bandages plainly told.

Finally she reached a Canadian, who had heard all of the preceding queries. His neck was swathed in bandages and she asked, "And where were you wounded, my boy?"

"Well, you see, ma'am," he replied. "I was wounded in the foot, but the bandage slipped."—*Judge*.

County Societies

MEDICAL SOCIETY OF THE COUNTY OF ALBANY.

REGULAR MEETING, ALBANY, N. Y., JUNE 30, 1922.

The meeting was called to order by the President, Dr. Thomas W. Jenkins. Forty-nine members were present.

Motion made and seconded that all business be laid over except election of new members. Carried.

The following were presented for election: Drs. John S. McDowell, William M. Thomson, Anselme E. Houle, Thomas W. Phelan, and Lawrence Leonard. Moved and seconded that they be unanimously elected. Carried.

SCIENTIFIC PROGRAM.

Dr. Donald B. Armstrong, New York City, read a paper on "The Medical Aspect of the Framingham Tuberculosis Demonstration with Particular Reference to the Applicability of Such a Demonstration to a Second Class City."

Dr. William E. Lawson, of Albany, followed with "The Presentation of the Milbank Foundation Announcement."

Papers discussed by Drs. Corning, Howe, Wadsworth, Rooney, MacFarlane, Hawn and Armstrong.

It was unanimously resolved that the Society endorse a move with a view to the selection of Albany for a demonstration contemplated by the Trustees of the Milbank Fund.

ALLEGANY, CATTARAUGUS, CHAUTAUQUA AND WARREN COUNTY MEDICAL SOCIETIES.

JOINT MEETING, BEMUS POINT, JUNE 28, 1922.

The meeting, which was called to order at the Columbian Inn, on Chautauqua Lake, was very successful, both from a social and professional standpoint. About two hundred doctors were present; many brought their wives and families. Dinner was served at the Inn at 1 P. M.

Dr. Walter E. Dandy, of Johns Hopkins, presented a paper entitled "The Early Diagnosis and Treatment of Brain Tumors." To those present, who were not familiar with the pioneer work which is being done by Dr. Dandy, this paper was a revelation.

By means of an original method of distending the ventricles with air, Dr. Dandy is able to localize the majority of brain tumors and remove them at an early stage. Symptoms and signs which should make one suspicious of early lesions should be known by all practitioners and diagnosticians. In this way, tumor cases will come to the brain surgeon earlier, and results will be better.

A number of excellent lantern slides were shown. These were slides of illustrative cases, which had been localized by ventricular pneumography and proved by operation. In many instances, a photograph of the tumor, removed at the operation, was also shown.

The discussion which followed was opened by Dr. Edward Sharp, of Buffalo.

Dr. Arthur W. Booth, Elmira, President of the Medical Society of the State of New York, addressed the societies on "Some Salient Points in Medical Legislation." Dr. Booth discussed the apathy of the majority of physicians concerning legislation inimical to the interest of the profession. The so-called chiropractic bill was described and some of the reasons for failure of passage were related. Dr. Booth asked for an expression of opinion regarding the advisability of enlarging the scope of the STATE JOURNAL, making this periodical a weekly magazine instead of a monthly one. The consensus of opinion was enthusiastic for the

change and a motion was passed unanimously requesting the State Society to consider this possibility.

In view of the fact that this Joint Meeting was the first attempt along this line, Dr. Morris, of Olean, moved that these group meetings become a regular feature and that the Presidents and Secretaries of the four Counties be appointed a Committee to arrange for similar meetings every year. Seconded and carried.

DUTCHESS-PUTNAM MEDICAL SOCIETY.

REGULAR MEETING, MILLBROOK, JULY 12, 1922

The meeting and dinner was held at the Millbrook Inn. There were about thirty-five members present. A congenial afternoon and a fine dinner were enjoyed.

Scientific papers were presented by Dr. Harold Hays of New York City and Dr. Scott Lord Smith of Poughkeepsie.

MEDICAL SOCIETY OF THE COUNTY OF SULLIVAN

REGULAR MEETING MAY 24, 1922

The following officers were placed in nomination for election at the annual meeting in the fall:

President, John A. Miller, Roscoe; Vice-President, Victor G. Bourke, Livingston Manor; Secretary and Treasurer, Harriet M. Poindexter, Liberty; State Delegate, Luther C. Payne, Liberty. Censors: Emanuel Singer, Liberty; Charles Ravevsky, Liberty; J. C. Gain, Jeffersonville; James B. Amberson, Jr., Loomis; Harriet M. Poindexter, Liberty.

MEDICAL SOCIETY OF THE COUNTY OF MONTGOMERY.

SEMI-ANNUAL MEETING, FORT PLAIN, JUNE 21, 1922.

The meeting was called to order at the residence of Dr. C. E. Congdon.

The Scientific Program consisted of papers on "Infant Feeding," by T. Wood Clarke, M.D., of Utica, and "The Relation of the Physician to the Public Health," by Charles Stover, M.D., of Amsterdam.

It was decided that during the months of July and August, the physicians of the county would close their offices and do no business on Thursday afternoons, but they would provide for one or two men or more if needed in the cities, to answer calls and to look after patients who needed assistance.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

DISEASES OF THE STOMACH AND UPPER ALIMENTARY TRACT. By ANTHONY BASSLER, M.D., F.A.C.P., Prof. Gastro-enterology, New York Polyclinic Medical School and Hospital. Fifth Edition, revised and enlarged. Illustrated 151 half-tone and line text engravings, 93 full-page plates, 164 figures, plain and in colors, from original photographs and drawings. F. A. Davis Co., Phila., 1922. Price, \$8.00.

DISEASES OF INFANCY AND CHILDHOOD, THEIR DIETETIC, HYGIENIC AND MEDICAL TREATMENT. A Text-Book Designed for Practitioners and Students in Medicine. By LOUIS FISCHER, M.D., Attending Physician Willard Parker and Riverside Hospitals of New York City; Physician in Charge of the Infantorium; At-

tending Physician to the Babies' Ward, Sydenham Hospital. Ninth Revised Edition, Volume I, Infant Feeding and Organic Diseases, 146 text illustrations, several in colors, 37 full-page half-tone and color plates. Volume II, Infectious Diseases, Cerebral, Orthopedic, Eye, Ear, Skin, etc., 147 text illustrations, several in colors, and 43 full-page half-tone and color plates. F. A. Davis Co., Phila., 1922. Price, \$12.00.

CLINICAL DIAGNOSIS, CASE EXAMINATION AND THE ANALYSIS OF SYMPTOMS. By ALFRED MARTINET, M.D., Paris, France. With collaboration of Drs. DESFOSSÉS, G. LAURENS, LÉON MEUNIER, LUTIER, SAINT-CÈNE, and TERSON. Authorized English Translation from the third, revised and enlarged edition, by LOUIS T. DEM. SAJOUS, B.S., M.D., Philadelphia. 895 text engravings, several full-page color plates. Complete in two royal octavo volumes. Volume I, Physical and Laboratory Diagnosis. Volume II, Analysis of Symptoms. F. A. Davis Co., Phila., 1922. Price, \$14.00.

THE SURGICAL CLINICS OF NORTH AMERICA (Issued serially, one number every other month). Volume II, Number 3 (Chicago Number, June, 1922), 289 pages, with 89 illustrations. Per clinic year (February, 1922, to December, 1922). W. B. Saunders Co., Phila. and London. Paper, \$12.00 net; Cloth, \$16.00 net.

X-RAY DOSAGE IN TREATMENT AND RADIOGRAPHY. By WILLIAM DANIEL WITHERBEE, M.D., Radiotherapist Presbyterian Hospital, New York; formerly Roentgenologist Rockefeller Institute, and JOHN REMER, M.D., Radiotherapist New York Hospital; Consulting Radiotherapist United Hospital, Port Chester. The Macmillan Company, New York, 1922. Price, \$1.75.

FOOD, HEALTH AND GROWTH. A DISCUSSION OF THE NUTRITION OF CHILDREN. By L. EMMETT HOLT, M.D., LL.D., President Child Health Organization; formerly Professor of Diseases of Children in the College of Physicians and Surgeons, Columbia University, New York. The Macmillan Company, New York, 1922. Price, \$1.50.

DISEASES OF THE THYROID GLAND. By ARTHUR E. HERTZLER, M.D., F.A.C.S., Professor Surgery University Kansas, School of Medicine; Surgeon Halstead Hospital, Halstead; St. Luke's, St. Mary's and Provident Hospitals, Kansas City. With a Chapter on Hospital Management of Goiter Patients, by VICTOR E. CHESKY, A.B., M.D., Associate Surgeon Halstead Hospital. 106 original illustrations. C. V. Mosby Co., St. Louis, 1922. Price, \$5.00.

Book Reviews

COLLECTED PAPERS OF THE MAYO CLINIC. Rochester, Minn. Vol. XIII, 1921, Octavo of 1318 pages, 392 illustrations. Phila. and London: W. B. Saunders Co., 1922. Cloth, \$12.00 net.

The latest Mayo Clinic Volume comprises within its 1318 pages a wealth of material for study and reference, not only for those interested in surgery but for the internist and the laboratory and X-ray specialist. The various papers, written at the Mayo Clinic or at the Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota, are grouped under the headings, Alimentary Tract, Urogenital Organs, Ductless Glands, Blood, Skin and Syphilis, Head, Trunk and Extremities, Brain, Spinal Cord and Nerves, Technique, General. There is a complete Index of Contributors, Bibliographical Index and Index of Subjects.

The protean character of the contents of this volume may be judged from the fact that the 117 papers are contributed by no fewer than 76 authors. That the spirit of scientific inquiry is characteristic of the whole

group of workers and not of the heads of the Clinic alone is forcibly emphasized by the fact that the Mayos themselves have their names on but eight of the contributions—three from the pen of Charles H. Mayo, one of the three being an address on "The Trained Nurse"; and five by William J. Mayo, two of the five being of historical or sociological interest. There must be something in the literary atmosphere of the Mayo Clinic or in the skill of the editor, Mrs. M. H. Mellish, that makes most of the contributions to this volume not only interesting reading but easy reading.

Although more than 100 pages are included under the general group, "Ductless Glands," the seven papers under this heading are devoted to the diagnosis and treatment of diseases of the Thyroid Gland, and it is interesting to note that there is but one Index reference to "Endocrinology," and this one refers to a single paragraph in an article by Walter M. Boothby, on "The Basal Metabolic Rate in Hyperthyroidism," as follows:

"While we recognize that there is a biologic interdependence not only of every organ but of every cell in the body, nevertheless we are able to measure quantitatively only the calorigenic power of the active principle of the thyroid gland; consequently we deprecate the tendency so much in evidence in current literature to parcel out to each ductless gland a certain definite yet entirely hypothetical power and to build on such an unstable foundation the mammoth superstructure expressed in the term endocrinology."

In his address, "In the Time of Henry Jacob Bigelow," delivered before the Boston Surgical Society, June 6, 1921, at which meeting he was awarded a medal for his "Contributions to the Advancement of Surgery," William J. Mayo appears in the distinguished role of the student, the scholar and the medical philosopher.

J. R.

A FORM OF RECORD FOR HOSPITAL SOCIAL WORK, INCLUDING SUGGESTIONS ON ORGANIZATION. By GERTRUDE L. FARMER, Director, Department of Social Work of the Boston City Hospital, Boston, Mass. J. B. Lippincott Co., Phila., 1921. Price, \$1.50.

The social service department of the modern hospital has become of so much importance in following up patients after their discharge from the hospital, and is such an adjunct and aid in the proper working of the out-patient department that an authoritative work, such as the one presented by the author, is most welcome at this time. A carefully prepared, accurate, concise exposition of useful methods and records is presented in this book which should be read and carefully studied by those contemplating this line of work. Those already in the field of social service will derive benefit from the book as we find a practical working scheme which may be used as a foundation even where the hospital conditions may be different from those of the author.

H. M. M.

THE CLINICAL METHOD IN THE STUDY OF DISEASE. By R. M. WILSON, M.B., Ch.B. 12mo. of 57 pages. Illustrated. London, Henry Frowde and Hodder & Stoughton, 1921. Cloth, \$1.50.

This book is a memorial in recognition of the work of Dr. Horace Benge Dobell, the noted English physician (1828-1917). The advantages of personal observations upon patients are emphasized and illustrated in the life of this successful physician who practised before our knowledge of the bacterial cause of disease was discovered. Dobell's comments upon cardiac and pulmonary diseases are given with the usual clearness of the British clinicians. The work is interesting from a historical viewpoint, and is carefully presented.

HENRY M. MOSES.

Papers from the Mayo Foundation for Medical Education and Research and the Graduate School of Medicine, University of Minnesota, covering the period of 1915-1920. Octavo 695 pages, 203 illustrations. Phila. and London: W. B. Saunders Co., 1921. Cloth, \$10.00 net.

These papers, representing the theses, in abstract, of applicants for degrees conferred for advanced research in medicine, are full of interest and information. Though none is to be considered epoch-making, all are excellent and worthy of perusal. There are about a dozen essays on the Alimentary Tract: as many more upon the Urogenital Organs. Half a dozen upon the Ductless Glands; two articles upon The Circulation; Blood; Skin; eight on the Nervous System; a dozen upon the Head, Trunk and Extremities, *i. e.*, anatomical in character; three upon Metabolism, and eight on general subjects, *e. g.*, The Liberation of Antibodies on Injection of Foreign Proteins.

The book is well indexed as to authors and subjects.

W. S. H.

THE MEDICAL CLINICS OF NORTH AMERICA. Volume 5, Number 4, January, 1922. Published Bi-monthly by W. B. Saunders Co., Philadelphia and London.

The New York number of January, 1922, contains a number of timely contributions. Longcope reports two cases of jaundice occurring in one family at about the same time and discusses mild forms of epidemic jaundice occurring in the United States. Lamb's and Glahn's discussion of *Staphylococcus Aureus* Endocarditis must be read in the original to be appreciated. The Role of the Capillaries in Circulatory Disorders is splendidly presented by Boas. Epstein reviews the clinical course and treatment of chronic nephrosis, and lays great stress on the reduction of fats and the liberal administration of fat-free protein foods. Ratner's report of rabbit hair asthma in children is convincing and calls attention to a hitherto overlooked factor of possibly great importance. The treatment of high blood pressure is taken up by Mosenthal in a scholarly and scientific manner. If more articles like the latter were published, the lot of the reader in his search for facts would be an easy one.

MEYER A. RABINOWITZ.

CLINICAL DIAGNOSIS, A TEXT-BOOK OF CLINICAL MICROSCOPY AND CLINICAL CHEMISTRY FOR MEDICAL STUDENTS, LABORATORY WORKERS, AND PRACTITIONERS OF MEDICINE. By CHARLES PHILLIPS EMERSON, A.B., M.D. Associate in Medicine The Johns Hopkins University. 156 illustrations, Fifth Edition. Entirely Rewritten and Reset. J. B. Lippincott Company, Philadelphia and London, 1921.

After reviewing a seemingly endless procession of second-rate books on clinical pathology and laboratory diagnosis, it is both a relief and a pleasure to encounter a really authoritative work. It is our personal opinion that this field is overcrowded. There are perhaps half a dozen really valuable works on this subject. The rest might well be scrapped and sunk without a trace. However, we can conscientiously and enthusiastically recommend this edition of Emerson. The last edition having appeared ten years ago, the rapid progress of clinical pathology has made it necessary for Dr. Emerson to completely rewrite his work. He has scrapped all obsolete methods and replaced them with the newest and best in technic. He has wisely retained what, in our opinion, was the most valuable feature of the preceding editions, namely, the complete and able discussion of the interpretation of laboratory findings. We know of no other work which is superior in this respect. This edition is somewhat more compact than its predecessor and is issued in a most attractive volume.

E. B. SMITH.

THE EARLY DIAGNOSIS OF THE ACUTE ABDOMEN. By ZACHARY COPE, B.A., M.D., M.S., (Lond.); F.R.C.S. (Eng.). Surgeon Bolingbroke Hosp. Henry Frowde and Hodder & Stroughton, London, 1921.

This little book of some two hundred pages should be read by every general practitioner and if its principles are followed with care we can look for fewer errors in the diagnosis of acute abdominal lesions and expect an improved operative mortality and shortened post-operative morbidity. The last desideratum deserves the greatest consideration from the economic standpoint. These lesions must be first separated according to whether they are medical or surgical conditions. When we have determined that surgery is definitely indicated no time should be lost in opening the abdomen even in the absence of a refined anatomic diagnosis. There are certain obscure pictures embodying features of this or that organ, perhaps complicated lesions involving the appendix, stomach or duodenum, pancreas or gall bladder in which there may be no time to resort to time consuming methods of diagnosis. A more refined diagnosis in certain cases in an emergency than the presence of an acute surgical abdominal lesion or of such a symptom-complex as intestinal obstruction may not be possible.

The history and careful physical examination may often be relied upon to give information upon which the differential diagnosis may be made. So astute are some analysis of the patient's history that the diagnosis of certain lesions may be made over the telephone, but to carry in the mind preconceived ideas of a disease and to retain only fixed conceptions is oftentimes to court failure. Under these conditions questioning of the patient is often superficial and only directed toward the lesion in the mind of the interrogator. Examination is apt to be careless under such conditions. In a few instances cases have come to light in which no examination at all has been made, but these must be exceptional.

As another cause of error we would indict failure to interpret symptoms in their proper light. This comes from imperfect knowledge. It should be borne in mind that the manifestations of abdominal disease from the surgical standpoint are very protean and that the most important symptom is pain. It is possible for the physician to become so misguided through attendance upon impressionable high-strung women of his clientele who are constant complainers and in whom pseudo pain may be a constant companion that he becomes blunted to tales of woe and may come to deny the true significance of pain in certain individuals. The reviewer has recently removed an acute suppurating appendix from a lady whose physician had disregarded her pain. Pain is the first danger signal of acute abdominal lesions, never exists innocently and should never be lightly considered. Muscle spasm is relative and inconstant. Never disregard the significance of pain even in the absence of muscle spasm.

The author properly lays emphasis on the value of a carefully elicited history and painstaking thorough methodical examination to include digital examination of the rectum—a procedure often neglected in the past by the rank and file. He takes up in detail appendicitis, gastric and duodenal ulcer, pancreatitis, cholecystitis, the various lesions of the large and small bowel resulting in intestinal obstruction and the acute emergencies occurring in the course of pregnancy and puerperium. Separate chapters also deal with the colics, acute abdomen of the tropics, early diagnosis of abdominal injuries, acute abdominal disease with genito-urinary symptoms, spreading and general peritonitis, and diseases which simulate the acute abdomen.

Cope stresses throughout his book the importance of early diagnosis. The responsibility lies mainly with the family medical advisor. If he is keen, alert, open-minded and does not procrastinate his patient will benefit.

ROYALE H. FOWLER.

THE SURGICAL CLINICS OF NORTH AMERICA. Volume 2, Number 1 (Philadelphia Number). Published Bi-Monthly by the W. B. Saunders Company, Phila. and London. Paper, price per year, \$12.00 (six numbers).

Some of the best surgeons of Philadelphia present their work in this number of the Clinics. Dr. Deaver discusses duodenal ulcer in his usual happy manner, going deeply into the symptomatology, diagnosis, and the surgical treatment. Interest is added to this particular topic by an analysis of the various phases of this disease by Dr. Reimann, from the pathologist's point of view.

Dr. Ashhurst presents an unusually large number of cases of malignancy of the large bowel, with special reference to those of the rectal and rectal-sigmoid regions. The excellent illustrations which accompany the text help in making the various operative procedures quite interesting and instructive.

Dr. Frazier's discussion of brain tumors in relation to cerebrospinal fluid and ventricles, will be found of great value to those interested in this line of work.

Dr. Anspach discusses a number of gynecologic problems and indicates the proper methods for their relief by a very fine set of illustrations.

The problem of treatment of harelip and cleft palate is very ably presented by Dr. Warren B. Davis. These are rather difficult conditions to deal with, but, after reading Dr. Davis's article, one gets a pretty clear idea as to the proper method of treatment, for the correction of these defects.

The other contributions, though no less important and interesting, cannot be gone into minutely, because of limited space. Mention need be made only of Dr. Da Costa's case of pituitary tumor with brain abscess; Dr. Muller's discussion of hemolytic jaundice; also reports of interesting cases by Dr. Spence, Dr. Keene, Dr. Dorrance, Dr. Bransfield, Dr. Jones, Dr. Piper and Dr. Rodman.

HERMAN SHANN.

A TREATISE ON GLAUCOMA. By ROBERT HENRY ELLIOT. Octavo of 656 pages, with 213 illustrations. London, Henry Frowde and Hodder & Stoughton, 1922. Cloth, \$8.00.

The title of the second edition of Elliot's textbook on Glaucoma has been changed to Treatise on Glaucoma. This modification was justified by the fact that parts of the book were rewritten and also that about 120 pages of entirely new matter were added to the former edition. The distinguished author possesses the rare talent of knowing exactly what he wants to say and also the best way of saying it. The work can truly be considered a model of logical arrangement of the different subjects taken up for consideration. The author says, regarding the importance of the physician being on the alert to detect a case of glaucoma, "It is not that he does not know of it, or that he has forgotten its symptoms, but the bare possibility of its existence is relegated to the background of his mind, owing to the infrequency of its occurrence in his practice." Mention is made of a well-known London physician who kept pasted above his shaving-glass a short list of the signs and symptoms of glaucoma, in order that he might not fail to diagnose such a case, if he met with it in his practice. "His example might be widely followed with profit." A careful perusal of this treatise shows that the author was inspired by a sincere desire to get at the essential facts pertaining to the underlying causes, diagnosis and the different methods of treatment of the various forms of glaucoma. Inasmuch as glaucoma is one of the most serious of eye diseases which the oculist is called upon to treat, it is incumbent upon him to read this great masterpiece by Col. Elliot. The typography and binding are up to the high standard of excellence which always characterizes the Oxford Medical Press.

J. W. INGALLS.

CATARACT AND ITS TREATMENT. By HENRY KIRKPATRICK, M.B. Octavo of 201 pages, illustrated. London, Henry Frowde and Hodder & Stoughton, 1921. Cloth, \$3.20.

In the preface the author expresses the opinion that, in the course of time, the treatment of cataract "will cease to be purely surgical, for when we have learned the causes of each type of cataract, we shall be in a better position to prevent the formation of opacities in the lens, and to render them stationary once they have developed."

To this statement surely we all feel like exclaiming with Hamlet, "'tis a consummation devoutly to be wish'd."

The first five chapters include the consideration of the Development, Anatomy and Nutrition of the Lens; Changes in the Cataractous Lens; Etiology and Symptoms of Cataract. Under the caption of Non-Operative Treatment of Cataract, it is urged that in the incipient stages all sources of auto-intoxication be eliminated and also that errors of refraction be carefully corrected.

The remaining 130 pages consider the Operative Treatment of Senile Cataract. With a judicial fairness and conservatism the author weighs the advantages and disadvantages of the various methods of extraction, namely, the intracapsular or "Indian operation," the preliminary iridectomy, the simple extraction, the combined extraction and Barraquer's phacokerisis. This work is characterized by thoroughness of preparation and attention even to minute details regarding the treatment of cataract. About 180 illustrations add value and interest to this very admirable book. J. W. INGALLS.

CLINICAL TUBERCULOSIS. By FRANCIS MARION POTTENGER, A.M., M.D., LL.D., Medical Director, Pottenger Sanatorium Diseases Lungs and Throat, Monrovia, Cal. With a Chapter on Laboratory Methods by JOSEPH ELBERT POTTENGER, A.B., M.D., Assistant Medical Director and Director of Laboratory, Pottenger Sanatorium for Diseases of the Lungs and Throat. Volume I: Pathological Anatomy, Pathological Physiology, Diagnosis and Prognosis. Second Edition. 105 text illustrations and charts, six plates in colors. Volume II: Complications and Treatment. Second Edition. 65 text illustrations and charts, four plates in colors. C. V. Mosby Company, 1922. St. Louis.

Dr. Pottenger's masterpiece is so well and favorably known to all students of pulmonary tuberculosis that the coming of a new edition is naturally viewed with considerable interest. In this the second edition the author has made very few or extensive changes from the first. In the chapters on Diagnosis he has incorporated a number of observations he has contributed to current literature during the past several years on pulmonary reflexes and the path through which pulmonary tuberculosis expresses itself in disturbed function in the production of subjective and objective symptoms. He lays the utmost stress on the value of inspection and especially of palpation as diagnostic aids in the presence of early pulmonary involvement. In the chapters on the Nervous System he sets forth theories that account plausibly enough for the manner in which the patient reacts toward tuberculosis in the production of symptoms.

In a new chapter, entitled Influenza and Tuberculosis, the author discusses the effect of the recent epidemic upon active pulmonary disease, upon quiescent tuberculosis and the differential diagnosis between post-influenzal pulmonary lesions and those caused by the acid-fast organism; a very valuable chapter and quite in agreement with the observations of most men of broad experience in this work.

This second edition is a monumental piece of work and we predict that it will be even more generously received than its predecessor. FOSTER MURRAY.

HAYFEVER AND ASTHMA; CARE, PREVENTION AND TREATMENT. By WILLIAM SCHEPPEGRELL, A.M., M.D. 12mo of 274 pages, illustrated with 107 engravings and 1 colored plate. Philadelphia and New York, Lea & Febiger, 1922. Cloth, \$2.75.

The book "Hay Fever and Asthma," published by Wm. Schepperegg, M.D., is probably the most valuable addition to Hay Fever and Asthma literature published recently. Its description of the plants and pollens of the United States is surprisingly extensive. The very condensed and yet full description of each pollen makes it a most valuable book of reference. It is practically an indispensable working manual to every man interested in the diagnosis and treatment of Hay Fever, as well as in the preparation of the pollen extracts used in the diagnosis and treatment.

While we do not agree entirely with the theory expressed by Dr. Schepperegg, in regard to the development of Hay Fever in the individual, yet, that is a matter of theory and does not diminish the practical value of the book to the Hay Fever worker.

The method of extraction of pollen protein is somewhat complicated compared with "Goodale's Normal Salt Solution and Sterilization of the filtered extract in 14 per cent alcohol."

The law of immunization against all plants that are closely related biologically, by the injection of one member of that family has not proven satisfactory in its practical application. The polyvalent treatment of Hay Fever has proven far more satisfactory. This fact is not sufficiently emphasized in the book under discussion.

Differing as we do in these few particulars with the author, the book is a most valuable asset to every worker in the field of allergy.

A. C. HOWE.

CLINICS OF GEORGE W. CRILE, M.D., AND ASSOCIATES AT THE CLEVELAND CLINIC, OHIO. THE THYROID GLAND. Octavo of 228 pages, with 106 illustrations. Philadelphia and London: W. B. Saunders Company, 1922. Cloth, \$5.00 net.

Two hundred and eighty-two pages of text constitute this work on the thyroid from Crile and his associates. The matter is admirably handled in short chapters. Only two chapters reach the total of thirty or more pages—John Phillips' discussion of differential diagnosis and Crile's presentation of the technic of operations on the gland. Kimball's article on the prevention of simple goiter in man is just within this compass.

The shorter chapters deal with thyroid function, partial hyperthyroidism, laryngeal function, the adenaline test, the serum test, the value of basal metabolic studies, X-ray treatment, preoperative treatment, the administration of nitrous oxid-oxygen, and postoperative complications. One hundred and six illustrations supply interesting data of value in diagnosis and treatment.

The scope of the work is adequate. There is an art in accomplishing condensation of material without loss of smoothness of style or continuity of thought. In this book the authors have gratified their readers by achieving this aim.

They present arguments to establish the views of their Clinic that endemic goiter is a geologic deficiency disease, preventable by proper iodine administration before the 25th year of age: that quiescent goiter may be converted into either exophthalmic goiter or hyperthyroidism: that hyperthyroidism presents no uniform pathology: that the adenaline test has been of distinct value in the study of borderline cases, as has the estimation of the basal metabolic rate, which however is not a guide to operability or prognosis: that heart and blood-vessels may be disturbed without concomitant nervous system disturbances. They now believe that hyperthyroidism is an intracellular acidosis, and treatable by subcutaneous infusion, digitalis, blood transfusion and

rest. Surgical treatment is advised for all cases without regard to the degree of hyperthyroidism: in 40 per cent of the cases preliminary ligations are made. Hot-water injections, quinin and urea injections, X-ray and radium are no longer used. Every case has a planned regimen of rest and diet added to its surgical treatment.

The value of this book to the surgeon and the internist is immediately evident on inspection, and perusal justifies the opinion.

FRANK BETHEL CROSS.

RADIUM THERAPY, by FRANK EDWARD SIMPSON, A.B., M.D., Professor of Dermatology, Chicago Polyclinic; Adjunct Clinical Professor of Dermatology, Northwestern University Medical School. 166 original engravings. C. V. Mosby Co., St. Louis. 1922. \$7.00.

Dr. Simpson is peculiarly well fitted to present a volume on Radium Therapy owing to his wide experience in Dermatology and to his close relationship with the Frank Edward Simpson Radium Institute.

The Author has covered the subject in a manner which is most complete and the book is written in a clear, concise style which makes it easy and interesting reading.

Chapters I. to VII. contain a description of the Radio-active Substances, the Origin and Chemical Nature of Radium Salts, and Radium Emanation. The technique of the preparation of the latter, for therapeutic use, is thoroughly discussed together with the Decay Products and the Absorption and Filtration of the Rays.

The Physical, Chemical and Biological effects of Radium Rays on the tissues and organs of the body are set forth in a very clear and simple manner.

Three chapters are given over to a description of the various kinds of Therapeutic Apparatus, Dosage and Technique of Radiation. Then comes a thorough discussion of the uses of Radium in General Surgery, Gynecology, Dermatology, and mention is made of its uses in Ear, Eyes, Nose, Throat and Ductless Glands. The usefulness of Radium in Internal Medicine is given a chapter by itself and is discussed at length.

The author has included in his book a most complete Bibliography which covers fifty-eight pages. It is arranged alphabetically by authors and contains references to a great number of the best articles which have been written on Radium.

Dr. Simpson's book is very complete and up-to-date. It deserves a place in the libraries, not only of those who are interested in Radium, but of those who are interested in the Newer Therapeutic Agents.

WM. SIDNEY SMITH.

A TEXT-BOOK OF PRACTICAL THERAPEUTICS. With Especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By HOBART AMORY HARE, M.D., LL.D., B.Sc. Eighteenth Edition, enlarged. Octavo 1038 pages, 144 engravings, 6 plates. Phila. and New York, Lea & Febiger, 1922. Cloth, \$6.50.

This eighteenth edition of Dr. Hare's well known treatise has been entirely rewritten.

Long recognized as one of the best of the practical books on therapy, the present edition has taken on a scientific aspect to a degree that approximates that group frequently referred to as more scientific than practical. Thanks to pharmacologic research, it is now possible to explain many of the heretofore empiric actions of many drugs; and Dr. Hare has succeeded in doing this in a very interesting manner and has, in addition, presented the subject in a very entertaining form. This book is too well known to require extended comment; suffice it to say that the present edition possesses all of the good points characteristic of former editions with the added advantage of having been brought up to date in its scientific aspects.

The practitioner will find this a most useful addition to his collection of books on Therapy. M. F. DEL.

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THE ESTABLISHMENT OF A TEMPORARY OR PERMANENT PULMONARY LIP-FISTULA IN THE CONSERVATIVE* TREATMENT OF ADVANCED BRONCHIECTATIC LUNG ABSCESS*

By WILLY MEYER, M.D.,
NEW YORK CITY.

WHEN the late, much lamented Chairman of your Section, Dr. Henry L. Lynah, the consulting per-oral endoscopist of our hospital, the Lenox Hill, of New York City, invited me to take the surgical part in the Symposium on pulmonary abscess, which he had arranged for this meeting, I accepted without hesitation, as the subject is of particular interest to me.

After some deliberation as to what phase of the topic assigned to me I should bring out, I came to the conclusion to briefly discuss the Conservative Surgical Treatment of Bronchiectatic Lung Abscess.

Personally, I feel inclined, from a mere clinical point of view, and aside from exceptional cases as actinomycosis, suppurating hydatid, etc., to divide non-specific subacute or chronic lung suppuration into three classes:

1. The ordinary lung abscess, subsequent usually to pneumonia or influenza;

2. The typical bronchiectasis, *viz.*, multilocular lung suppuration, due mostly to the aspiration of a solid foreign body, or a benign intrabronchial tumor; not infrequently it is also of congenital origin;

3. The bronchiectatic lung abscess, consecutive to the aspiration of septic, semi-solid or liquid, material, or also due to embolism of small size and a low degree of infection, both producing local gangrene.

Each of these three classes requires different treatment.

Without going into the merits of the various more or less conservative procedures proposed for the treatment of lung suppuration, I would today present the result of personal endeavors made to relieve the condition by incising the principal cavity of the lung, a procedure which naturally includes the attempt to reach a larger

bronchus or its branches, for prolonged drainage, the latter to extend over many months or even years.

In some of these cases one larger, irregular cavity is present, or two (or more), sometimes smaller ones, communicating with each other and with that branch of the main bronchus, through which aspiration took place, and which is drained outwardly when the cavity is successfully reached and opened.

The endeavors just referred to resulted in the working-out of a method which, it seems, often cures the active lung disease in a very simple manner, *viz.*, by thorough, direct and prolonged drainage and increased ventilation, secured by means of establishment of a temporary or permanent lung-lip fistula.

Before describing the method, I should like to give here a brief history of the events that led up to its adoption.

In the years 1908 to 1912, while doing experimental work on the dog at the Rockefeller Institute, we found that healthy dogs stood the removal of one or more lobes of the lung very nicely, if operated upon under differential pressure and, of course, under strict aseptic precautions. They were almost well after forty-eight hours, jumping around and barking, as if nothing had happened. On testing the contents of the chest in the place of the removed lung lobe or lobes with an aspirator, we found air, never fluid, in contrast to the experience of Robinson and Sauerbruch, who always found fluid.¹ I believe, with a perfectly aseptic course of healing after lobectomy in the healthy dog, with separate ligation of the blood vessels that accompany the bronchus, and crushing combined with airtight inversion and suture of the bronchial stump, also complete closure of the chest, air will be found as a rule within the chest in place of the excised lung portion, and not serous fluid.²

Of 26 dogs, thus operated upon, 22 recovered = 84.6%.³

Subsequent observations of the effects of lobectomy in dogs showed that nature tries to eliminate the defect, created within the chest, by a gradual distention of the remaining lobe on the side operated upon (compensating emphysema), as well as of the entire lung of the other side, correspondingly changing the position of the mediastinum, diaphragm and chestwall itself.

* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 20, 1922.

Whenever the *entire* lung has been removed, the opposite side crowded over, but the tissues did not become adherent to the other costal pleura; they formed a kind of new pleural cavity.

Anatomical proof of this work of nature was made possible through the courtesy of Dr. Francis Carter Wood of New York City, who was good enough to give his valuable aid in these investigations. He bled to death the dogs treated with lobectomy, at various times after the operation under general anesthesia, through an incision in the femoral artery, then using this opening to inject a 5 per cent formalin solution into the vascular system. After thorough hardening and freezing of the entire animal, transverse section cuts were made through the chest at various levels. The specimens thus obtained were very instructive. Some of them were shown before the Am. Surgical Association at its Washington meeting, in 1910.⁴ They are still in my possession.

Enthused by this favorable experience in dogs, we approached our first lobectomy in the human being with great hopes, on May 12th, 1909. The case, a boy of six years, had shown the clinical signs of what seemed to be a bilateral bronchiectasis, concerning both lower lobes, of more than two years' duration. He had come under my care through the courtesy of the late Dr. Pisek of the Post-Graduate Hospital. With the patient's head and the anaesthetiser under positive pressure, within the cabinet—the only apparatus for differential pressure then available in science and at the Lenox Hill Hospital, outside of the negative chamber, which had not yet been installed—we loosened the adherent lobe and treated the pedicle, bronchus and blood vessels as we had learned to do it in our experimental work. To-day we know that such detailed treatment of the stump is not advisable in human beings. After the vessels were doubly ligated and divided we crushed the bronchus with a powerful clamp and, just as we were inverting it, after tying, the anaesthetiser informed us that the patient's pulse had suddenly become weak and respiration very superficial. Soon the heart stopped beating; persistent attempts at resuscitation failed. We all were utterly disappointed and unhappy, and tried to explain our experience in various ways: acute dilatation of the right heart on account of the continuous increased air-pressure, in the face of a heart muscle, weak and diseased from years of septic infection, vagus reflex, and so forth.

The experience just related occurred a few weeks before the arrival of Dr. P. Friedrich, then Professor of Surgery at the University of Marburg, Germany, who had come to America in the spring of 1909, at the invitation of the American Medical and the American Surgical Association, to attend their annual meeting. On

discussing the boy's death with him, he gave me the following advice: "Do not attempt to excise every chronically suppurating bronchiectatic lung lobe in the human. Lobectomy is still a very serious operation, and thoracic surgery is still a very young child. The many deaths that would most likely result, might give thoracic surgery a black eye in the estimation of our medical brethren. Rather go ahead slowly and cautiously and try conservative methods first."

I took his advice and, in the course of the subsequent years, conscientiously and faithfully tried every conservative procedure known in the surgical treatment of bronchiectasis: artificial pneumothorax, collapse of the chest wall by the so-called extra-pleural thoracoplasty (multiple rib resection), ligation of a branch of the pulmonary artery with and without subsequent thoracoplasty; incision of the lung with drainage, and, lastly, bronchoscopic treatment at the hands of experts.*

One of the results of my attempts to help some of these seriously afflicted patients in a more conservative way was, as mentioned above, the working-out of a method which promises satisfactory results in a more round-about fashion in patients suffering from the so-called bronchiectatic lung abscess, though it will naturally not cure the patient as completely as the excision of the diseased portion or portions of the lung. It consists, in brief, in the establishment of a pulmonary lip-fistula which, after the principal cavity is emptied of its contents: pus, old fibrinous coagulations, etc., ventilates the same directly, and this, interesting to observe and to state, does away quickly and definitely with that terrifically foul odor of the sputum. As I have frequently stated when presenting such patients before medical meetings, it is evident that the free access of a larger volume of oxygen to the partially anaerobic microbes which settle down in these cavities and are, I believe, responsible for the terrible odor, destroys them permanently. Repeatedly I have succeeded in hastening this happy change by making the patient close his mouth and compress the nose, thus forcing respiration through the artificial opening, often also having the nurse blow a stream of pure oxygen gas several times daily into the fistula with inspiration through the same on the part of the patient. It was observed that, incidentally, the sputum, too, ceases after a while. When the patients have recovered and been discharged from the hospital, they appear perfectly well.

In case of a severe cold, or of undue and, of course, forbidden, exercise (bicycle-riding,

* I did not try the sub-diaphragmatic transposition of the affected lower lung lobe, in combination with and rendered possible by artificial paralysis of the diaphragm on the same side, by means of phrenectomy, as proposed by Henschen, as not much is known about this procedure so far.

dancing, playing tennis, etc.) temporary exacerbation may set in later on with accompanying cough and re-appearance of sputum which is often streaked with blood, and mild fever. However, these phenomena are only temporary; the patients soon regain their former greatly improved state; they are able to work, their weight increases; bachelors even get married, and usually they are so well satisfied with the improvement attained that they refuse the second part of the work planned: the closure of the canal or opening. So far I have had no chance to attempt closure of the lung fistula, which I think, would best be done, by means of a circular excision of the skin lip-fistula, cauterization of the canal that leads into the lung and collapse of the chest-wall by means of extra-pleural thoracoplasty. In two of my patients this lip-fistula has closed spontaneously; both are completely cured.

Of course, it must not be forgotten that so long as the canal remains open these patients cannot be considered cured in the true sense of the word. They cannot take a bath, even in the tub, or go in swimming, nor must they ever fall into the water, for instance, while out fishing. Instantaneous death by flooding the lung would be the consequence.

It is true, it might be possible to close the opening with a cork and, in addition, construct a snugly fitting, safe suction rubber cap, with inflatable neck, as we see it attached to the masks for general anesthesia, to make the fistula airtight. Still, with their body immersed in water, their life would depend on the proper working of such a device. The slightest leak, and they would drown instantly.

There can be no question, that extirpation of the affected lobe or lobes is the best and the most radical surgical treatment. If the patient pulls through the operation, he is completely cured of his terrible affliction. In the pronounced type of congenital bronchiectasis, also in advanced acquired multilocular cavity formation of the lung, resection is the only operation that comes into consideration.

On the other hand, I am convinced that there are many weak and reduced patients with acquired and advanced chronic non-specific lung suppuration, particularly the bronchiectatic pulmonary abscess, in whom radical work is absolutely contra-indicated, who would succumb to the extirpation of the diseased portion of the lung. In other cases the radical operation is refused by the patient or his relatives.

In such instances it is of importance to know, that a less severe operation can bring some of these patients back to a very satisfactory state of health, even to complete cure and restore them to useful membership in the community.

(A number of lantern slides here illustrated

the history of five patients who had been successfully operated upon and treated with a pulmonary lip-fistula.)

In conclusion I would again emphasize that we are just entering upon this new and last chapter of operative surgery, *viz.*, thoracic surgery,—that we are still groping our way in trying to establish indications as to which one of the various useful operations should best be selected for the case in hand.

One word to our friends, the radiographists. It is true, they have already done a great deal in assisting the surgeon in locating the principal focus within the large thoracic cavity.

Once Dr. Wm. H. Stewart, the radiologist of our hospital, stated in his report: "Measure 8 ins. down from the spinous process of the seventh cervical vertebra and from there $2\frac{1}{2}$ ins. to the right. If you plunge in your aspirating needle at this place, you will find the abscess." I followed his instructions, and struck the pus.

But this remained an isolated, exceptionally fortunate occurrence.

The radiographists should develop their branch of our science still further. They ought to furnish the surgeon with still more explicit data, than their fascinating stereoscopes reveal. We need more detailed information, so essential for operations on conservative lines, regarding the actual distance of the principal focus from the front as well as the back and sides of the chest; we ought to be able to guide our aspirating needle by their advice, in which intercostal space we should enter, whether we should push the needle forward in a straight sagittal line or in an oblique direction, etc.

But our principal efforts should turn in the direction of *avoiding the development* of this dreadful disease—in the direction of "prophylaxis." We know that aspiration of foreign substances, solid, semi-solid and liquid, represents the most frequent cause for the development of this trouble. Let the *physician* remember, that the "sudden" onset of an "unusual" cough points to such aspiration, and demands the immediate calling in of a trained bronchoscopist for consultation, besides taking an X-ray picture of the chest; let the *specialist* arrange his tonsillectomies and adenoidectomies in such a manner that aspiration of blood, mucous and septic material *can not* and *will not* occur; and let the *surgeon* bear in mind, should he be called in to such a case early, a number of days after the operation, when the incessant cough with foul expectoration and high fever has just begun, I say, let the surgeon bear in mind that surgical interference, of any kind inclusive of the establishment of an artificial pneumothorax, is *not* indicated as the first step, but that a trained bronchoscopist is also *his* best friend.

In the spring of last year such a patient came

under my care. Fourteen days before, her tonsils had been removed under general anesthesia, at another hospital, up to which time she had been perfectly well. She now suffered from a most distressing cough, day and night, neither medicine nor therapeutic procedure of any type bringing the slightest relief, with a terribly foul and massive sputum and fever up to 104°, the typical picture of a so-called aspiration pneumonia with incipient lung suppuration. Having previously often discussed this very picture in its first development with our departed friend, Dr. Lynah, holding that *this* would be *the* time for bronchoscopy and thorough aspiration, irrespective of fever and the patient's general condition, I called him in consultation. He promptly did his wonderfully dextrous endoscopic work, and after a few days cough and sputum had ceased as by magic and the fever had dropped. The patient was the happiest woman in the world, and we all were equally delighted. I begged her to stay in the Private Hospital at least one week longer, for observation, and, if necessary, have Dr. Lynah repeat bronchoscopy with aspiration. But she left, considering herself perfectly well. I then lost sight of the patient and was unable to locate her, in spite of careful search, until, a few days ago, through our faithful social service nurse, the patient was found. She was entirely well, had no cough, no sputum, and expressed her gratitude for the splendid treatment she had received at the hands of Dr. Lynah.

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TONSILLECTOMY.*

By MARVIN F. JONES, M.D.,
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IN treating the subject Local vs. General Tonsillectomy as a cause of lung abscess it is necessary to consider the comparative rarity of this condition, the pre-operative examination, operative technique, post operative treatment, and method of anaesthetization.

The occurrence of lung abscess following tonsillectomy either local or general is rather rare considering the number of tonsils removed and the conditions under which the operations are performed. Time has not been sufficient to present here any considerable statistical report, but a slight reference to significant data is attempted.

The Post-Graduate Hospital has on record one case of lung abscess following tonsillectomy since 1914. This case had the tonsils removed under

gas-ether and teeth extracted at the same time. The Mayo Clinic report of 1916 shows the causes of lung abscesses to be teeth extraction 3, and tonsillectomy under general anaesthesia 2. This is taken from a series of 16 pulmonary abscess cases. From this report it is hard to arrive at the conclusion as to whether the abscess was a result of the tonsillectomy, the teeth extraction or a combination of both. The Post-Graduate statistics are taken from a service where the special hospital is a part of the general hospital and if complications arose from the operation the probability is the patient would return to the same hospital for treatment.

The Tonsil Hospital of New York has had a series of 1,100 cases on the ward and 900 private cases without any history of post operative lung abscess. These operations have been performed under both local and general anaesthesia.

The Mount Sinai Hospital reports six cases of pulmonary abscess following tonsillectomy in a period of six months. In the same paper were reported three other cases covering a longer period and one seen during the last year. These cases were received, at least in part, from other hospitals.

Personal reports seem to bear the same relation. Dr. McPherson has had no cases of secondary pulmonary abscesses. Dr. Fowler reports one case, not fatal, Dr. C. W. Richards who was probably the first to draw attention to these cases reported three. In my own practice I have had one. This case was a nurse, who was operated under general anaesthesia and who had had pneumonia. The patient eventually recovered and is doing her regular work today. Had time permitted I should have liked the reports of individuals, because so many cases go unreported, that it is hard to obtain a reliable standard of percentage.

Reported cases of lung abscess following local tonsillectomy have been few in number. Doctors Fisher and Cohen of Philadelphia in their report state that they have had no lung abscesses following local anaesthesia. Dr. W. B. Porter in the same paper reports two. There are two factors to consider. The greater percentage of tonsils are done under general anaesthesia and these are usually operated in hospitals, the records being open for inspection. The local cases are done in the office by numerous operators and while they may go to a general hospital, they may also be treated in private hospitals or homes. The fact still remains, however, that by far the larger percentage of these cases are reported following general anaesthesia and these cases occur with sufficient frequency to warrant considerable discussion to find a means of avoiding this complication.

The pre-operative examination should be complete in both local and general work. Lung con-

* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 20, 1922.

ditions which have existed previous to operation have to be taken into consideration. A latent focus of infection in the lung of tuberculosis pneumonia or other types is apt to have an acute exacerbation no matter what anaesthesia is used. Possibly a general anaesthesia would be more apt to cause a "lighting-up" of an old process, but it is easily conceivable that the lowered resistance immediately following a local tonsillectomy would also be an important contributory cause. It has been my experience that tubercular cases do very well under ether anaesthesia and this also applies to cardiacs.

The operative technique has probably as much to do with lung complications as any other one factor. We must note, in addition, anaesthesia pneumonias, metastatic processes through the lymphatics and blood vessels, asperation of blood and infected material from the tonsil, spreading of infection by gravity through muscle sheaths from lacerated fossa, infection introduced into the structures of the fossa by needles and promiscuous grasping of the deeper structures with haemostats. Regarding the anaesthetic, the operations being the same, there is less bleeding and hence less aspiration with chloroform than ether. The throat is also freer of mucus. The ether is, on the other hand, much less dangerous as an anaesthetic. Ether given with a gas induction is therefore possibly preferable in the hands of the usual anaesthetist. We should choose the anaesthesia which will give the patient the least anaesthesia danger although the chances of a lung abscess have theoretically been increased thereby.

Regarding metastatic processes it would seem reasonable to suppose that it is nearly as easy for infection to travel through the lymphatic and blood currents under local as under general anaesthesia.

The argument has been advanced that there is vaso-constriction caused by the injection of novocaine and adrenalin. This does not permit infected material and embolæ to pass into the circulation. The argument does not take into consideration the fact that there is a vaso dilatation following the vaso-constriction action caused by these drugs. Therefore using the same basis of argument there would be an increased liability to infection a short time after operation although the possibility of transmission at the time of operation would be reduced.

The bleeding in local anaesthesia is of course considerably less than by any other method especially if adrenalin is used with novocaine. If any bleeding occurs it is not from the small capillaries but from a sizable vessel. This is easily seen and can be clamped and tied before proceeding with the operation. Dr. Fisher of Cleveland has a neat haemostatic procedure in his local work. When the superior pole is freed

he places a pledget of cotton in the fossa back of the freed portion of the tonsil. This is left in place and he proceeds with the dissection of the opposite tonsil. After the tonsil has been removed he grasps the blood vessel with a modified Alyce Clamp and passes a suture around it. A flat non-cutting needle is used and triple 000 cutgut. The needle, therefore, does not traumatize the faucial structures and the catgut being absorbed very rapidly does not act as a foreign body and irritant. These cases occasionally bleed three or four hours after operation but the percentage is greatly reduced.

The most of the bleeding from local tonsillectomy is caused by laceration of the areolar tissue around the tonsil and by cutting into the structure of the fossa. This can be avoided by keeping close to the capsule and pushing the blood vessels back with an elevator rather than by cutting. The discussion of adrenalin used in these solutions does not come within the scope of this paper only as it affects bleeding. There is no doubt that the bleeding is almost nil by its use and therefore as a preventative of lung abscess should be used. The percentage to be used depending upon the experience and practice of the individual operator.

Aspiration of detritus from the throat is unavoidable in some cases although the chances may be greatly reduced. The more nearly bloodless the operation is, the fewer the cases of aspiration. This fact is one that argues for the modern haemostatic tonsillectomes. If bleeding does occur (as it does in most cases) the suction pump may be used to great advantage. This is to be used in the center of the throat and well down towards the larynx. A cotton or gauze sponge placed in the fossa immediately after removal of the tonsil serves as a haemostatic, and nearly all of the bleeding may be stopped in this way. The tampon may be left in the first fossa while the second tonsil is being enucleated. It is the pleasure of some operators to have the patient carried under a very light anaesthesia in order to avoid the elimination of the throat reflexes. When this is done the patient frequently coughs and seriously impairs the work of the operator. If the throat is kept dry it is almost as safe to have the patient in complete anaesthesia.

If the tonsil has been completely removed the hemorrhage that persists is usually from a blood vessel which may be grasped in a hemostat. This, if left in place a few minutes, will cause hemostasis. If this procedure is not successful it is a simple matter to ligate. The hemostat should not, however, be clamped on to the deep structures of the fossa. Ligation of deep sutures is sometimes necessary but should only be used in emergency. When the tonsils have been removed and the throat is perfectly dry the adenoids may be removed and the patient quickly turned

with the face down. Ice water to the face and neck tends to revive the patient, and also, I believe, acts as a hemostatic. The patient is placed in bed with his face down so that he does not aspirate blood which may be in the throat. Where these few small points can be observed the chances of lung abscess under general anaesthetic will be reduced to a minimum.

I cannot help but feel that most lung abscesses occur when these points are disregarded, either through negligence, or when pressed for time on account of the bulk of work, through necessity. It is very noticeable that cases done at the New York Post-Graduate Hospital are treated by the above method and a considerable percentage of these cases are done by matriculates under supervision of instructors, and yet only one case of lung abscess occurred and that was on a private case.

The post-operative treatment is also an important factor. When the patient is placed in bed the supervision of the recovery from anaesthesia should be continuous. The pneumonias contracted following operation owe not a small part of their occurrence to the patient being subjected to draughts, while the covers are thrown aside and he is wet with perspiration. Also while the throat reflexes may have returned it is not inconceivable that he aspirate material from the throat, especially if there is a small amount of oozing. An important factor in lung infection and one oftentimes incompletely considered is the aspiration of partially expelled vomitus. The patient in reacting from the anaesthetic vomits and an inexperienced attendant or nurse, or the entire absence of attendance, allows a portion of the vomitus to remain in the throat and the aspiration of the material takes place. The importance of the semi-prone position mentioned above is particularly important in obviating the danger.

In comparing the two methods of anaesthesia for tonsils we must consider the causes of lung abscesses and the number of these which can be traced to the door of each.

General Anaesthesia.—Throat reflexes abolished, therefore aspiration of material in the throat occurs continuously. This may possibly be overestimated when we consider that during normal breathing the mucous simply moves back and forth without being deeply inhaled into the lung. It is a spasm of coughing followed by a deep intake of breath which causes the infected material to be drawn into the lung.

Local Anaesthesia.—Throat reflexes in the ordinary tonsillectomy are not abolished, therefore, the patient quickly expels infected material and blood. It is, however, possible to aspirate this material although not as common an occurrence as under general anaesthesia.

Metastatic processes are equal for both. The only possible difference that occurs to me is the fact that the blood vessels are contracted by the local anaesthetic and therefore emboli or infected material would not be as readily admitted.

General Anaesthesia.—The patient, especially when in the Rose position, has gravity to prevent material from dropping into the larynx.

Local Anaesthesia.—Gravity carries any secretions into the larynx, and if the upper pharynx is cocainized this is not noticed by the patient until it strikes the larynx, when they are forced to cough.

The conclusion drawn, therefore, is as follows: The local anaesthesia is less liable to cause pulmonary abscess than general, although the contributing factors in general may be reduced to a minimum, by careful attention to all the details. Pulmonary abscesses are rather a rare occurrence in both, so local anaesthesia should not be advised on this point alone, but be placed on its merits after complications and fatalities are considered as a whole.

THE AVOIDANCE OF PULMONARY ABSCESS WITH GENERAL ANESTHESIA IN NOSE AND THROAT SURGERY.*

By JAMES T. GWATHMEY, M.D.,
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STRICT adherence to the title of this paper requires a search for the cause of the abscess, and this includes the consideration of all the factors involved—the surgeon, the operation, the anesthetist and the anesthetic agents, as well as the patient, his condition before, during and after the operation. While this paper refers constantly to tonsil operations, everything written is pertinent to any and all operations in the nose and throat.

The cause of pulmonary abscess is, according to one writer, "the introduction, either through the lymph or the vascular circulation, of infected emboli which find lodgment in the lung structure." Another writer states: "Conditions are particularly favorable for infective emboli being carried to the lung after tonsillectomies under general anesthesia, with a large infected area laid wide open by the surgeon and with the patient relaxed by the anesthetic." This theory seems to be disproved by the many operations for the removal of the tongue and adjacent glands, involving a much larger exposed area and with all conditions, such as relaxation and general anesthesia, being the same as in tonsillectomy; yet

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pulmonary abscess is not mentioned as a possible sequel in the literature.

In Powell and Hartley's "Diseases of the Lung," published in 1921 (a work of 800 pages), all kinds of abscesses from various causes are mentioned except those following tonsillectomies. In an American publication of 1915 by Lord, visiting physician to the Massachusetts General Hospital (a volume of over 600 pages), occurs the sentence: "It *may* follow tonsillectomy or adenoid operation," but the word tonsil is not even indexed in either of these works. Evidently the authors do not consider the tonsil as being closely related to the lung by blood and lymph vessels.

The late Henry L. Lynah stated that "if the abscess is embolic the symptoms are violent and the patient succumbs before treatment can accomplish anything." Brain abscess has also been known to follow tonsillectomy. Patients have probably been operated upon with an abscess of the lung already in course of development. Again quoting Lynah, in "patients suffering from an influenzal bronchiectasis and coughing up pus, sometimes before their tonsils are removed, is it fair to blame the operation if a lung abscess develops?"

While it is, of course, possible for a lung abscess to develop from an embolus following a tonsillectomy, the writer does not believe that emboli occur any more frequently after this operation than after any other surgical procedure, otherwise the operation itself would become prohibitive. Keen states that abscess formation is more frequent after gynecological than after general surgical operations, the estimate being 2 to 6 per cent after laparotomies, the order of their occurrence being as follows:

Pulmonary	.....	70 per cent
Renal	.....	12 per cent
Splenic	.....	8 per cent
Hepatic	.....	5 per cent
Cerebral	.....	4 per cent

Keen also states that chemical changes in the blood undoubtedly influence the occurrence of thrombosis in man.

From the above data and collected information, the deduction of the writer is that the proportion of pulmonary abscesses following tonsillectomy and caused by an embolus is probably less than 1 per cent. What then is the cause?

The first reported cases under general anesthesia occurred in 1910. A few scattered cases followed, and then in 1916 ten cases were reported. After this followed the report of Fisher and Cohen (*Journal A. M. A.*, Oct. 1921) of 76 cases, 74 of which were adults operated upon under general anesthesia with ether. The first report of cases following local anesthesia was

by Porter ten years later (in 1921) (*Va. Med. Monthly*, 47; 606, March, 1921); also two other cases under local anesthesia were reported in the discussion of this paper, making four cases occurring under local anesthesia. As tonsillectomy under local anesthesia is comparatively recent, the statistics are not comparable at this time.

Statistics on local anesthesia have just begun, and in the report of 47 deaths with this method, made by the Committee appointed by the Section on Laryngology, Otology and Rhinology of the American Medical Association in Boston, June 1921, probably over 90 per cent of them tonsil cases, it would seem that the tonsils have a closer connection with the brain through the nervous system than with the lungs by the blood and lymph vessels.

What then is the cause of pulmonary abscess in nose and throat surgery? Whether local or general anesthesia is employed, the cause is the same, namely aspiration of the blood infected by the cheesy or milky bacteria-laden secretions squeezed out of the tonsil at the operation. Tice states that "submersion may be followed by abscess or gangrene," the reference being to submersion under water. If, however, at any time under local or general anesthesia blood covers the epiglottis, if only for one respiration, that patient is as completely submerged as if he were under ten feet of water. The possibility of a lung abscess would depend upon the time the patient is submerged in his own blood and the amount of infected material in the blood. An abscess does not necessarily follow insufflated blood into the bronchial tubes, it may be coughed up again, or the patient's condition may be such that the blood would be taken care of in some way. On the other hand, a very small amount of septic material insufflated into the lungs in certain patients (weak, anaemic individuals, or persons with advanced tuberculosis, cardio-vascular changes, diabetes mellitus, syphilis, or any of the acute infectious diseases;) might easily cause suppuration and gangrene.

The condition of the patient under general anesthesia, before, during and after the operation, would have much to do with the possibility of material being insufflated into the lung. Given a high-strung, nervous individual with no preliminary medication, who has to be restrained during the second stage of the anesthetic, and is then given an uneven anesthesia, *i.e.*, is not completely anesthetized at times, such a patient would bleed more, there is more mucous secretion and the possibility of insufflated material is increased. Again, the patient who has preliminary medication, who is properly anesthetized during the operation with ether and chloroform, but who is returned to bed with all reflexes still abolished and possibly cyanosed, may pay the

penalty of bloody material seeping into the bronchi at this time.

It has been suggested that motor-driven apparatus may have something to do with insufflated material in the lungs. This would depend entirely upon how such apparatus was connected to the patient. If with a nasal inhaler or with nasal tubes, the pressure would be continued to the pharynx, but if a mouth tube were used, the anesthetic vapors would be inhaled under negative pressure. Consequently, the possibility of danger from this source can be ignored, when a mouth tube is used.

The greatest danger comes from the operator and the technique employed. The surgeon who has the patient placed deeply under the anesthetic and then attempts to Sluderize, or detach the tonsils with the finger, without a re-application of the anesthetic or the use of suction, the patient in the meantime being completely submerged in his own blood and making ineffectual efforts to breathe, and who depends upon rolling the patient to get rid of the blood is the greatest offender of all, and jeopardizes the life of every patient he operates upon. This is not intended as a criticism of these special methods, but as a statement of a condition favoring pulmonary abscess. If the surgeon, using local anesthesia, snared a tonsil and did not use suction at the critical moment, exactly the same condition would be created. This fact is mentioned in passing, merely to show the fallacy of assuming that the local anesthetist is immune from producing after effects such as pulmonary abscess. He is not.

Other facts to be considered are the agents employed. Both chloroform and cocaine produce chemical changes in the blood, and each has a direct effect upon the heart and should be excluded from our armamentarium. Cocaine and chloroform synergise with each other and the surgeon who uses them simultaneously is courting disaster.

Nitrous oxid and oxygen are the least noxious of all inhalation anesthetics, forming only a loose physical combination with the blood, so that while there is more oozing during the operation, as no chemical changes have occurred, the blood is in better condition to clot and to take care of any infection that may arise than it is following any other narcotic. When used alone, it is not satisfactory, but as described later, it is entirely so.

Since the conditions favoring pulmonary abscess are known, it is only necessary to state how they may be avoided:

1. If an adult, such preliminary medication should be given as will relieve his mind of all

worry and he should be *carried* to the operating room.

2. The anesthetic should be so administered that holding straps are unnecessary and the second, or excitement state, is eliminated, thus avoiding an increase of blood pressure, mucous, saliva, etc.

3. The anesthetic should be so administered that full relaxation obtains during the operation, but the patient should have full control of all reflexes when returned to bed.

4. The posture of the patient on the table should be such as to render the control of blood easy.

5. Free respiration at all times, which includes tongue retraction, rather than tongue depression.

6. A proper suction apparatus should be employed. The suction apparatus should be in the hands of the anesthetist or a nurse, as an assistant surgeon very naturally follows the details of the operation and is more or less indifferent to accumulating pools of blood.

7. Oil ether colonic anesthesia is absolutely safe and entirely satisfactory for all operations upon the upper air passages.

The preliminary medication is varied of course, according to the patient. Fifteen grains of chloretone were given by mouth one hour and a half before operation to a patient who had fainted when a hypodermic was administered upon a previous occasion, and was entirely satisfactory. A 15 to 20 grain chloretone suppository will often suffice. Usually $\frac{1}{4}$ to $\frac{3}{8}$ of a grain of morphine, given hypodermically in $\frac{1}{8}$ grain doses in 2 to 5 c. c. of a 25 per cent solution of magnesium sulphate (the first dose given one and a half hours before operation) gives good results.

The inhalation anesthesia should consist of nitrous oxid and oxygen with small amounts of anesthol to commence the anesthetic, and nitrous oxid, oxygen and ether or paraldehyde to continue it, and finally, with oxygen to return the patient to consciousness and an analgesic state.

A shaped block under the neck and shoulders renders easier the management of the blood in the throat than does a slight Trendelenberg position.

Regardless of the surgeon's ideas of a tonsillectomy, whether it should take two or three minutes or one hour, the throat should never be allowed to fill with blood, even for a few seconds. He should therefore give way for the suction apparatus at any time. In other words, team work, position of the patient and the proper anesthetic will render the possibility of lung abscess improbable.

THE PHYSICAL SIGNS IN PULMONARY ABSCESS.*

By OTTO M. SCHWERDTFEGER, M.D.,
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WHEN a patient expectorates foul smelling sputum which contains evidences of destruction of lung tissue, and when this sputum is evacuated periodically, and there is clubbing of the fingers, we can be reasonably certain that he has a lung abscess.

Having made the provisional diagnosis of lung abscess we are surprised on examining the chest to find physical signs entirely different from what we expected. We naturally believed that there would be no difficulty in demonstrating the classical signs of a cavity—such signs however are entirely absent in the great majority of cases.

This is not surprising when we stop to consider the many causes of lung abscesses and the different physical conditions which may be present in a lung containing such abscesses.

The causes may be *extra pulmonary* such as an empyema or a subphrenic abscess or *intra pulmonary* where some destructive process has broken down lung tissue and caused a cavity to form.

The following are some of the important mechanical conditions which affect the physical signs.

1. Location of the cavity. It may be superficial or deep and may be covered by normal, consolidated or infiltrated lung or by thickened pleura.

2. Variation in the amount of secretion present in the cavity.

3. Plugging or narrowing of a bronchus which leads into the cavity.

4. Air, or fluid, or both, in the pleural cavity.

5. Induration of lung structure.

For practical purposes the cases which I have seen can be grouped according to physical signs into one of the following five classes.

Class I.—Cases having no abnormal physical signs.

Class II.—Cases in which the signs of induration predominate.

Class III.—Cases presenting definite signs of cavity.

Class IV.—Cases with signs of pneumonia or lung infiltration.

Class V.—Cases of extra pulmonary origin.

Class I.—Cases having no abnormal physical signs.

These are usually cavities which have existed only a short time and are surrounded by relatively normal lung tissue.

The broncho pneumonia which has preceded the cavity has not been extensive and after it

has broken down, if drainage is good healing may take place spontaneously.

Class II.—Cases in which signs of induration predominate.

Induration of the lung occurs soon after the formation of an abscess cavity. It may extend only to the immediately surrounding tissue or it may extend throughout the entire lung and involve the pleura—I have seen a number of cases, some of them of several years duration, having a daily expectoration of from 100 to 500 c.c. of sputum, in which the induration was the only abnormal physical finding. They showed lessened respiratory excursion, dullness and diminution in the respiratory murmur of a part or the whole lung. In several instances these changes were so slight that they could barely be recognized.

Class III.—Cases presenting definite signs of cavity.

Here the cavities are more superficially located or conditions for the conduction of sound are more favorable than in Class I. The typical signs of a cavity are heard but they may be somewhat modified by signs originating in the surrounding inflamed or infiltrated tissue. The signs of cavity are not as a rule so well marked as those we find in tuberculous cavities of similar size. Later on signs of induration develop.

There may be a great difference in the physical signs if the examination is made when the cavity is full or when it is empty.

Class IV.—Cases with signs of pneumonia or lung infiltration.

These signs originate in the tissues surrounding the cavities and vary from a few small moist rales with normal breath sounds to showers of loud crackling rales and bronchial breathing. Here as in the other classes induration develops after the process has existed a number of weeks.

Class V.—Case of extra pulmonary origin.

The signs here are usually indefinite and may resemble those of the other classes. As a rule, however, the signs of the extra pulmonary cause obscure those of the lesion in the lung itself and do not strictly belong in this paper.

I would however just like to mention sacculated and interlobular empyemas because they occasionally are not recognized until they have ruptured into the lung. The signs if any are present at all, are localized dullness and diminution or absence of breath and voice sounds.

Exploratory puncture and X-rays are the diagnostic measures of greatest value.

Differential diagnosis must be made between the ordinary abscess cavity under discussion and cavities occurring in tuberculosis, syphilis and lung tumor.

Tuberculous cavities usually give well marked physical signs because they develop in a pre-existing tuberculous area. When a lung has

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reached the stage of cavity formation the other lung usually shows signs of tuberculosis. Laboratory examinations of the sputum frequently help us to arrive at a correct diagnosis but the failure to find tubercle bacilli, even in known cases of tuberculosis, shows the great need for improving our present methods of detecting this organism.

Breaking down lung tumors and gummata should not present any diagnostic difficulties if one bears in mind that these may be etiological possibilities.

The Wassermann reaction should be made as a routine examination in all cases of lung abscess.

The diagnosis of abscesses of the lung can usually be made by the internist but the determination of their exact location, size and number are made by cooperation with the skilled roentgenologist and the skilled bronchoscopist.

ROENTGENOLOGICAL INTERPRETATIONS IN PULMONARY ABSCESS.*

By WILLIAM H. STEWART, M.D.,
NEW YORK CITY.

CLOSE association with the late Dr. Henry L. Lynah makes me reluctant to speak further on a subject of which he was the pioneer, namely the roentgenographic localization of lung abscesses and bronchiectasis after the injection of bismuth subcarbonate suspended in sweet-oil, directly into the diseased area through the bronchoscope.

After an experience covering a number of years during which I demonstrated the apparent lack of danger in cases where bismuth had been observed accidentally entering the bronchi and their branches from the pleural cavity through a pulmonary fistula, as well as entering the main bronchi during roentgenographic examination of the oesophagus through a trachea-oesophageal fistula or directly into the trachea by an incomplete closure of the epiglottis due to malignancy, convinced me that bismuth suspensions could be injected through the bronchoscope directly into abscess cavities without danger to the patient. This contention was supported by Doctors Bullock and Gottlieb's work on live animals who frequently injected bismuth mixtures into the bronchi without fatal results.

It was Doctor Lynah who first ventured successfully into this field. He demonstrated that cavities were much more clearly localized when filled with opaque substances and examined with the roentgen ray than by any other method.

The procedure proved to be valuable not only diagnostically but therapeutically as well. Old chronic suppurating lung conditions were cured or markedly improved. This improvement was

due I believe first to the increased drainage provided and secondly to the direct action of the bismuth on the suppurating process. No doubt the secondary X-rays emanating from the bismuth during the exposure contributed to the good results.

Whether the cavities be injected with a substance opaque to the X-ray or not, aside from bronchoscopy, one has to admit that the roentgen examination, which includes fluoroscopic and stereoroentgenographic investigations, is the most valuable aid at our disposal in the study of pulmonary abscess.

While the clinical picture and physical examination are usually sufficient for a diagnosis, the X-ray is especially valuable in locating the lesion and giving accurate information as to the extent of the process and the presence or absence of associated pathological conditions. It has been clearly demonstrated that no case of lung abscess is completely cured or not endangered with a "flare up" unless every roentgenographic sign of the lesion has disappeared, even though the patient be symptom free.

The early process as seen with the X-ray consists of a localized pneumonitis of varying degree; the character of the shadow usually being oval or circular in shape; within the center of this shadow of infiltration soon appears a lighter area, indicating the formation of the abscess cavity. This cavity is usually circular in shape and its roentgenographic appearance depends upon the amount of secretion present; if the cavity be filled one cannot distinguish between the infiltration and the fluid. If only partially filled, a fluid level can be seen with a clear area above.

At times the patient is able to completely empty the cavity; in which instance, the roentgenographic investigations disclose only a clear cavity within the dense infiltrated area.

The infiltration varies greatly in character, usually the more acute the process the more dense the shadow; abscesses of old standing have well established pyogenic membranes and very little involvement of the lung surrounding the cavity.

Before the cavity formation takes place, it is impossible to determine whether one is dealing with one or more abscesses. If a single one is present it is called a lung abscess and if multiple abscesses are in evidence the case is diagnosed as bronchiectasis. Autopsies have shown that many cases exhibiting only one cavity roentgenographically actually have one main abscess surrounded by numerous smaller cavities.

In my experience abscess of the lung is most commonly seen after tonsillectomy, probably due to aspiration of an infected plug. A number of cases have been observed after other operative

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procedures some of which are clearly the result of a septic infarct.

Pneumonia, either lobar or lobular, is second among the most common causes of pulmonary suppurations. It shows itself early, as the result of rapid death of the structures, or late, as the resultant of a chronic pneumonia. The latter are most frequently seen complicating an influenza-pneumonia, in the latter cases multiple rather than single cavities are usually observed.

Lung abscesses may involve any portion of either lung. Following aspiration, they usually appear in the upper lobes, while following infarcts or pneumonia they more often appear in the lower lobes.

The most common lesion mistaken roentgenographically for acute lung abscess is a small sacculated empyema. To say whether the abscess is just beneath or just above the pleura is most difficult; the process may be not only pleural but pulmonary as well; in this instance the presence or absence of excessive foul smelling sputa determine whether or not the pulmonary structures are involved. A fistula between a sacculated empyema and a small branch bronchus accounts for the presence of the air-bubble above the fluid level. This opening between the lung and pleural cavity may be small or located so high that drainage through the lung will not occur, thus confusing the diagnosis. One must be sure that the case has not been needled, as a sacculated empyema, showing air in the upper portion of the cavity which has been introduced through the aspirating needle has more than once been mistaken for a lung abscess.

The frequent occurrence of hemorrhage in the chronic form of lung suppurations combined with cough and excessive sputa may lead to a diagnosis of pulmonary tuberculosis. Roentgenographically the differentiation is not difficult. Cavities in pulmonary tuberculosis show little if any surrounding infiltration and manifestations of the disease elsewhere in the lungs stamp it as being tubercular.

AN INTERPRETATION OF THE POSTURE OF PARKINSONIAN SYNDROMES IN TERMS OF THE NEUROMUSCULAR MECHANISM.*

By WALTER M. KRAUS, A.M., M.D.,
NEW YORK CITY.

I. THE POSTURE OF THE PARKINSONIAN SYNDROME

AT the present time the positions of the various parts of the body in the Parkinsonian syndrome, when described only in terms of muscle movements, that is, of flexion, extension, etc., give no notion of uniformity, no

notion of a homogeneous reaction due to disease of the nervous system. The position of the fingers illustrates this very clearly. They are usually flexed at the metacarpo-phalangeal joints and extended at the interphalangeal joints. Gowers has called this the interosseal position. As to the rest of the body, it may be said in general that the arms are held flexed and adducted, that in severe cases the neck and trunk are flexed, and that there is flexion at the hip and at the knees. In the rare instances where contracture affects the feet, extension occurs, producing a pes equinus or equino-varus. In the forms of the disease due to arteriosclerosis involvement of the feet is not common. However, in those forms due to epidemic encephalitis a pes equinus or pes equino-varus is often found.

Certainly it is difficult to interpret such a mixture of flexion, extension, etc., as indicative of a uniform reaction of the nervous system or of the muscular system due to disease. Nor do we find this so expressed in the present descriptions. However, if movement is described in terms of the neuromuscular instead of the muscular mechanism, that is, if we take into consideration peripheral motor neurones as innervators of muscles, the grouping of these neurones and their control by the spinal cord as well as the embryology and grouping of muscles, we find that the picture is greatly simplified.

Both the nerves and muscles of the trunk and extremities are divisible into a large dorsal and a large ventral group. (Tables 1, 2, 3, 4.) In the Parkinsonian syndrome it is very easy to show that the ventral group becomes more active than the dorsal group. An imbalance exists between these two large groups in spite of the fact that no paralysis of voluntary power is present. This imbalance is due to abnormal innervation of antagonistic groups of muscles.

The nervous system surely is so constructed that it may produce various muscular patterns. These patterns or positions are due to variations in the innervation of antagonistic groups of muscles. For example, in post-hemiplegic contracture of the arm, there is flexion at the elbow. The biceps is more powerfully innervated than the triceps. In decerebrate rigidity there is extension at the elbow. The opposite conditions obtain. The triceps is more powerfully innervated than the biceps. These patterns are constants.

The force which activates muscles in these patterns is tonus. For example, under certain experimental or clinical conditions, the muscles of the body assume a pattern which has been termed decerebrate rigidity by S. A. K. Wilson¹ and which was previously designated by Sherrington² as the antigravity position. So long as tonus exists this position exists. When tonus is eliminated the position disappears. In the

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Parkinsonian syndrome abnormalities of tone usually exist. There is never a complete *absence* of tone, flaccidity. Tone is sometimes normal, usually increased. There is a second factor. The pathological process has liberated parts of the nervous system capable of producing an abnormal posture or muscular pattern due to abnormality of innervation of antagonistic groups of muscles. Into this pattern tone flows. The activity of hyoscine in diminishing the severity of this abnormal posture or pattern by reducing tone forms a proof of the explanation given.

TABLE I.

DIVISION OF THE NERVES OF THE EXTREMITIES INTO VENTRAL AND DORSAL GROUPS

UPPER EXTREMITY		
ORIGIN		NERVES
BRACHIAL PLEXUS	Dorsal trunks (Posterior cord)	Dorsal scapular Long thoracic Suprascapular Subscapular (2) Thoraco-dorsal Axillary Radial
	Ventral trunks (Lateral and medial cords)	Nerve to subclavius Anterior thoracic (2) Musculo-cutaneous Median Ulnar
LOWER EXTREMITY		
LUMBO-SACRAL PLEXUS	Dorsal trunks	Superior gluteal Inferior gluteal Nerve to piriformis Femoral Peroneal
	Ventral trunks	Obturator Nerve to obturator internus and superior gemellus Nerve to quadratus femoris and inferior gemellus Tibial

TABLE II.

AXIAL MUSCLES

<i>Muscles of the Back</i>	<i>Ventral</i>	<i>Dorsal</i>
Serratus posterior superior.....		X
Serratus posterior inferior.....		X
Splenius		X
Sacrospinalis		X
Iliocostalis		X
Longissimus		X
Spinalis dorsi		X
Semispinalis		X
Multifidus		X
Obliquus capitis inferior		X
Obliquus capitis superior		X
Rectus capitis posterior major.....		X
Rectus capitis posterior minor.....		X
Rotatores		X
Interspinales		X
Intertransversarii	X	
Trapezius		X
<i>Muscles of the Neck</i>		
Scalenus anterior	X	
Scalenus medius	X	
Scalenus posterior	X	
Longus capitis	X	
Rectus capitis anterior	X	
Longus colli	X	
Rectus capitis lateralis	X	
Sterno-kleido-mastoid	X	

Muscles of the Thorax

Intercostales	X
Levatores costarum	X
Subcostales	X
Transversus thoracis	X

Muscles of the Abdominal Wall

Obliquus externus abdominis	X
Obliquus internus abdominis	X
Cremaster	X
Transversus abdominis	X
Pyramidalis abdominis	X
Rectus abdominis	X
Quadratus lumborum	X

Muscles of the Perineum

Sphincter ani externus	X
Corrugator cutis ani.....	X
Transversus perinei superficialis	X
Bulbocavernosus	X
Ischiocavernosus	X
Sphincter urethrae membranaceae	X
Transversus perinei profundus	X

Muscles of the Pelvis

Levator ani	X
Coccygeus	X

TABLE III.

MUSCLES OF THE UPPER EXTREMITY.

<i>Dorsal</i>	<i>Ventral</i>
1. Levator scapulae	
2. Serratus anterior	
3. Rhomboideus major	
4. Rhomboideus minor	
5. Supraspinatus	
6. Infraspinatus	
7. Teres minor	
8. Deltoid	
9. Subscapularis	
10. Teres major	
11. Latissimus dorsi	
	12. Subclavius
	13. Pectoralis major
	14. Pectoralis minor
	15. Biceps brachii
	16. Brachialis*
	17. Coracobrachialis
18. Brachio-radialis	
19. Extensor carpi radialis longus	
20. Extensor carpi radialis brevis	
21. Supinator	
22. Extensor pollicis longus	
23. Extensor indicis proprius	
24. Abductor pollicis longus	
25. Extensor pollicis brevis	
26. Extensor communis digitorum	
27. Extensor carpi ulnaris	
28. Extensor minimi digiti quinti	
29. Anconeus	
30. Triceps	
	31. Pronator teres
	32. Flexor carpi radialis
	33. Palmaris longus
	34. Flexor digitorum sublimis
	35. Flexor digitorum profundus
	36. Flexor pollicis longus
	37. Pronator quadratus
	38. Lumbrical 1
	39. Lumbrical 2
	40. Lumbrical 3
	41. Lumbrical 4
	42. Abductor pollicis brevis
	43. Opponens pollicis
	44. Flexor pollicis brevis. Lateral head
	45. Flexor pollicis brevis. Medial head
	46. Flexor carpi ulnaris
	47. Adductor pollicis obliquus

* Supplied by both ventral and dorsal nerves.

TABLE III—Continued

Dorsal	Ventral
	48. Adductor pollicis trans- versus.
	49. Interosseus volaris 1
	50. Interosseus volaris 2
	51. Interosseus volaris 3
	52. Interosseus dorsalis 1
	53. Interosseus dorsalis 2
	54. Interosseus dorsalis 3
	55. Interosseus dorsalis 4
	56. Opponens digiti quinti
	57. Flexor digiti quinti brevis
	58. Abductor digiti quinti

TABLE IV.
MUSCLES OF THE LOWER EXTREMITY.

Dorsal	Ventral
1. Iliacus	
2. Psoas major	
3. Psoas minor	
4. Pectineus*	
5. Sartorius	
6. Rectus femoris	
7. Vastus lateralis	
8. Vastus medialis	
9. Vastus intermedius	
10. Tensor fasciae latae	
11. Glutaeus minimus	
12. Glutaeus medius	
13. Piriformis	
14. Glutaeus maximus	
15. Biceps femoris (shorthead)	
	16. Biceps femoris (longhead)
	17. Semitendinosus
	18. Semimembranosus
	19. Adductor magnus
	20. Obturator externus
	21. Adductor longus
	22. Adductor brevis
	23. Gracilis
	24. Obturator internus
	25. Superior gemellus
	26. Inferior gemellus
	27. Quadratus femoris
28. Tibialis anterior	
29. Extensor hallucis longus	
30. Extensor digitorum longus	
31. Peroneus tertius	
32. Peroneus longus	
33. Peroneus brevis	
34. Extensor digitorum brevis	
	35. Gastrocnemius
	36. Soleus
	37. Plantaris
	38. Popliteus
	39. Tibialis posterior
	40. Flexor digitorum longus
	41. Flexor hallucis longus
	42. Quadratus plantae
	43. Abductor digiti quinti
	44. Flexor digiti quinti brevis
	45. Opponens digiti quinti
	46. Plantar interosseus 1
	47. Plantar interosseus 2
	48. Plantar interosseus 3
	49. Dorsal interosseus 1
	50. Dorsal interosseus 2
	51. Dorsal interosseus 3
	52. Dorsal interosseus 4
	53. Adductor hallucis
	54. Lumbrical 1
	55. Lumbrical 2
	56. Lumbrical 3
	57. Lumbrical 4
	58. Abductor hallucis
	59. Flexor digitorum brevis
	60. Flexor hallucis brevis

* Supplied by both ventral and dorsal nerves.

In order to establish the muscular pattern it is necessary to consider the position of the various parts of the body in both unilateral and bilateral Parkinsonian syndromes.

A. The Position of the Hand

In the Parkinsonian syndrome the fingers are usually extended at the phalangeal and flexed at the metacarpophalangeal joints. The thumb is slightly adducted, certainly not extended. This position is entirely dependent upon the activities

of the ventral intrinsic muscles of the hand. All of these muscles are innervated by the ventral median and ulnar nerves. (Table 3.) Were the dorsal muscles controlling the fingers at all hyperactive we should have a position approaching that of a clawhand which is indeed opposite to that which occurs in the Parkinsonian syndrome.

When the postural defect is more exaggerated, the long flexors of the thumb and fingers bring them into a position of flexion and the hand slowly assumes the classical position found in the hypertonic type of hemiplegia. The remainder of the arm is flexed at the wrist and elbow joints and adducted at the shoulder—all evidence of hyperactivity of ventrally innervated muscles which have developed on the ventral aspect of the limb.

The extension of the fingers at the interphalangeal joints by the interossei is of ventral origin and may be spoken of as ventral extension in order to make clear not only the functions of the muscles concerned ("extension") but also their innervation and their embryology ("ventral"). Thus it is seen that the entire reaction of the upper extremities is but a manifestation of an imbalance between the activation of ventral and dorsal muscles in which the ventral group dominates the picture.

B. The Head

When both arms are affected the head is flexed and a certain degree of flexion appears in the upper portions of the trunk, based upon a close

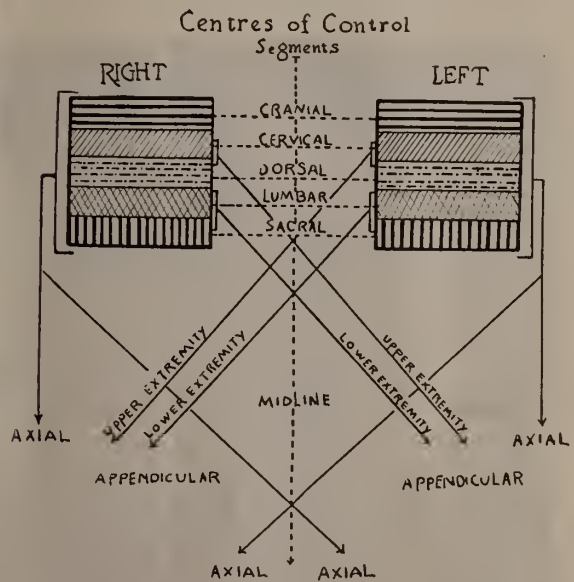


FIG. 1

anatomical relationship of the centres of control of the muscles of the upper trunk and arms. In the re-representation at higher levels of the seg-

mental relations in the spinal cord, the same topographical relations must obtain (Fig. 1). It is but natural therefore, that, when both arms become affected the upper portions of the trunk should also be involved.

The diagram (Fig. 1) illustrates a center controlling ventral and dorsal movements. This diagram represents the right extremity, for example, innervated by one side only of the nervous system, while the same side innervates both halves of the axial musculature. A lesion may affect the centers of one side without affecting the axial musculature, since this is also supplied by the other side. The moment, however, that the lesion becomes bilateral, both unilaterally innervated arms and the innervation of the axial muscles become affected, thus producing the bending or flexion of the head and trunk. This diagram illustrates not only how asymmetrical types occur but also the basis for the common cranio-cervico-brachial types involving the head, neck and arms and the relatively rare lumbosacral types involving the lower extremities.

C. The Trunk and Leg

In strictly unilateral Parkinsonian syndromes the patient maintains a normally erect position. Neither the hip nor the trunk are flexed. As soon as the disease becomes bilateral, flexion appears, first of the head. It may spread to the trunk and hips. Flexion of the head and of the main part of the trunk is obviously due to a relative over-activity of the ventral musculature as compared to that of the dorsal. It is more difficult to explain flexion at the hip. This move-

ment is carried out mainly by the dorsal ileopsoas, sartorius and tensor fasciae latae and may be called dorsad flexion. However, the condition in unilateral syndromes throws light upon this. In these cases there is no flexion at the hip. The dorsal flexor group is not active. If it were affected and were the cause of the flexion at the hip, it would be involved in the unilateral types, since its innervation is unilateral like that of the appendicular musculature of which it forms a part, and not bilateral as is that of the axial musculature. From this it may be seen that the movement of flexion at the hip has not been brought about by the dorsal ileopsoas, sartorius and tensor fasciae latae but is due to the activity of ventral trunk muscles.

The flexion at the knee is a compensatory response to the pushing forward of the center of gravity, brought about by the overactivity of the ventral trunk muscles.

When the Parkinsonian walks or runs he shows a more or less pronounced tendency to rise upon his toes, which is a manifestation of overactivity of the ventral muscles in the back of the calf.

D. Cases Showing Asymmetrical Involvement

In this group of cases in which the involvement is more extensive on one side of the brain than on the other, the notion that the postural defect of Parkinson's disease is due to an imbalance of ventral and dorsal muscles in which the ventral group dominates, is very clearly emphasized. Figures 2, 3 and 4 represent two different types of Parkinsonian syndrome. The first two are

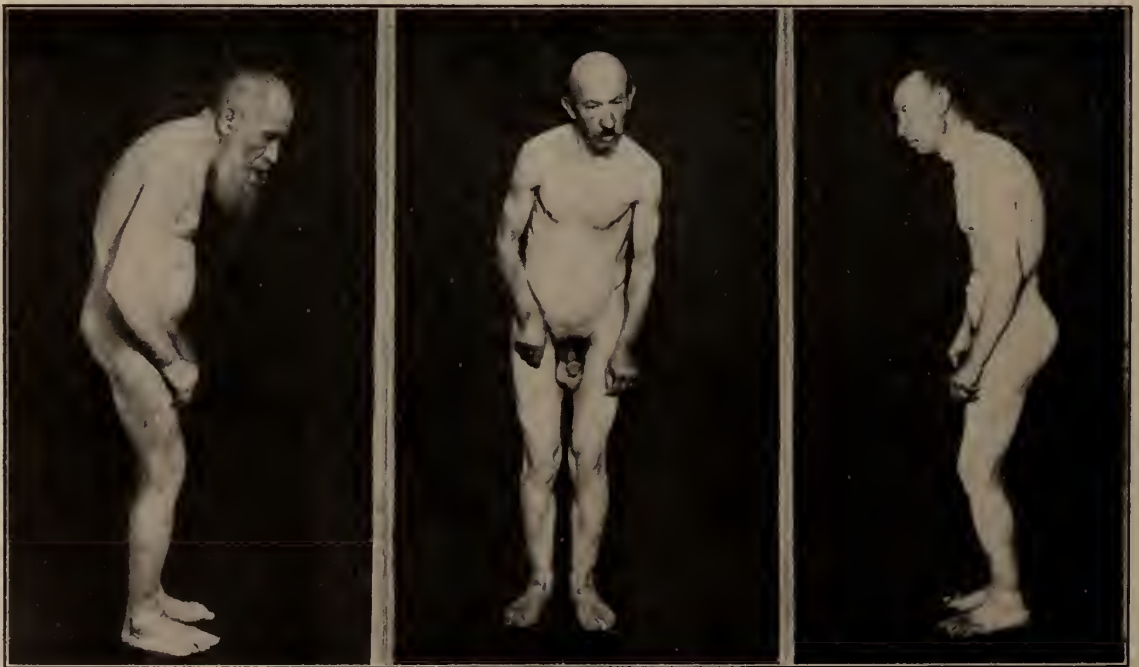


FIG. 2

FIG. 3—Note the greater involvement of the right sterno-kleido-mastoid and of the muscles of the right arm.



FIG. 4—Note the greater involvement of the right arm.

due to arteriosclerosis, the last due to epidemic encephalitis. In figure 3 a greater involvement on the right side is clearly seen in the arm, in which flexion at the elbow and fingers is more pronounced. The front view indicates also that the right sterno-kleido-mastoid is more active than the left, which brings the head around from the mid-position. The sterno-kleido-mastoid is a ventral muscle. In Figure 4 it will be seen from the front view that the right arm is more affected than the left. The comparison of the positions of the right and left hand in the lateral views emphasizes this difference. In asymmetric cases therefore, the side showing the greater involvement shows a greater activity of ventral muscles. A few words will suffice to indicate that the pes equinus and flexion of the toes, as well as the occasional varus, present like the other positions of the Parkinsonian syndrome, one due to over-

activity of ventral muscles. All of the intrinsic muscles of the foot are like those of the hand, ventral. The carrying down of the foot is due to the action of the ventral gastrocnemii and soleus.

It is therefore apparent that the posture of a Parkinsonian syndrome represents an imbalance in the innervation of some or all of the groups of muscles of the trunk and extremities, from which there results a pattern indicative of an overactivity of the ventral group.

The involvement is, of course, not always complete either on one side or symmetrical or complete on both sides, depending upon the extent of actual anatomical involvement. Since the re-representation at higher levels

must be similar to that of the segmental arrangements of the spinal cord, it is but natural that in the vast majority of cases, adjacent centers, such as the head and upper extremities, will be simultaneously involved.

II. CONTRACTURES IN THE PARKINSONIAN SYNDROME

The occurrence of contractures in the Parkinsonian syndrome is rare. They are more rare in the vascular type of the disease than in those following epidemic encephalitis. Dejerine states



FIG. 5



FIG. 5

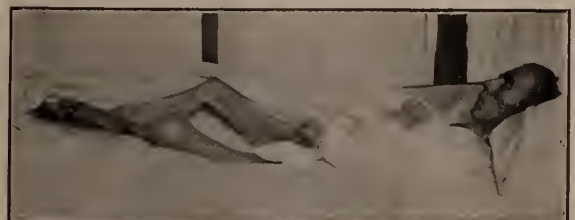


FIG. 5

"this abnormality of the foot in Parkinson's disease (which to my knowledge has not been reported) is very rare and I have up to now, observed only two cases."³ Though I have seen many cases of the Parkinsonian syndrome I recall seeing but three showing contracture of the feet, when the cause of the disease was other than epidemic encephalitis. Figure 5 shows a very severe contracture. These contractures are due to overactivity of ventral muscles and form additional evidence of the thesis put forward in this article. The rarity of contractures indicates that disease of some region other than that causing the usual picture of the Parkinsonian syndrome has appeared.

III. CONCLUSIONS

1. The defects in posture and the contractures of the Parkinsonian syndrome indicate an imbalance between the activities of certain ventral and dorsal muscles. As a result of this imbalance the activity of certain ventral muscles becomes greater than that of certain dorsal muscles.

2. Normal or, better, increased tone, is required to make this imbalance manifest.

3. The defects of posture and of tone are separate and distinct and are not due to disorder of a single physiological system.

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NOTE: I wish to express my thanks to Drs. S. P. Goodhart and Foster Kennedy for permission to use photographs of cases on their respective services.

A COMPENSATORY MECHANISM IN STATUS THYMICO-LYMPHATICUS.*

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PRELIMINARY to the presentation of this topic, it may be expedient to present some of my views regarding this constitutional state, so that our discussion may be around mutually understood terms. By a status thymico-lymphaticus, I understand a hypoplastic state—a condition in which important structures are smaller proportionately than the size of the individual calls for, with the sole exception of the lymphoid tissue of the body which is usually hypertrophic. The hypoplastic organs which are of importance are the heart, the blood vessel system and some of the glands of internal secretion, notably the adrenals, the pituitary, the geni-

tals, and frequently the thyroid. An enlarged thymus gland, which has been assumed to be the chief factor in this condition, is probably only one of the attendant or accessory ones and indeed, occasionally, though rarely, may not be demonstrable at all. Individuals, constitutionally hypoplastic, have precarious times during their life's course, not only on account of the blood vessels and cardiac conditions, but also by virtue of the small adrenals and underactive pituitary and thyroid glands, and by their altered and probably inadequate bio-chemical reactions. The extreme variety of symptoms produced by these basic disturbances will not have to be detailed by me for they are undoubtedly well known to such a group as this audience represents. The point of interest, however, to me is the question: while some of these patients die at critical times—such as when under stress or strain, under narcosis through fear and fright—yet why do the far greater number survive and gradually pass, presumably normal, from your observation? Indeed, many cases of status probably never see a physician for this trouble. In other words, there must exist an intrinsic mechanism in the individual which is automatically brought into action, which will counteract, overcome, and perhaps even cause to disappear, many of the inadequacies of his structure and his physiology. To get some light upon this mechanism, it is of course incumbent upon us to examine during their adolescent or even early adult years, cases that give the physical signs of an early status thymico-lymphaticus.

Such adult cases, when seen in large numbers, fall naturally into a few groups, but they all have some general characteristics. These are still the small blood vessels and heart, probably a thymic shadow, large upper central incisors and a maxillary torus, possibly hyperextension of the joints, notably of the phalanges and of the mandible, easily leading to subluxations. But when we look for evidences of a hypoplastic state in other directions, certain changes from the child's status are seen. In the first place, the blood chemistry has changed, the early relative lymphocytosis is not seen, the blood sugar is higher, the coagulation time is within normal limits. Evidences of better circulation are also noticed. The poor reaction to cold has been overcome, the skin does not get mottled on exposure, the hands and feet do not easily get blue and cold as before. The blood pressure is normal and the individual has become much more able to overcome his difficulties. Evidently his glandular mechanism also has taken part in the general improvement.

Now, between those cases that die an early death, and these that become later apparently normal there are the large number that only partially get out of this early difficulty, and as a result, we see them during this transition at some point at

* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 20, 1922.

which their forces are unable to cope with the obstacles barring their way, usually in the guise of fatigue and headache, or fear or apprehension, frequently because of structural disturbances such as obesity, or overgrowth; occasionally because of lack of genital maturity, very often because of psychoneuroses. Many of the cases, because they show a common symptomatology have been grouped by investigators as follows: *neuro-asthenia*, *migraine*, *Frölich's dystrophy*, *giantism*, *infantilism*, *neuro-circulatory asthenia*, and a host of others. It has always been on a basis of symptom groups and not of pathogenesis that these conditions have been named. Let it be admitted right here also that some of these symptom groups may conceivably arise from causes other than in the course of a compensatory transitional status progress. Nevertheless, all these so-called "entities" (which they are not), may come about in the course of the attempt of the individual to compensate for an original status *thymico-lymphaticus*.

What are the main handicapping features of a status *hypoplasticus* from which the individual must free himself? First, the large *thymus gland*, then the inadequate blood sugar content, the low blood and pulse pressures, the low body temperature, the long blood coagulation time, the low general metabolism and the low alkaline reserve. All of these attributes tend to make him of low resistance to fatigue, to infection, to shock; to produce in him inadequacies of personality and conduct with apprehensions and fears; a lack of initiative and tenacity and hence a dislike of obstacles with a resultant automatic treading of the path of least resistance—a weakling in person and behavior. However, practically all of these disabling qualities may be gradually overcome by an over-activity of certain glandular units. For instance, it has been shown that in lower forms of life the *thymus* may be made involute rapidly by feeding thyroid gland. The coagulation time of the blood is most certainly hastened by both thyroid and suprarenal medication; body temperature is increased by thyroid and pituitary and suprarenal effort; blood sugar content is increased by the same three organs; blood and pulse pressures are considerably modified by the action of the suprarenal and pituitary glands; the metabolic rate likewise is heightened by thyroid and suprarenal substance. In short, there is within us an adequate mechanism to overcome the supreme disabilities of a status *hypoplasticus*. It is when the mechanism, or one of its component parts remains inadequate, that we see the partial effect upon the individual. This is the reason that status cases have usually been divided—by such observers as Emerson and Symmers, into two groups—namely, the one type with well-rounded joints, fatty pads and a general smoothness of contour, and the other type with

slight and frail limbs, a sunken chest and prominent joints. In reality, these represent only the extremes of many types varying in all degrees. The former class is that in which the *pituitary* is probably inefficient in its compensation, and the latter, that in which through lack of thyroid activity the *thymus* still exerts some influence in retarding development. The former, in extreme cases, is really *Frölich's dystrophy*, most cases of which show a persistent *thymus* on X-ray examination. The latter is the type that gives us our effort syndrome cases—*neuro-circulatory asthenis*—with its low pressures, its disordered cardiac activities, its cold, blue and clammy extremities. So that from the perfectly compensated cases with no symptomatology and only the physical signs of an early status, down to the lowest or feeblest compensatory cases with all the symptoms and physical signs of a persistent state, we have all intermediate grades. Of interest is the individual in whom, secondly and probably compensatorily, the *thyroid* is overactive to such a degree in its effort that a true *hyperthyroidism* develops with *goitre* and at times *exophthalmos*. Indeed, Crile from his own experience, and citing others, states that 80% of the *goitre* cases show a persistent *thymus gland*; and Crotti and others as well find that unless the *thymus* is removed at operation, the *goitre* is apt to recur—which is my own experience also. These facts go far to support the theory that such *hyperthyroidism* is compensatory. Occasionally, it happens, as theoretically it should, that X-raying or removing the *thymus* alone produces a cessation of the *hyperthyroidism*.

Of interest is the series of changes that take place in the compensatory activity of the *pituitary*. As is usual in *thymic* states, the *pituitary* is small and *sella turcica* small and largely enclosed. In such circumstances, if there is to be any hyperactivity of the gland, certain results will follow. In the first place, there will be the effect of the pressure exerted upon the walls of the *sella turcica* due to the engorgement or enlargement of the *pituitary*. This will determine in all but the few cases in which this fossa is ample in size, headache of varying degrees of intensity, from a simple "fulness of the head" to excruciating, boring headaches, intermittent in situation. These headaches will come on at periodic intervals, and will be credited by the patient to any one of numerous causes—all of which may be effective in producing it in an individual of this type. Such causes are those largely that superinduce fatigue:—overwork, worry, going too long without food, menstrual periods and a host of others. After many years of such headaches, they usually spontaneously diminish or even cease. During the period of headaches, other signs in the individual become manifest. Thus, growth of the body in

height and breadth is marked, fatigue usually becomes gradually lessened, the blood picture changes, in that the carbon dioxide tension is increased and the blood sugar increases, while the blood and pulse pressure increase. In other words, accompanying the headache periods, a general improvement of the individual on the vegetative level becomes manifest. With this heightened level, the mental processes also seem to improve so that there is more initiative, more control over instinctive acts, less of flight in the presence of difficulties and obstacles, a greater power of attention, concentration and application. When we examine the sella turcica in such individuals after a few years of this compensatory process, we see that there is evidence of pressure in the walls of the cavity for there is decalcification in various parts, chiefly at the dorsum and posterior clinoids; erosion at other places, and occasionally even a direct break through the walls into the sphenoid sinus or middle fossa of the skull. An enlargement of the cavity is thus produced which may be fully adequate for all purposes, in which case the headaches cease and the individual improves. At times the pituitary mass encroaches laterally upon the cavernous sinus and then symptoms referable to pressure upon the sinus and its contents—the motor oculi nerves, the ophthalmic division of the fifth nerve and its lachrymal branch—are added to the headaches. Then we have oculomotor palsies, with strabismus, ptosis, lacrimation and attendant symptoms at the time of the headache. Pressure anteriorly will produce optic nerve disturbances with scotomata and other visual field contractions and disturbances. Pressure posteriorly may produce pyramidal tract symptoms. These symptoms, correctly interpreted, are now seen to be incidentals in the compensatory process as affecting the pituitary gland. Occasionally it becomes possible to examine the sellæ turcicæ in the same individual at yearly intervals during the process and the successive enlargements of the fossa are unmistakable. Also, occasionally, the first picture is taken after the sella has already become fairly normal in size, and then the radiographer will report a "normal sella." As a matter of fact, even though the size of the sella is normal, irregularity in contour with decalcified areas and facetting due to pressure serve to distinguish this type from a really normal sella. The type of individual that results from the compensatory process is one of large frame, generally six feet or taller, with a past history of fatigue, with headaches, with perhaps some stigmata of an early status still present—such as invert type of genitals, feminine pubic hair, late development of mustache and beard and the teeth of combined thymic and pituitary individuals—large central

incisors, broad and square teeth generally with some spacing, and hyperextensibility of many joints.

Of any attempts of the suprarenal glands to take part in the compensatory process we know little. Occasionally a case will go to autopsy, showing still inadequate suprarenal glands. Giant Turner, mentioned and photographed by Cushing, was an excellent example. At the autopsy, he still showed thymic remains, a very large eroded sella turcica, but small blood vessels and extremely small suprarenals. One case that came under my notice was that of a girl of twenty, who died a "thymic" death under chloroform narcosis and who showed an aorta as small as a little finger and extremely small adrenal glands. It is of course possible and perhaps probable that many cases that make good recoveries and that never see a physician, improve under the influence of hypertrophic suprarenal glands. Very often, according to Cannon, the adrenals become hypertrophic, due to overstimulation of the thyroid, and by thyroid compensation in the course of a status progress such an object may be attained.

It is obvious that many cases come to us in a partially compensated state, and if we can read their symptoms aright, it is possible that we may assist them in their compensatory attempts. The main points for us to recognize are those of inadequacies on the part of the thyroid and pituitary glands combined with signs of an early status thymico-lymphaticus, and as the number of these combinations may be almost infinite, depending on the grades of inadequacy of the compensatory mechanism, so do we have an equally large number of types of partially compensated cases,—varying between the two commonly described.

There is abundant evidence, therefore, that cases of status thymico-lymphaticus undergo a gradual change through one of several decades leading finally to a more or less adequate state which enables the individual to take his place as a competent unit among his fellows. The enabling mechanism is composed of several component glandular organs, chief among which are probably the thyroid and the pituitary glands. Anywhere in the course of the compensation, cessation of the process may take place, leaving the individual only partly efficient, giving signs and symptoms of the deficiency of the particular gland or glands involved. If this is properly recognized, a method of assisting the compensatory progress suggests itself. It is furthermore of the greatest importance to recognize the signs and symptoms of the overactivity of the connecting mechanism so that they be not treated as pertaining to a *disease process*, but to a defensive one.

SURGERY OF THE SPLEEN.*

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WITH but few exceptions less is known about the functions of the spleen than any other of the abdominal viscera. The organ excited the curiosity of the ancients, has caused much speculation as to its use and still continues to afford a fertile field for modern investigation. The late Sir William Osler acknowledged he had never been able to obtain a clear insight into the spleen. Our knowledge has been derived chiefly from studies following splenectomy, of the organ itself and of changes induced by the operation in both man and animals. The literature now pertaining to the spleen is enormous and in spite of research, animal experimentation and clinical studies many mysteries of the ages remain the mysteries of the day. The outstanding fact, whatever its elusive functions may be, is that these functions are apparently carried on in the absence of the spleen quite satisfactorily. The difficulty of detection lies in the fact that after splenectomy vicarious functions are assumed by other organs. The fact that other organs compensate for the loss of the spleen, however, does not necessarily indicate that these functions are of minor importance.

There are two main groups of affections in which surgery may be indicated. In the first group may be included injuries, abscess, cysts and new growths. The second is a large and important group which comprises affections involving the spleen and peculiar to it associated with varying pathologic conditions of the blood. Because of incomplete knowledge of these diseases splenectomy has been largely empirical. The results of splenectomy in this group, however, would seem to indicate that certain diseases are primary in the spleen and that in others the involvement of the spleen would appear to be but a link in the chain of a diseased blood-forming system. Within the group of clinically primary splenomegalia may be included splenic anemia, (Banti's disease), Gaucher's disease and hemolytic icterus. The status of splenectomy in certain other affections, such as pernicious anemia, leukemia and polycythemia vera, etc., in which the spleen is involved but in which the disease is obviously not limited to the spleen alone is now being determined. A general survey has been made of both groups.

GROUP I

Traumatic Rupture.—Forty-eight cases of traumatic rupture reported by Hutchinson, Troyman, Kothawala, Levin, Szenes, Waldenstein, Henchen, Levy, Cam, Jones, Hewitt, Barr, Stret-

ton, Lefevre, Guyot, Holzinger, Crookton, Ganguili, Jamison, Masci, Rocher, Gribbell, Brian, Peskind, Willis, Conners, Hauke, and Fowler have been analyzed from 1914 to 1921 by the writer. Analysis shows that thirty-two cases occurred in males and five in females, a proportion of more than six to one favoring the male. Pregnancy was not interrupted in one case.

The cause in all instances has been due to blunt force, either to a blow, kick, crush, run over accident or fall. It is not possible to state how far sudden muscular action has entered into the mechanism of the injury.

The elapsed interval between operation and the injury or onset of significant symptoms has an important bearing upon the mortality. In this series, in the cases in which this was noted, the average interval in fourteen cases was 29.8 hours.

The lesion has varied in the spleen from extensive complete transverse or longitudinal rupture, which may or may not extend into the vessels at the hilum to superficial rents in the capsule. The spleen has been almost completely severed from its attachments except for its blood supply. In some the capsule has been torn off. The lesion has involved the upper pole, the middle third and the lower pole, the visceral surface and the external surface. The series is hardly sufficiently large to warrant comparison and relationship of the type of injury to the surface involved. In the majority of cases the accident occurred in an otherwise normal spleen, at least in but six cases studied was mention made of a pre-existing hypertrophy considered malarial. There were fractured ribs in two cases; in another rupture of the left rectus muscle. Lesions in other regions were noted as follows: rupture left lobe of the liver in one case; fracture of the right fibula in none; of both forearms in one; concussion of the brain in one; rupture of the left kidney in two cases.

The treatment has varied depending upon the severity of the lesions. Operation has been performed in forty-five cases. Splenectomy has been performed in forty-one cases and results stated in forty. Of the latter thirty-four recovered. (Mortality fifteen per cent). Of the remaining four operations, suture was done twice with one death, which occurred on the tenth day with signs of peritonitis. Suture and tamponage were combined in one case which recovered and gauze tamponage was performed once with death resulting on the fifth day.

Spontaneous Rupture.—Spontaneous rupture of the normal spleen does not occur. If one analyzes critically forty-nine cases reported in the literature up to July 1921, it is found that in many spontaneity may be disputed. The cause is not intimately discussed. Many such cases are merely reported under title of spontaneous rupture. In five the cause is given as a trifling exertion,

* Read in abbreviated form at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 18, 1922.

such as arising from or turning in bed, or lifting. Leighton states specifically that there was no injury in his case. In Shorthorn's case of rupture, the spleen was said to be otherwise normal, the pre-existing state of the spleen in the cases of Cannady and Gibbons is not stated.

Gibbons' case is reported as "absolutely spontaneous." Conners considered the spleen in his case normal to appearance and touch. Miller states that in his case the spleen was friable but not enlarged.

The predisposing local lesion preexisting in the spleen was stated to be malarial hypertrophy in thirty-one cases. In many the pathologic findings are not detailed, but described merely as "diseased" or softened, of increased weight and size, the seat of acute septic splenitis, "bathed in pus" or "almost fluid." Rupture occurred once in the course of typhoid fever.

If the pre-existing lesion in the spleen has been recognized the diagnosis of spontaneous rupture of the spleen when attended with symptoms of collapse and internal hemorrhage should not be difficult. It is remarkable that in the series of ten cases of ruptured spleen reported from the Boston City Hospital by Henderson, in only one was the diagnosis made before operation and that was a spontaneous case occurring in typhoid fever.

In the series there are records of eleven operations. Splenectomy has been performed five times with five recoveries. Tamponade has been used in three instances with one death. In three cases it is not stated what operation was done.

War Wounds.—The writer has analyzed forty-two cases collected from various sources contracted during the World War. In twenty-six patients the wounds were due to shell fragments, (usually high explosive). In many instances there were multiple wounds of entrance. Of the remaining sixteen, four were bullet wounds and four were gunshot wounds in which the character of the missile was not stated. There were six bomb or torpedo wounds (hand or aeroplane). In one a "violent contusion" occurred and one was due to a knife stab.

The lesion in the spleen has varied and has frequently been associated with wounds elsewhere in the extremities and chest. Some spleens have been described as macerated, "laid open," others merely lacerated, or the seat of "eclatement" (bursting open). There are comparatively few in which the spleen was the only organ involved. In the majority of cases there were combined thoraco-abdominal wounds, due for the most part to shell fragments and in most of these, other abdominal structures than the spleen were injured. The wounds of entrance in this class have usually been extensive and located in the right lateral or posterior thoracic wall, the missile fracturing ribs and penetrating the pleura

and diaphragm, enroute to the abdomen. The missile has traveled from above downwards or has traversed the abdomino-thoracic region. The concomitant injuries within the thorax were commonly to the pleura (all), pericardium (1), and lung (2). Within the abdomen, in six cases there were additional wounds of the colon and in six wounds of the stomach. There were four wounds of the left kidney, four extensive injuries of blood vessels, two of the liver and one of the omentum.

The interval between injury and operation in the forty-two cases has been stated in twenty-eight instances. Operation was performed on an average of about eight hours after injury.

The complications are naturally of a serious nature. In the chest, pleural effusion, empyema, subdiaphragmatic abscess have occurred. In the abdomen acute dilatation of the stomach, pancreatitis (with lodgement of the missile in the gland and jaundice) and peritonitis are mentioned. Hemorrhage, exhaustion and shock have contributed greatly to the gravity of the condition.

The operative requirement has varied with the individual case. Treatment has involved in the severe abdomino-thoracic series, excision of ribs and suture of pleura and diaphragm, of injured hollow viscera, or tampon or removal of wounded solid viscera in addition to splenectomy. Splenectomy was performed in all but two cases, one case was treated by "extra peritonealization by peri-splenic hematoma" and in another case the splenic pedicle was ligated and the organ later "removed with pincers in pieces". The mortality for the entire series of forty-two cases is about fifty per cent.

Abscess.—The literature of abscess covered by Hagen, Dege, Küttner and Elting reveals a number of cases. Küttner collected 116 cases in 1907. Warren, Johnston, Balfour and others, in their writings on the spleen have also taken up this subject.

Opinions have differed with regard to the mode of origin of abscess of the spleen. Many writers have regarded the condition as of embolic or thrombotic origin, originating in infarcts. Others are inclined to the view that abscess of the spleen may result from the activity of micro-organisms deposited in the spleen without the formation of infarcts. It is believed that abscess of the spleen should be accepted as a local manifestation of bacteremia and that infarction should be differentiated.

Most of the cases have followed typhoid fever (Kirchmayer, Essau, Pince and Elting). With the passing of this disease and the exclusion of those cases in which the basic pathology is an obturating embolus with consequent infarction, analysis will prove that true types will less frequently be encountered. Malaria has been held

responsible according to Chowdhury, and Anderson. Omi, Bogdanik and Oganessoff report general infections or trauma. About twenty-five per cent of Küttner's collected cases followed general infections.

Splenotomy and drainage is usually the operation of choice (Johnston, Balfour and Elting). Hagen has reported five cases out of nine in which splenectomy was performed. The operation will vary with the type and extent of the lesion. Splenectomy may be performed in those cases comparatively free from adhesions and when it is possible to remove the organ without danger of spreading the infection.

Stucky reports a general mortality of from twenty-one to twenty-three per cent in operative cases of abscess and in nine per cent in typhoid abscess alone. Balfour in twenty-seven operative cases found four deaths, a mortality of fifteen per cent. Hagen reported nine cases of operation with one death.

Cysts.—The writer has recently reviewed the literature of this subject up to December 1, 1921. The classification dermoid, non-parasitic and parasitic covers the forms which are found in the spleen. The subdivision of non-parasitic cysts offered by the writer in 1913 has been slightly modified. The following is rational and is based on the mode of origin.

A. *True Cysts.* 1. Infoliation cysts. (Inclusions of peritoneum—congenital, inflammatory or traumatic, small or multiple—may be superficial or deep). 2. Dilatation cysts. Polycystic disease. (Coenen, Fowler—ectasis of splenic sinuses—multiple). 3. Neoplastic types (lymphangioma, hemangioma). It may not be possible to distinguish group two—polycystic disease which may be borderline in its tendencies between inflammatory and neoplastic hyperplasia from group three—new growths.

B. *Pseudocysts.* — Secondary 1. Traumatic cysts. These may arise from a hematoma and are usually large and unilocular (hemorrhagic and serous cysts so-called from their contents). 2. Degeneration cysts arising from secondary changes in infarcted areas from arterial degeneration or occlusion of blood vessels by emboli with consequent necrosis of the spleen pulp. These are also usually solitary and large.

The writer's review of cysts of the spleen may be summarized as follows: 1. There are two cases of demoid cysts reported. 2. There are ninety recorded cases of genuine and false non-parasitic cysts of the spleen which represent a variety of types due to various causes. 3. Non-parasitic cysts are most common in women during the child-bearing period. 4. Pregnancy and antecedent diseases of the spleen as malaria and syphilis cannot be evoked for more than minor contributing roles. 5. In the case of pseudo cysts, trauma plays the most important role in the sin-

gle, large unilocular, so-called hemorrhagic or serous type. The latter may develop from the former by liquifaction of solid contents or the hemorrhagic types may be caused by the occurrence of secondary hemorrhage into the serous variety. 6. The influence of a twisted pedicle, embolism and disease of intrasplenic blood-vessels cannot be denied. 7. In the case of true multiple cysts, inclusions of misplaced cellular nests (endothelium of the peritoneum or cells of origin of lymphatic spaces or vessels) during the developmental period or as a result in later life, of traumatic or spontaneous rupture of the capsule or of perisplenitis, may result in multiple cysts of the serous or lymphatic variety. 8. True neoplastic cysts (lymphangioma, hemangioma) are not common. 9. Sixty cases of non-parasitic cysts have been treated surgically, eleven by puncture, fourteen by incision and drainage, six by excision or partial splenectomy and twenty-nine by splenectomy. The later is usually the method of choice. The operative mortality for splenectomy is four per cent. 10. Echinococcus cysts occur in two forms, single and multiple; solitary cysts are more rare. 11. The combined statistics of Thomas, Mosler, Fehleissen, Coen and Tinkler indicate a possible total of 191 cases of parasitic cysts up to 1894. 12. Johnston collected from Bessel-Hagen's series fifteen splenectomized cases of hydatid disease up to 1900 with four deaths. He added eight additional cases with no deaths. The mortality for these twenty-three splenectomized cases is about seventeen per cent. 13. According to Finklestein there have been forty-six cases of echinococcus cysts subjected to splenectomy up to 1909, with eight deaths to which may be added two cases of Sherren and Hitzrot (unpublished) without mortality. The operative death rate for forty-eight splenectomized cases is about fifteen per cent.

Primary New Growths.—Sarcoma: Up to 1904, Jeppson and Albert collected thirty-two cases of primary new growths of the spleen, some of which may be disputed. Since the report of Jeppson and Albert, Council writing in 1912 has found four other acceptable cases in the literature reported by Power, Hendon, Mayo and Bush. He adds a case of his own.

Six additional cases have appeared up to July 1921, since the report of Council in 1912 and are contributed by McConnell, Jopson, Prinzing, Te-moin and Bonnell and Deaver.

There were twelve operations in the series of thirty-two possible cases collected by Jeppson and Albert. Of these eleven were splenectomies and one enucleation. The latter was for a pedunculated growth considered by Heinricius a benign fibroma. Later examination showed it to be fibrosarcoma arising from the capsule. The patient died seven years after operation. In the splenectomies there were three operative deaths

(Flotthmann, Krylow and Warren). Three of the eight surviving patients (Billroth, Jordan, Kocher) died of recurrence and one has not been traced (von Herczel). The remaining four cases were free from recurrence as follows: Fritch after 6½ years, Wagner after four years, Garre after four months and Jeppson and Albert after some months.

If we add to these the five cases analyzed by Council the series is increased to a possible thirty-seven cases with sixteen splenectomies, without added operative mortality. Of the thirteen cases which survived, one was not traced, seven were considered well at variable intervals after operation ranging from four months to 6½ years and five died of recurrence at varying intervals.

The six recent reports show that splenectomy was performed in five cases without operative mortality, making the total number forty-three for the series of possible cases of sarcoma reported in the literature up to July 1, 1921. There were twenty-one splenectomies with three deaths (fourteen per cent). End results have been reported in the first case of Prinzing (death in nine months), but are not stated in the remaining four.

Cavernous Angioma.—Dowd has reviewed the literature of cavernous angioma of the spleen in 1915 and analyzed thirteen cases including his own. Many of these cases are very similar, (Langhans, Jores, Dowd). It is open to question in many with extensive metastases in the liver which organ is primary (Ernest, Jores, Homans, Theile, etc). In but seven cases was the spleen apparently the only organ involved. In three of the remaining six (Martin, v. Benken-dorf, Anzilotti) it is uncertain whether other organs were invaded. (Splenectomies with operative recovery). In six splenectomies there were three immediate recoveries and two deaths. Operative result not stated in one. End result is given in only one case (Dowd) which succumbed 2½ months after operation from hemorrhage in angioma of the liver.

GROUP II

Three affections are reviewed in this group which may be considered clinically primary splenomegalia, i. e., splenic anemia, Gaucher's disease, and hemolytic icterus.

Splenic Anemia.—Banti now believes that the first stage of the disease may be prolonged for twelve years but that usually it does not last more than four or five, during which period the patient is constantly in danger of severe hematemesis and may at any time pass from this comparatively good condition to a stage of ascites, when the mortality of the operation at once becomes enormously greater. The mortality of the operation in the first stages, according to Banti, and also according to Rodman and Willard is about 12.5 per cent, while in the ascitic stage it

is well above fifty per cent. Banti reported thirty-six cases subjected to splenectomy in 1910. In the first stage he obtained three cures out of four cases by splenectomy after five, six and fifteen years. In the second stage he cured thirteen cases out of twenty-two splenectomized after seven, eight and fourteen years. In the third stage he reports four out of ten cases cured by splenectomy.

Wm. J. Mayo reports a total of seventy-one splenectomies in splenic anemia of unknown origin up to January 1, 1921 with nine deaths (mortality of 12.6 per cent). Under this title he also includes thirty-eight cases of splenic anemia of known origin.

Sweetser, in October 1921, reported forty-two cases in which splenectomy has been performed for enlarged spleen presenting ascites as a complication. He includes in his survey seven cases of primary cirrhosis of the liver with ascites, three cases due to syphilis with cirrhosis and ascites, one case of thrombosis of the splenic and portal veins and one case of primary lymphosarcoma. Prior to 1908, Sweetser informs us, there were eleven cases reported as splenic anemia with a mortality of 72.7 per cent, between 1908 and 1913 there were sixteen cases reported with a mortality of fifty-six per cent. In forty-two cases reported by Sweetser with eleven deaths, the mortality was further reduced to 26.5 per cent. As regards late results: In five cases there were no data at all. Of the rest one was a failure from the start, requiring paracentesis twice a week but was still alive eight months after operation, one suffered repeated hemorrhages from the bowel and succumbed at the end of five months, one was apparently in perfect health at the end of a year but suddenly died two months after from a hemorrhage from the stomach, six were alive and well at last report from a few months up to fourteen months after operation, and seventeen were alive and well for periods varying from fifteen months up to ten years after operation. It is seen that at least fifty-five per cent of the cases which survived operation lived and remained in good health for more than fifteen months and may therefore be assumed to be permanently cured. The case of lymphosarcoma was reported in perfect health after three years. One other case of sarcoma of the spleen was reported in 1908 as having lived four years and a half then dying of a cardiac affection. The three cases with definite syphilitic etiology all recovered and one was in perfect health at the end of seventeen months.

Syphilitic Splenomegalia.—Observations now point to the possibility that a large number of cases of splenic anemia may be due to syphilis. Frequently gummas and other specific changes are found in the spleen in addition to fibrosis and thrombophlebitis. *Spirochaeta pallida* may be

found. In the majority of syphilitic enlargements, energetic specific treatment is followed by diminution in the size of the organ and restoration to health. There are certain cases, however, in which syphilis is believed to be the cause of the enlargement in which such treatment is not efficacious. It is in this group that there is a field open for the surgeon.

Giffin of the Mayo Clinic in 1916, collected and analyzed six splenectomized cases of syphilitic splenomegalia including three of their own. He mentions the early case of Coupland, who in 1886 reported a case of splenectomy for syphilitic spleen. Two years after operation the patient died following hematemesis. Ascites had been present. Autopsy revealed a scarred liver typically syphilitic. Hartwell (1913) performed splenectomy on a patient with a severe anemia of the secondary type and a history of hematemesis. The patient denied the possibility of syphilitic infection, but a Wassermann test was strongly positive. Neosalvarsan, mercuric salicylate, potassium iodid, iron and arsenic had been administered while the patient's condition became less satisfactory. Splenectomy was followed by very prompt improvement. In two weeks the hemoglobin had risen from twenty-five to eighty per cent. French and Turner (1914) removed a spleen measuring 7 x 5 inches, weighing eighteen ounces from a boy aged five years, in whom there was a blood-count suggestive of the splenic anemia of infancy. A Wassermann test had been positive several times and the patient had received antisiphilitic treatment with no benefit. The patient was apparently well in two months.

The Mayos have operated upon six cases in all of syphilitic splenomegalia up to January 1, 1921 with one hospital death.

Tuberculous Splenomegalia.—In view of the extensive involvement of other organs as shown by Winternitz (liver involvement in eighty per cent, active lung lesions in twenty-four per cent, three cases liver and spleen only involved) this disease is rarely suitable for splenectomy. The preoperative pathologic diagnosis has rarely been made and the abdomen has been opened upon the assumption of an existing basic pathology of splenic anemia. Splenectomy has been performed, according to Winternitz, writing in 1912, seventeen times, ten of the patients recovered from the operation, five died and in two the result was not known. Cottis, Douglas and Eisenbrey and Buffalini have reported three additional cases with one operative mortality due to endocarditis on the ninth day.

Splenic Anemia in Infancy and Childhood.—Giffin has suggested a classification into two types based on the blood picture. The first conforms to the adult type of splenic anemia with leucopenia and the second to that generally known

heretofore as von Jaksch's Anemia and which differs chiefly in the presence of leucocytosis. Giffin has collected the literature of splenectomized cases. In the first group he includes cases reported by Bland-Sutton, Luce, Sutherland and Burghard, and Barling and Balfour with one death. In some the diagnosis is in doubt.

In the second group Giffin mentions four authentic cases reported by Wolf, Graff, Fowler and Pool. Additional cases have been reported by D'Espine and Hitzrot.

Excellent results have been obtained in very severe types of the disease in children. Wolff's patient was in excellent condition three years after operation, Graff's patient had improved markedly nine months after operation and Fowler's patient was in a satisfactory condition one month after operation. Pool's patient showed remarkable improvement for two months and at three months was reported as in a far less satisfactory condition. D'Espine's case died six weeks after operation and at autopsy a glandular tuberculosis was found. Inoculation of splenic tissue gave negative results. Hitzrot's case showed a striking improvement and gained rapidly in weight.

Canelli has collected thirty cases in 1921, diagnosed as primary splenomegalia in children of the so-called Banti type. Splenectomy was performed in twelve. All of these were cured or improved except an infant four months old.

Explanation of failure in splenectomy for splenic anemia: The poor results which occasionally occur may usually be traced to extension to the liver and portal system. In three patients of the seven who died in the Mayo series of sixty-one cases reported up to December 31, 1918 acute thrombosis of the superior mesenteric and portal veins was the immediate cause of death. A case of Hitzrot was markedly improved for nine months and then due to the increasing cirrhosis of the liver, developed ascites and in the fourteenth month a mesenteric thrombosis from which he died.

Hematemesis is not always relieved by splenectomy. The Mayos had one case of this kind but in their experience this was rare. Severe hematemesis or intestinal bleeding soon after operation has occurred four times in the series of Thursfield and Gow. Three of these patients recovered. The majority of patients, however, do not suffer from this feature after the operation. The relief of hemorrhage depends in part upon the condition of the liver as pointed out by Mayo and the underlying cause, whether due to esophageal or gastric varicosities from portal obstruction or to superficial gastric erosions of the mucosa from toxic conditions probably originating in the liver. Splenectomy relieves the portal circulation also the liver of an overload of venous blood and toxins, but if the liver is so extensively impaired

as to result in gastric mucus ulcers, hemorrhage may recur. In cases operated upon in the terminal stage of the disease, with well developed esophageal and gastric varicosities it is conceivable that the beneficial relief of reducing the portal circulation afforded by splenectomy upon this particular pathology may be but transient, especially in the presence of an impaired liver.

Harvey Cushing gives the interesting end results in a case of splenic anemia, Mr. C. D. B., who was operated upon by him in 1898 when resident surgeon at the Johns Hopkins Hospital. The man recovered. This case was subsequently referred to in all of Osler's three papers. Cushing has followed this case and the last report is dated February 13, 1920—twenty-one years after his splenectomy. Hemorrhages have occurred repeatedly, the last in July 1918 when he vomited about a quart of blood. Cushing cites the case of Mr. C. D. B. as quoted by Gaston Torrance in his article on "Splenectomy in Banti's Disease." Torrance collected thirty-six cases of which Mr. C. D. B. is XII. Concerning this patient Torrance states, "He made a good recovery and gained thirty pounds in weight. He was reported living and well eight years later with no return of the hemorrhages." Torrance's case number XIII is apparently this case, writes Cushing accredited to his one time chief, Dr. Halstead.

The moral of Dr. Cushing's narrative is self-evident and serves as a warning in this class of cases against hasty estimation of the value of splenectomy.

Gaucher's Disease.—Brill and Mandelbaum and Erdmann and Moorhead have reviewed the cases reported under this title. The former writing in 1913 recognized fourteen cases as genuine examples of the disease; on eight of these operation had been performed, with three immediate deaths, while of the other five no report was available in two, two were quite recent and no conclusions as to ultimate results could be deduced and of the remaining patient the liver continued to enlarge steadily. Erdmann and Moorhead recognize sixteen cases with ten operations, but considered some doubtful.

Up to April 20, 1921, I have collected nineteen splenectomized cases of Gaucher's disease, with five operative deaths. Wilson's first case (Mayo Clinic) was a hospital mortality. Of the deaths two were within a few hours after operation (Bovaird and Mandelbaum). Levy's case developed symptoms of tetanus on the eighth day and died thirty-six hours later. No autopsy. The fifth death occurred in eighteen days (Mandelbaum's second adult case). At autopsy a typical Gaucher's liver was observed though not enlarged.

Of the cases which recovered from operation, end results are available in twelve. In three the liver had continued to enlarge, (reports of fol-

low-up five, six and sixteen months post-operative). Kettle's case died in six months, no autopsy. Down's case which lived six years and died of influenza may be considered a cure. Herrman's two cases were benefited by operation, though it is rather early to speak of cures in such recent cases. Veeder and Clopton report their case in excellent condition after an interval of seventeen months. One of the adult cases of Mandelbaum is reported alive and well, that of Carr and Moorhead is said to have shown normal blood twenty-one months after operation. Dr. Wilson writes me from the Mayo Clinic (July 18, 1921) that Case II ultimately died three years and four months after operation and Case III was alive and well June 1, 1921. Dr. Erdmann in a personal communication dated August 1, 1921, reports his patient was well.

Hemolytic Icterus.—The literature of splenectomy in the treatment of hemolytic jaundice was analyzed in 1915 by Elliott and Kanavel who were able to collect forty-eight cases. The earliest case was operated on by Sir Spencer Wells in 1887, and reported by Dawson twenty-seven years later as cured. The fragility of the erythrocytes in this case was still increased. A patient operated on by Bland Sutton in 1895 was well ten years later.

In 1917, H. Z. Giffin analyzed seventeen cases of hemolytic jaundice treated at the Mayo Clinic. Twelve cases of both congenital and acquired types were splenectomized. There was one operative death (mortality eighty-one per cent). Their first patient was operated on July 30, 1911, five and one-half years ago and has been in excellent condition ever since that time. She had been constantly jaundiced from infancy to the time of splenectomy and has never been jaundiced since. During the five years preceding splenectomy she had had recurring attacks of anemia but has never been anemic since splenectomy. Reports from all save two of the other patients have been uniformly good. One boy of nine years who had an extremely large spleen and an enlarged liver, together with a very severe grade of anemia, has been in robust health since splenectomy. The condition of his blood improved with extreme rapidity after operation without any form of medical treatment other than hygienic care. Fifteen months after splenectomy the patient was in excellent health. The disease in the two patients who have not done so well was the acquired type. One of them died four months after splenectomy. The other rapidly became very much improved and was in excellent health for one year and a half. She then had a relapse of both the anemia and jaundice but improved satisfactorily after two transfusions and is now in good health again. The remaining eight patients have been well for twenty-three months or less.

Since the report of Elliott and Kanavel, Giffin

has found additions to the literature by Hellstroem (two cases); Peck (three cases, one case reported by Russell) and Friedman and Katz (one case) making a total, Giffin states, of sixty-six cases of splenectomized hemolytic icterus reported up to 1917.

The first case reported by Peck, is said to be the first instance of splenectomy performed for hemolytic jaundice in this country. The operation was performed in 1912 and was not included in the table of Elliott and Kanavel three years later.

In the further experience of the Mayos up to December 31, 1918, they state that they have had no more satisfactory results in surgery than are to be found in this group of cases. Only patients in a terminal condition with secondary gall stones and cirrhosis of the liver failed to be relieved. The only patient they lost in the series of twenty-seven splenectomies for hemolytic icterus was one operated on during an acute exacerbation. Mayo states that crises are a part of the picture of the disease and when severe have usually been due to gall stones, although it is undoubtedly true that exacerbations do take place from unknown causes in which there is a great but temporary increase of jaundice, with tenderness and increased tumefaction of the spleen and usually of the liver without gall stones.

There were two cases of hemolytic jaundice in Hitzrot's series (1918) only one of which the more recent one was investigated with sufficient detail to make a satisfactory record for report.

A search of the literature has been made up to September 1, 1921, and has revealed besides twenty-seven cases reported from the Mayo Clinic up to December 31, 1918, the case of Hitzrot, the six cases of Peck, Hellstroem, Friedman and Katz already alluded to, additional reports of fourteen other cases by Wynter and Sir Bland Sutton, Goldsmith, Pepper and Pearce, Brewer, Larimore, Hill, Uretia, Losio, Lewin, Hartmann, Pennato and Widere and Jervell. The above combined series, representing all available cases, presents a total of ninety-six splenectomized instances of this disease reported up to September 1, 1921, and shows a mortality of 3.1 per cent. Of the deaths, two occurred in the series of forty-eight collected by Elliott and Kanavel, one shortly after operation and the second in six weeks from sepsis. The third death occurred in the Mayo series and followed operation performed during a crisis.

Splenectomy in pernicious anemia, leukemia, polycythemia vera and primary cirrhosis of the liver, in which the diseased spleen is merely a part of an involved system, does not usually afford an attractive field. The results in these affections are not entirely disappointing, however. Splenectomy has been performed in the hope of stimulating the bone marrow or other-

wise interrupting a vicious circle by the removal of a link in a complicated chain.

Pernicious Anemia.—Cabot in discussing six splenectomies for pernicious anemia in 1914, stated he had never seen such great improvement by any medical agent as that which had followed splenectomy, that no medicament with which he was acquainted would bring up and hold the red cells above four million. Four of his patients had been incapacitated for two years or more and within a few months after splenectomy they were able to go back to work. He pointed out that as a means of producing a prolonged interval of well-being, his splenectomies have been worthwhile. Dr. Cabot has kindly had the above cases investigated and informs me that the cases alluded to have all subsequently died. The last death took place in 1919. One individual worked for nearly three years after splenectomy. Cabot's experience has confirmed the impression that splenectomy does not cure, but that a common result of splenectomy is a continued period of well-being, rather above the average level of the disease before operation. This period is of varying length and does not always occur. The belief is that because the operation involved is a major one, and because no prospect of cure can be held out, splenectomy is not usually attractive to those suffering from pernicious anemia.

E. B. Krummbhaar reported upon 153 patients in 1916 splenectomized for this disease. 19.6 per cent died in six weeks, 64.7 per cent were improved and 15.7 per cent were not improved.

Minot stated in a report on the anemias studied at the Massachusetts General Hospital that there was a greater degree of improvement in the splenectomized and transfused group than in any other, eighty-five per cent of the splenectomized group showing marked definite improvement, forty-five per cent showed rapid gains.

Thursfield and Gow have traced twenty-one cases of pernicious anemia (some doubtful) in which the spleen had been removed but in most of these the operation is as yet too recent to allow a judgment of the results. Mühsam has operated on eleven of these cases. Of these eleven, three died as a result of the operation, one with purulent bronchitis, one of collapse and one of bleeding. Two others died later, one of a "myelitis" which had been present before operation, one with a slowly progressive weakness. Mühsam's six remaining patients were all well, but "one cannot yet speak of a cure in any case". The hemoglobin and red blood cells have increased in all instances and though the blood is in no case normal, yet in all there is less of the degenerative changes. In Mühsam's second case the red blood cells have increased from 950,000 to 2,500,000, the hemoglobin from thirty-five to sixty-five per cent and the patient gained twenty-five pounds in weight. In another case the red

blood cells have risen from 1,100,000 to 2,800,000 and the hemoglobin from forty to eighty per cent.

In the Mayo's experience writing in 1919 the cases in which the results were most favorable the symptoms were less characteristic of pernicious anemia. In young and middle aged persons in whom the disease is most rapid, especially if hemolysis is known to be marked, splenectomy is worthy of trial. Taken as a whole, it may be said that whenever pernicious anemia has developed to the stage in which the blood is characteristic it is incurable and splenectomy is a means of palliation and not of cure. Since there is an operative mortality good reasons must exist for substituting operation for repeated blood transfusions. They have splenectomized fifty patients with pernicious anemia with three deaths. (six per cent).

The end results in these fifty cases are reported in February 1921, from the Mayo Clinic by Giffin and Szlapka. Of the forty-seven patients who survived the immediate effect of splenectomy, forty-two ultimately died at varying intervals. Detailed case histories of the five patients still surviving and in good condition up to the time of the report after a lapse of over four years following operation are illuminating. Wm. J. Mayo, writing on pernicious anemia in 1921, states that from November 1, 1917, splenectomy in this disease was discontinued almost entirely for three and one-half years. During this interval the end results of these cases were studied by Giffin and Szlapka and the following figures obtained: 21.3 per cent survived the operation for three years or more and lived two and one-half times as long as the average in a similar group of non-splenectomized patients in the same stage of the disease; ten per cent are living after more than five years. This shows that in at least one-third of the cases the average life of the patients with pernicious anemia is greatly prolonged and in about ten per cent the prolongation is sufficient to lead to the hope that cures may result in some cases. These results have not been duplicated in a similar series of non-splenectomized patients, it is believed. In the average cases, palliation following splenectomy is greater than results obtained by blood transfusion.

Leukemia.—The older statistics showed an alarming mortality for splenectomy. In twenty-eight cases there were twenty-five deaths attributable to the operation. Twenty occurred during the first twelve hour period from hemorrhage. Two resulted from peritonitis and one from shock. Result unstated in two cases. These figures were sufficiently discouraging to advise the giving up of the operation. A period of repose for splenectomy consequently existed in this disease because of tradition which held that most patients die following the operation and that those who recover are not benefited.

Wm. J. Mayo, however, recently reported twenty-seven splenectomies for this disease in their experience for which the patients were properly prepared by irradiation of the spleen in which there was but one death, and that from embolus two weeks after operation. While the improvement was temporary in most instances a few of the patients have shown such extraordinary betterment, lasting such a length of time as to suggest that they were not truly leukemic.

Polycythemia Vera.—Writing in October, 1908, F. Weber was able to tabulate four cases in which patients suffering from polycythemia and splenomegalia had been subjected to operation. One patient died immediately of hemorrhage, one of sepsis six weeks after operation, one of a cause not stated twenty-five days after operation and the fourth survived the operation sixteen months. The diagnosis of the latter case has been disputed.

Blad removed a spleen from such a case in 1907. It ended fatally. Two years later Schneider accomplished this but splenectomy had no effect on the disease. Moynihan states the spleen keeps the disease in check and it should never be removed.

Mayo has removed a spleen in this disease which was greatly enlarged with extraordinary improvement. The result in this case suggests that despite Moynihan's warning, the disease may be benefited by splenectomy and that the spleen has an important role in its production. Splenectomy is at least worthy of further trial.

Cirrhosis of the Liver.—Encouraged by results of splenectomy in splenic anemia with terminal cirrhosis of the liver, the enlarged spleens associated with primary portal and billiary cirrhosis of the liver have been removed.

In 1913, Kidd commenting on the clinical similarity of Banti's disease with primary cirrhosis of the liver, made the assertion that all cases of hepatic cirrhosis with enlarged spleen should be given the benefit of splenectomy stating "that we now operate on cases labelled Banti's disease and it is hard work to find where the difference lies".

Wm. J. Mayo has splenectomized cases with great benefit and states that the results will depend on whether the liver retains sufficient capable cells to carry on its function.

There have been twelve cases treated by splenectomy reported as primary portal cirrhosis of the liver with five deaths. One reported by Sherren, besides ascites has also marked edema of the legs and scrotum and fluid in the right pleural cavity and it is not surprising that death resulted. Wm. J. Mayo reports eleven splenectomies for primary portal cirrhosis with four deaths up to January 1, 1921. All of these patients were in the last stages with ascites and hemorrhage from the stomach. To this operation has been added some form of omentopexy. Four of these patients were markedly benefited.

One patient is now alive after five years. In early operations the operative mortality would be small and the end results much better.

Splenectomy has also been performed at the Mayo Clinic in six cases of primary biliary cirrhosis with greatly enlarged spleens. In these cases the cause of the biliary infection, such as gall stones and focal infections had been removed previously with marked relief. All of the five patients who recovered were greatly benefited, three were alive two years after, two three years after and one five years after splenectomy. This group gives food for thought as to the future possibilities of splenectomy as a successful treatment of cirrhosis of the liver in its terminal and otherwise fatal state of ascites, but one must be especially guarded in advising surgical treatment for biliary cirrhosis and careful to exclude confusing types with hemolytic tendencies.

FURTHER OBSERVATIONS OF PROTEIN INJECTIONS IN SEVERE OCULAR INFECTION.*

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IN responding to the invitation of our secretary, that I present to you some further observations on protein effects in ocular infection, I confess my hesitation and temerity, when I view the present broad scope this subject has recently assumed in all branches of medical study. On the other hand I am of that school which believes in clinical results, however empirical the remedy may seem, and I therefore would offer to you for consideration and discussion some observations, which have been the seat of real interest and study, constant attendance and care, and yet of firm self-abnegation, patient but distrustful course of experiment. Mills attempted to base the law of causality upon an *inductio per enumerationem simplicem*, as an expedient to reduce presuppositions in an indirect way to empirical truths. And yet it is certainly quite evident that only by induction through enumeration can the real value of protein therapy be determined. With this end in view, I am prepared to report briefly to you certain cases of severe ocular infection which I have regarded as indicating a definite protein effect, also reports of cases observed recently by others who have employed this method of combating ocular infection, and finally, I would point out what has been characterized as the non-specific reaction and its probable mechanism of effect.

Protein therapy has become very popular, perhaps too popular. Innumerable kinds and varieties of proteins or non-specific agents have

been employed, some empirically, others with a definite immunological theory underlying their use, and yet all of them, whether it be serum, vaccine, enzyme, or chemical agent, having more or less constitutional effect upon the patient. It is now well recognized that three papers published by Renaud, by Kraus and by Ichikawa, reporting undeniable clinical results from non-specific therapy, can no longer be swept aside by the laboratory conception of a strictly specific therapy. This has been made clear by series after series of corroborative observations reported in the European literature from many sources, each independent of the other, different agents and methods being employed, and in the treatment of numerous diseases. These authors are too numerous to mention—but prominent among them are,—Paton, Lillenthal, McCallum, Darier, Bingel and others using diphtheritic antitoxin; Deutchmann, "yeast" serum; Schmidt and Saxl, milk injections; Ludke, proteoses or albumoses; Mittlander, hypertonic salt solution. In America, Miller, Lusk, Snyder and Ramirez have employed typhoid vaccine and secondary proteose in their work and have reported large series of cases so treated.

My observations are limited to those following the injection of diphtheritic antitoxin, although I have employed pasteurized sterile milk in two cases. In the latter (cases of advanced hypopyon keratitis), the constitutional reaction was peculiarly violent and from which no noticeable beneficial effect upon the infection could be traced with any degree of certainty.

On the contrary my experience with anti-diphtheritic serum as a non-specific, or para-specific agent—whichever it may be correctly considered to be in the light of recent researches.—has proven conclusively to me the efficacy of the serum in combating pneumococcal and straphylococcal infections of the refractive media of the eye. To substantiate this conclusion, I am prepared to offer additional evidence to my previous efforts in the study of this subject. In 1919 I reported thirty cases in detail together with numerous observations by other experimentors, published in the Transactions of the American Ophthalmological Society, 1919, and in the *Archives of Ophthalmology*, Nov., 1920. Two years ago I reported before this Society in detail fourteen additional cases together with an analysis of the effects and the probable reaction (*New York State Journal*, January, 1921).

During the past two years I have employed the serum in twenty-three cases; nine of these being hypopyon keratitis, five infection of anterior segment after penetration, three panophthalmitis, six ulcer serpens. To relate these cases in detail would consume unnecessary time, and would only be in fact a restatement, with few exceptions, of similar cases, changes, and results as those presented in my previous reports. A

* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 19, 1922.

brief analysis of these cases, however, seems fitting, in order to emphasize certain phases of this treatment which may prove interesting and worthy of your own observation.

Of the nine cases of hypopyon keratitis, all but two were past middle life; one of these was twenty-six years of age, the other ten years. In both young patients prompt result from serum injection was observed, and convalescence was short. In only two other cases was delayed effect of the injection noted; one of these, G. W., aged sixty-four, admitted September 16th, 1920, proved to have a 4+ Wassermann reaction, but promptly responded with the addition of mercury and K. I.; the other case occurred in a man sixty-five years old, with extensive corneal destruction, observed two weeks after the onset, and whose physical condition was extremely poor. This bears out the usual history of these cases, since it is well known that hypopyon keratitis occurs more commonly in the aged and among debilitated individuals, frequently following upon the neglect of a local injury. These observations were also noted in the forty-four cases I have previously reported, and are in keeping with the two fundamental theories as to the biological alterations which take place in the organism after injection of a so-called nonspecific agent,—namely: (1) those that involve cellular stimulation, the "Plasmaactivation" of Weichardt, and (2) those resulting from alterations in the permeability of the cells, studied by Luithlen, by Starkenstein and others, and which represents a diphasic phenomenon.

In only one of the nine cases of hypopyon keratitis was the ulcer located in the margin of the cornea, this case being the one related above of syphilitic involvement. Eight cases therefore had the process of ulceration in the centre of the cornea, this being the area least protected by systemic resistance, furthest from the source of nourishment (the blood). This observation is also in line with Weichardt's hypothesis of marked increased cellular activity (glandular, muscular and leucocytic), and with Starkenstein's diphasic changes in the permeability of the capillaries and tissue cells, which result from moderate doses of non-specific agents, such as anti-diphtheritic serum or typhoid vaccine, etc., and which therefore produces so-called "non-specific" resistance to infection in a vital area (centre of the cornea) and in an aged and debilitated individual.

In all the cases in which smears or cultures were made, the pneumococcus, as was to be expected, prevailed.

The treatment was similar in all the cases:—cauterization with carbolic acid (concentrated) followed immediately by alcohol (50 per cent); in advanced cases multiple incisions through the ulcerated area, followed by the carbolic and al-

cohol cauterization. Anti-diphtheritic serum, from 1000 to 3000 units (varying with the age and size of the patient), was injected at the earliest possible moment, this dose being repeated in forty-eight hours depending upon the reaction observed after the previous injection, and as often thereafter repeated as seemed advisable in the individual case. The usual local treatment of hot fomentations, atropine and bichloride vaseline (1-5000) was fairly routine in all the cases.

Daily observation of these cases revealed changes most of which I have previously mentioned, but which now are almost to be expected as the course of such a case is followed. In twenty-four to forty-eight hours after the initial injection, the hypopyon was reduced or had disappeared in all but one case (this being syphilitic); hypopyon reappeared in two cases but disappeared promptly with the injection of the serum. Besides the very noticeable effect upon hypopyon, almost invariably there was relief of pain, rapidly subsiding conjunctival and iritic reaction, and a clearing away of ulcer debris, such as does not usually occur in these cases, the ulcer itself taking on a clear and clean appearance early in the process of repair. Here again we find our observations are perhaps accounted for, are really expressions of the non-specific reaction to serum injection, conclusions arrived at by investigators in larger fields of research than ours. I refer you especially to the researches of Luithlen in 1912, those of von den Velden, Siegert, and Starkenstein relative to the increased permeability of the capillaries and cell membrane; those of Dollken and King relative to the nervous reaction; also those of Heidenhain, Teague and McWilliams, Davis and Petersen relative to the lymphagogue effect following protein or non-specific injections.

Of the five cases of penetrating wound with infection, only one of them—observed late and in a man 46 years old—resisted the stimulating and generally resisting effect of the serum injection, but even this case subsided without violent local symptoms, the anterior chamber clearing entirely of hypopyon, the cornea becoming clear and lustrous—evidence of the lymphagogue effect?—although phthisis of the globe slowly followed. Another of these cases—girl, H. B., nine years, (Hospital No. 6562), ruptured globe with infection,—improved remarkably after serum injection, and although phthisis followed slowly, the anterior segment of the eye in a short time cleared entirely of hypopyon, the cornea remaining clear and lustrous. In another case—T. O., strong and stalwart man of 43 years, (Hospital No. 04431), cornea penetrated by nail three days before, hypopyon 2 mm., violent conjunctival and iritic reaction—definite signs of repair and relief of pain followed the initial injection of 3000 units, hypopyon gradually disappeared, reaction subsided and he was dis-

charged after twelve injections of the serum, the eye being entirely quiet, the anterior segment clear and lustrous as the normal eye. In another case—F. C., man, twenty-nine years, (Hospital No. 7211), penetrating wound of cornea, admitted March 27th, 1922, *no* hypopyon; on *third* day in spite of the usual intensive local treatment hypopyon 2mm. developed over night, lips of wound were whitish, entire cornea hazy, usual iritic reaction—not *until* hypopyon developed was the serum injected, 3000 units. A peculiarly violent local and constitutional reaction followed (great oedema of the injected arm, temperature $101\frac{1}{2}$, nausea and headache, mild erythema of arm and body), but in 24 hours there was coincident with this general reaction, relief of ocular pain and definite reduction in the hypopyon, which disappeared entirely in 48 hours, and daily improvement (clearing of the anterior segment) allowed his discharge 10 days later. Could this complete reversal in the behavior of an anterior infection be attributed to sudden systemic stimulation ("Omniscellular Plasmaactivation" of Weichardt) and increased local resistance through increased permeability of the capillaries and cellular elements induced by the protein injection? My answer is, that at least such effects as these, undeniably demonstrated, can not be ignored. It is quite evident that the best opportunity for observation of the clinical effects is offered by cases of penetrating wound of the cornea with infection, because the only local treatment administered is that of hot fomentations and atropine, antiseptics being of little value, whereas in *ulcus serpens* with hypopyon, the effect of cauterization and local antiseptics can not be as clearly separated in many cases from the effect produced by protein injection.

Of the three cases of panophthalmitis, two occurred following penetration, one after cataract extraction. Would that time permitted to relate these in detail, for in each case there was evidence of local resistance to the infection. Suffice it to say that in one case the eye slowly quieted, anterior segment cleared entirely, all conjunctival reaction subsided, the eye, now one year old, is soft, of good appearance, and he refuses enucleation. A second case, very similar to the first, remains under observation. The third case, observed at the very onset of the infection, received 3000 units, with marked improvement in 24 hours, but subsequent injections failed to check the process, and slowly but quietly, only moderate reaction being present, disintegration of the globe continued. At this time, however, the anterior segment is unusually clear as though irrigated by a lymphagogue effect of some systemic influence (protein?).

Six cases of *ulcus serpens* are mentioned as being treated with the serum, merely to indicate the character of case best suited for protein

therapy. The results are found in these cases. In all but two of them cauterization was used, because the ulcer was almost invariably located centrally, and most frequently in patients past middle life, and to delay local intensive measures, in order to observe the serum effect, would prove little and risk much. Furthermore, under such conditions, where delay was possible and justified, improvement and healing may have occurred anyway, regardless of injection without intensive antiseptic measures. Here the *natural* forces of resistance may have been sufficient without either injection or antiseptic aid.

Aside from my own observations on this subject, I wish to call your attention to the experience of others who have used anti-diphtheritic serum as an aid in combating ocular infection. Dr. Shober Smith has kindly presented to me the histories of four cases, in which he has recently used the serum. Two of these were cases of hypopyon keratitis, in which the hypopyon disappeared in 48 hours after injection, both cases proceeding rapidly to a satisfactory result; one case of penetration with infection of wound and hypopyon (2 mm.) yielded promptly to injection, in 24 hours hypopyon disappeared, all symptoms rapidly subsided; one case of infection after iridectomy in a man 73 years old, hypopyon and cloudy anterior segment second day, serum injected with disappearance of hypopyon in 24 hours and recovery; later extraction of the lens yielded vision =20/30—. Dr. F. W. Shine has employed the serum in five cases; one of these a case of hopeless sympathetic ophthalmia and in which in 48 hours there was definite evidence of a clearing of the anterior segment; also a case of infection after cataract extraction, which promptly yielded to treatment and recovery. Another case of post-operative infection in which he was uncertain of any effect; also two cases of *ulcus serpens*, in one of which no effect could be detected, the other recovered without event. Dr. G. H. Bell has used the injections in a number of cases and believes in the efficacy of the treatment. Dr. Henry L. Sloan, Charlotte, N. C., reports a case of infection after penetration which was definitely improved by diphtheria anti-toxin injections. Dr. de Schweinitz reports a case of hypopyon keratitis unaffected by intensive local measures, 30 hours after injection of 1500 units of anti-diphtheritic serum improvement was noted, and the condition subsided after further injections of the serum. At the next meeting of the American Ophthalmological Society, Dr. H. F. Hansell and Dr. G. O. Ring, Philadelphia, will present a paper which concerns itself with the report of four cases of post-operative infection and one case of violent infection following foreign body in vitreous. Each of these cases

they believe to have been cured by the administration of diphtheria anti-toxin.

NON-SPECIFIC REACTION

During the past five years this subject has received such wide attention, yielding innumerable clinical observations and intensive experimentation, that correlated data from many sources has begun to focus upon a common ground of understanding as to the reaction of the organism to non-specific therapy and the mechanism of this reaction. This study has grown out of nature's own methods of resistance and repair, constantly demonstrated by the reaction from counter-irritants, vaccines, enzymes, drugs, yeasts, colloidal metals, etc. It is believed therefore that in a similar manner, there is brought about in the body, true tissue stimulation and activation, the therapeutic effect being produced by altering the reactivity of the whole organism, rather than directly influencing the cause of the pathological process.

This reaction is expressed (depending upon the character and amount of the agent injected and the sensitization of the particular individual to it) by a chill, rise in temperature, variations in pulse and blood pressure, sweating, nausea, nervous irritability, skin reaction, glandular activity, permeability of the capillaries, lymphagogue effect, and certain variations in the blood—such as concentration, leucocytic response, increased antiferment, and alteration in the antibody titer of the serum of the patient. Luithlen determined the permeability of the abdominal capillaries by injecting sodium iodid into the veins of rabbits and tested the rate at which it entered into the Ringer's solution which he had injected into the peritoneal cavity. Siegert and also Schmidt found that small doses of protein increased the permeability. Starkenstein produced corneal ulcers in rabbits, then observed the rate at which dyes would diffuse out at the site of the lesion after a variety of non-specific injections. It was concluded that non-specific injections increased the permeability of the capillaries for a short period and later caused a definite lessening of the permeability. Heidenhain classifies certain proteins as lymphagogues because of the marked increase in the lymph flow which they produce. Teague and McWilliams believe the lymphagogue effect is responsible largely for the therapeutic influence of protein injections, because the antibodies of the blood stream are forced into the lymph spaces and there may destroy the invading micro-organisms. Davis and Petersen investigated this effect upon the lymph flow, using dogs in whom a lymph fistula was made at the thoracic duct and then injecting killed colon vaccine intravenously to produce the shock effect. It occurs to me that the above related experiments are highly significant when

one repeatedly observes the effect of diphtheritic antitoxin upon the lymphatic structures of the eye, the effect upon hypopyon, and clearing of the anterior segment, already alluded to.

Some believe that the chief factor in the therapeutic result is from leucocytic stimulation, but this point is variously regarded, since many conflicting experimental results are reported. Others believe the therapeutic effect is due to some alteration in the antibody titer of the serum of the patient. This theory also is the subject of much debate and of continued experimental tests. The popular explanation is found in the general stimulation of the protoplasm (Weichardt) and in the permeability of the cell membrane (Luithlen and Starkenstein). Permeability of the capillaries is increased as evidenced in the increased lymph flow and in the concentration of the blood; permeability of the tissue cells is increased, with an outpouring of enzymes, immune bodies, etc.; increased permeability of the nerve cells is associated with a lowering of the threshold for nervous impulses and is manifested clinically in increased irritability, headache and susceptibility to pain. When this first phase has passed a compensatory phase of lessened permeability of the cells occurs, with lessened nervous irritation and susceptibility to pain—lessened exudation—a lowering of enzyme concentration, etc.

With these investigations in mind, I have recently given sub-Tennon injections of warm hypertonic salt solution at three to twelve hour intervals after injection of the serum, for the purpose of increasing locally the flow of lymph, increasing the permeability of the capillaries and stimulating leucocytic activity. Only four cases have been so treated, but the effect noted is worthy of mention, and leads me to believe that with more light upon the subject of administration and dosage in relation to the stage of the infectious process and the time of other treatment, one may administer the serum with more confidence in the effect.

I wish to extend my thanks and appreciation to Dr. W. E. Lambert, on whose service at the New York Eye & Ear Infirmary most of these cases have been studied.

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Discussion

I do not wish to give you the impression for a moment that I am too enthusiastic about this method of treatment. I am *not* over-stating the situation at all. But I do want to suggest this—that when you see your next case of penetrating wound with infection, add to your regular treat-ment of hot bathing and atropine in the Hospital, 3000 units of antidiphtheritic serum in the adult or 1000 units in a child, and note carefully the effect in twenty-four to forty-eight hours. Or when you see your next almost hopeless case of hypopyon keratitis—try the serum and observe the results for yourself.

ACUTE PANCREATITIS.*

By HARRY R. TRICK, M.D., F.A.C.S.,
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MY particular interest in acute pancreatic disease was rather rudely awakened about two years ago when two cases presented themselves less than a week apart, and both of which I missed.

The first was a fairly intelligent man whom I diagnosed from the history, which was quite typical, as suffering from a perforated duodenal ulcer.

The usual upper right rectus incision revealed a great many areas of fat necrosis and quarts of "beef broth" exudate which was pouring out of the foramen of Winslow; no ulcer was found; the gall-bladder appeared to be normal.

Generous drainage was established and he finally recovered, but even to this day he suffers occasionally from the reopening of an old fistulous tract, especially after ingestion of certain foods such as raspberries, the seeds of which seem to have a predilection for this abnormal route.

The recovery of these seeds as above mentioned always makes me feel that my original diagnosis was not entirely wrong. I hope some day to have an opportunity to solve the puzzle.

The second case was an ignorant foreigner, a woman, from whom no history could be obtained.

I diagnosed her case as a ruptured appendix and although I attempted to establish free drainage, she died.

Needless to say, I immediately started out to find, if possible, what was the matter with me and went among my associates looking for sympathy, aid and advice.

I received a lot of the first but not much of the other two. In fact, one of my friends almost discouraged me by remarking that the more he studied the acute pathology of the pancreas, the less he thought he knew about it. Since that time I have been unusually alert, but have not yet had the satisfaction of finding one other case.

This infrequency of cases of acute pancreatic disease as compared to other abdominal lesions, to my mind, accounts very largely for our many errors in diagnosis.

In a recent study of the case histories at the Buffalo General Hospital covering the past two years, thirteen cases of acute pathology of the pancreas were found. Of this number, only four were diagnosed before operation.

The others were variously diagnosed as acute cholecystitis, acute appendicitis, intestinal obstruction, perforated gastric and duodenal ulcers, etc.

In other words, almost every type of so-called

"acute surgical abdomen" has been diagnosed for what proved at operation to be an acute pathologic process of the pancreas. This small proportion of correct diagnosis is the rule rather than the exception.

Sir Berkeley Moynihan says: "Acute pancreatitis is one of the most serious diseases which the surgeon is ever called upon to treat.

"When the records of published cases of acute pancreatitis are studied, it is seen that the number that have been correctly diagnosed before the operation is extremely small."

Although the number of cases reported above is small as compared to the total number of cases in the hospital during that time, it is sufficiently large to show that we nearly always have it with us and to show the need for keeping the disease in mind, particularly when considering acute surgical lesions of the upper abdomen.

The great difficulty of our task, however, is the evaluation of similar symptoms produced by acute processes in remote or contiguous organs or systems.

The chronic processes are open to more careful study and offer a reasonable expectation for a fairly accurate diagnosis, but the acute processes demand immediate relief and in some instances the very urgency of the demand precludes an accurate diagnosis.

Maurice Richardson once said: "The diagnosis of acute lesions of the pancreas has been, in my observation, so difficult that when the correct deduction has been made, that deduction has been regarded as a real triumph in diagnosis."

So I bring this problem here for discussion with the hope that we may bring out some more or less pathognomonic sign or symptom.

The first comprehensive study of the acute pathology of the pancreas was made by Reginald H. Fitz. This report was published in 1889.

He spent twelve or thirteen years at the work and although he made some additional comments during subsequent years, he made no radical change in his original conclusions.

He classified the acute pathology into three types: the suppurative, hemorrhagic and gangrenous pancreatitis.

This classification, although it has been very freely criticized, has a certain clinical value because it furnishes us with a mental picture that may be of service in differentiating obscure lesions of the upper abdomen.

A large amount of study has been given this subject since Fitz published his memorable article, but even today there is a wide difference of opinion as to the method by which the condition is brought about.

Certain observers insist that practically all forms of pancreatitis are due to infection, frequently beginning as a perilymphangitis from extension of disease of an adjacent organ, while

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Joseph H. Pratt claims that "True inflammation resulting from bacterial action is an unimportant factor in the production of acute disease of the pancreas."

He also claims that the three conditions described by Fitz are simply different stages of the same process and proposed grouping all of them under the head of "acute pancreatic necrosis."

We should be prepared to interpret any case of this sort as having a pyogenic or mechanical or chemical cause.

However, all authorities are agreed that the rapid destruction of the gland substance in the acute processes is due to the activation of its own secretion.

The method by which the pancreatic secretion is activated while still within the gland is unknown.

Opie succeeded in demonstrating a gall-stone in the ampulla of Vater with consequent *forcing* of bile into the duct of Wirsung; Archibald secured similar results by causing a spasm of the sphincter of Oddi by hydrochloric acid and increasing the pressure in the bile ducts; while Williams and Busch obtained the same result by dilating the sphincter by means of glass balls, thus permitting the *easy* regurgitation of duodenal contents into the pancreatic ducts.

To add to the confusion of ideas, it is only necessary to call attention to the fact that duodenal contents containing generous amounts of mucin will not activate the pancreatic secretion, but only when it contains unneutralized gastric juice or large amounts of bile salts or bacteria, and when we consider that bacteria alone can activate the pancreatic secretion we must not overlook the possibility of a blood-borne bacterial activating agent in an organ that has a very generous blood supply and is engorged after a hearty meal, when this catastrophe is most apt to occur.

These attacks have been known to follow scarlet fever, mumps, diphtheria, etc.

This seems like a formidable array of facts concerning the etiology of two or possibly three closely allied conditions, but fortunately the symptomatology can be arranged into about three groups.

If the lesion of the pancreas is due to a suppurative process, it is generally secondary to some infection of an adjacent or closely related organ, such as cholecystitis, appendicitis, gastric or duodenal ulcer, etc.

It matters little whether the suppurative process begins as a peri-pancreatitis or in the substance of the gland, we will have the history of preceding digestive disturbances with the local symptoms dependent on the extent and suddenness of the pancreatic involvement. Small, localized abscesses with very little if any, tumor formation or a sea of pus filling the lesser peri-

toneal cavity with the necrotic pancreas floating free in it.

If the destruction of the pancreatic tissue be due to chemical action alone, autolysis through activation of its secretion, we may have a history of recent indiscretions in eating or drinking or a traumatism causing a temporary ischemia, such as the passage of the wheel of a truck.

It has been shown experimentally that shutting off the blood supply will cause autolysis of the gland.

This form of the disease causes extravasation of blood throughout the parenchyma of the gland, producing various shades of red to black discoloration. Hence the name, acute hemorrhagic pancreatitis.

The gland feels tense or pulpy according to the extent of the autolysis, and the digestive ferments attacking the surrounding tissues produce what is sometimes spoken of as "beef-broth exudate" from its physical appearance.

The fat-splitting ferment is liberated and travels via the lymphatics, producing areas of fat necrosis, at considerable distance from the gland as well as in its immediate vicinity.

A third form of pancreatic disease which is by far the most serious is sometimes called "ultra-acute" pancreatitis or pancreatic apoplexy."

No satisfactory explanation for it has yet been made.

In this form the hemorrhage comes first, the degenerative processes later. In one case reported, the fatal hemorrhage apparently came from the superior pancreatico-duodenal artery. Anatomists have frequently commented on the ease with which their embalming solution escapes from the pancreatic vessels but no satisfactory explanation has been offered.

Fitz called attention to the fact that there is no fat necrosis in this type and seldom any in the suppurative. The process is too rapidly fatal for the tissues to show any reaction. But what causes the sudden death is unknown. The size of the hemorrhage is not sufficient to explain it.

The symptoms are quite in keeping with the various pathologic processes described.

Fitz said: "Acute pancreatitis is to be suspected when a previously healthy person or sufferer from occasional attacks of indigestion is suddenly seized with violent pain in the epigastrium, followed by vomiting and collapse, and in the course of twenty-four hours by a circumscribed epigastric swelling, tympanitic or resistant, with slight rise of temperature."

That is a very good description of many forms of acute upper abdominal disease, but nearly every item of the description might be somewhat elaborated. For instance, the pain of acute pancreatitis seems to be quite constant or continuous, practically unmodified by morphine and of a sort that seems "to take away their breath,"

probably due to the disturbance of the solar plexus. This produces a form of dyspnoe with cyanosis, occasionally of a curious yellow tinge, involving the entire upper portion of the body and upon which Halstead lays considerable stress.

The frequent vomiting of bile-stained watery fluid gives no relief, and there is no hyper-peristalsis such as is commonly demonstrated in bowel obstruction. The swelling is deep seated without much muscle spasm but a sense of resistance is elicited by palpation. There is generally a resonant note on percussion.

The tympanites may be relieved by enemata, but without any apparent benefit.

The degree of shock varies from a condition of fainting to collapse, but in anything less than collapse the pulse rate is fairly slow and of surprisingly good quality when considered from the standpoint of the general appearance of the patient.

The temperature may be normal or sub-normal; elevation of temperature comes later.

The condition demands thoughtful consideration. If the collapse is profound, the lethal form of the disease should be suspected and no surgical intervention attempted because pancreatic apoplexy kills, if it is to kill, in a few hours and surgery would only hasten the end. Our efforts should be directed toward combating the collapse.

If the pulse seems to be of fair quality and the temperature about normal in spite of the other evidences of shock, one of the less serious forms should be suspected. The acute hemorrhagic or suppurative form requires a matter of several days, or even weeks, to cause a fatal issue, during which time the patient may rally sufficiently to justify an attempt at surgical relief, but it should be attempted at the first definite sign of improvement, since the condition of the patient is due to the absorption of the toxic material present. Whipple and others have apparently shown by experiment that the exudate is innocuous to laboratory animals but it must be good surgery to relieve the economy of such a mass of partially digested debris.

This is no time for definitive surgery,—simple incision and drainage of all collections by tubes and oiled silk is the best surgery; cholecystostomy or cholecystenterostomy might be performed if the condition of the patient would warrant.

If the exciting cause can be determined it may be removed or corrected later but there is much to be learned about the problem.

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OBSERVATIONS BASED UPON TEN YEARS' EXPERIENCE WITH NITROUS OXID OXYGEN AS AN ANÆSTHETIC.*

By PALUEL J. FLAGG, M.D.,
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ON January 16, 1911, it was the author's privilege to read a paper before the Westchester County Medical Society in which he reported 100 cases of gas oxygen anæsthesia.

The position was taken that gas oxygen was the safest anæsthetic known and that its administration was practical as a routine procedure. The following advantages were claimed:

1. Safety.
2. Natural immunity not affected.
3. No effect on latent tuberculosis.
4. No known ill effects upon internal organs.
5. Induction rapid and pleasant.
6. Recovery almost immediate.

In order to obtain the benefit of these advantages, it was assumed that the administration be limited to physicians especially skilled and experienced in the administration of anæsthetics. It was conceded that the apparatus was cumbersome; that persistent muscular rigidity occurred in 5 to 8 per cent of the cases; that venous hemorrhage was increased and that nose and throat work was not practical with this form of anæsthesia. It was considered advisable to use gas oxygen in all cases of sepsis or suspected sepsis, in the extremes of age, in those particularly susceptible to the effects of ether and in the tubercular. The method of administration employed was that suggested by Gatch of Johns Hopkins. It consisted of an intermittent flow of gas with rebreathing.

Since Gatch's renaissance of this form of anæsthesia in 1909, first employed by E. Andrews, as early as 1868, the method of administering gas oxygen has undergone many modifications and amplifications.

METHOD OF ADMINISTRATION

The administration of gas oxygen by the method of intermittent flow demanded a certain mechanical dexterity on the part of the operator, a discriminating judgment in the dosage of the gases, combined with a willingness to exert

* Read before The Medical Society of the County of Queens, October 25, 1921.

oneself a little more than usual. These qualities being by no means universally possessed by anæsthetists, a concerted effort was made to simplify the delivery of the gases to the patient, thereby bringing this form of anæsthesia within the reach of all.

Various contrivances were devised to yield a constant flow of gas and oxygen under a definite pressure; these gases being mechanically mixed so that any desired percentage was obtainable.

It was not long before the market was flooded with beautifully designed instruments ingenious in their construction and capable in most cases of achieving the end desired. Broadly speaking, these apparatus designed for a constant flow of a definite percentage required reducing valves, a heating element (electricity or alcohol) and a device for measuring and mixing the gases as they were delivered to the patient.

The administration of gas oxygen was thereby simplified, but this simplicity implied the constant upkeep and perfect functioning of a complicated machine. In large surgical clinics constant use resulted in a fair degree of success. In the operating-room where only an occasional gas oxygen was administered, however, the complicated apparatus has become merely ornamental and a collector of dust.

On the other hand, the method of intermittent flow requiring nothing but a simple cylinder holder is practically always available and when coupled with the necessary qualifications in the person of the administrator is usually entirely satisfactory for all but nasal operations.

THE USE OF ADJUVANTS

It has always been considered desirable to add a few drops of ether, if necessary, to secure proper muscular relaxation. These minims often become drams and occasionally ounces. The writer often recalls a case in which he had struggled to give a good gas oxygen anæsthesia to a septic young man for an abdominal section. At the end of the operation, the surgeon, a man of wide experience, inquired how much ether had been used, and upon learning that the patient had had only three ounces, remarked "That's fine." The force of that cynicism was never appreciated by the author until years later, when he discovered that by the correct use of a closed method he could anæsthetize a patient with three ounces of ether alone.

Morphine and atropine, hyocine, paraldehyde and other drugs have always been found necessary to take the edge off the reflexes under gas oxygen. Indeed, it is absolutely essential that full preliminary medication be employed if one wishes to secure the best effects of gas oxygen. There is a remarkable difference in reaction between 1/6 grain and 1/4 grain of morphine. A dose of 1/6 grain always leaves something to be

desired. Where the physical condition of the patient does not contra-indicate a full dose, 1/4 grain is always to be given.

Hyocine in doses of 1/100 of a grain is a splendid preliminary. Sometime ago, a nurse who had received an order to give a patient 1/200 of Hyocine, deciding that two 1/100 equaled 1/200, gave the patient 1/50. This man came to the operating-room in a condition of twilight sleep, under which a hernia was repaired without the need of any other anæsthetic.

The use of local anæsthesia as an adjuvant to gas oxygen is a matter of personal equation. If well done, it is ideal; if poorly done, in haste, it is much worse than nothing at all. The best possible example of the use of adjuvants is seen in Dr. Criles' Anoci Association. Employing this technique, the surgeon makes a "virtue of necessity." For, upon overreaching the limit of an area blocked by the novocaine and obtaining a reflex response to pain and trauma, he obscures the obvious fact that the patient is not anæsthetized by stating that he is glad to see this reflex, so that he may know the limits of his area of local anæsthesia. Gas oxygen in this technique serves merely to complete the unconsciousness largely attained by the full preliminary medication.

What then are the reasons for the rapid and widespread adoption of gas oxygen? We would enumerate these as follows:

1. The speedy and usually pleasant loss of consciousness.
2. The satisfaction experienced by the surgeon in having the patient fully awake and conscious on the operating-table.
3. The reduced after-sickness.
4. The absence of abnormal blood and urine chemistry.
5. The impression created on the patient by the method.
6. The direct effect of commercial interests.

MUSCULAR RELAXATION UNDER GAS AND OXYGEN

The great and real difficulty in gas and oxygen is the absence of true muscular relaxation. Gas oxygen enthusiasts decry the need of complete relaxation. They assert that the operator should so make his manipulations as to avoid spasm and trauma. The result is that the occasional operator, the man who needs complete relaxation more than anyone else, listens to this plea, narrows his field of operation and limits himself to the simplest type of operation and limits himself to the simplest type of operative interference. He cannot do gall bladder and stomach surgery because he never has a chance to expose these regions and to keep them quietly exposed. Not infrequently, a patient appears to be completely relaxed under gas and oxygen. The writer feels, however, that the relaxation seen under these conditions is not a true muscular relaxation, but merely an absence of rigidity. Muscle tone still obtains. The con-

dition is analogous to that seen in the paralyzed and well extremities of a case of thrombosis of the internal capsule. The paralyzed side representing ether relaxation, the normal side at rest, representing gas and oxygen relaxation.

HEMORRHAGE

During the days that the writer employed gas and oxygen anæsthesia for every case without selection, he frequently found the objection raised that the bleeding was increased. He recalls one man in particular who would never yield on this point. The objection was put down at the time as an unwarranted prejudice and discounted as such. That this objection was correct, however, has often been emphasized by the fact that increased oozing is one of the accepted phenomena of gas oxygen anæsthesia. This was recently brought home by the attitude of a visiting surgeon of one of the largest city hospitals, who while operating upon a patient who bled profusely swore under his breath at the gas oxygen which he thought was being administered, unaware at the time that the patient was receiving only ether. Enthusiasm for gas oxygen has been carried to such a point that we have been advised to disregard the color sign, to ignore cyanosis. A well-known gas oxygen anæsthetist employs a preliminary saturation test with nitrous oxide in very ill patients to determine whether or not they are capable of living through the contemplated gas oxygen anæsthesia and operation.

It is contended by some that a certain percentage of patients do not receive the full effects of nitrous oxide unless saturation is complete. Such a patient is therefore to be given pure NO until livid, with pupils dilated and respiration all but suppressed. Oxygen is then to be insufflated whereupon complete relaxation is assured. We strongly suspect that relaxation so obtained is the result of complete exhaustion instead of the benevolent effect of NO as a relaxant and because of this we do not hesitate to condemn such a procedure. If relaxation can only be had with G&O by such treatment we much prefer to recommend and to use ether.

LOCATION OF OPERATIVE FIELD

In choosing gas oxygen as an anæsthetic, one of the most important things to consider is the anatomical location of the field of operation.

Is the operation to be performed on the head or neck, thorax, abdomen, pelvis, kidney region, perineum or upon one of the extremities?

Gas and oxygen has often been used for mastoids, goitres, glands of the neck, trephining and occasionally for plastic operations on the face. In these regions, however, it is practically impossible to preserve complete asepsis, and to avoid increased hemorrhage. It is difficult to maintain the mechanical control of the inhaler

and the patient's air-way. Asepsis, control or both are usually sacrificed. Where this sacrifice is made without an urgent reason, the choice of gas and oxygen is a bad one. To give gas oxygen for head and neck operations for mere sentimental or æsthetic reasons is entirely unjustifiable.

Gas and oxygen anæsthesia is well suited for operations upon the thorax. Here relaxation is not essential. Asepsis is not interfered with and the control is good. It is particularly to be recommended in acute pneumonic processes and in advanced tuberculosis. The work of Rovsing & Mikuelicz (Mikuelicz Report of 1898—Rovsing p. 85) on Post Operative Pneumonia, as well as that of Whipple has cast considerable doubt upon the existence of so-called ether pneumonia, so that in our use of gas and oxygen for acute pulmonary processes, our object is chiefly to retain or to return the reflexes promptly. To control and direct the patient's cough is especially desirable in operations for empyema.

In operations of the upper abdomen, gas oxygen is decidedly unsatisfactory. In fact, it is here that it has so frequently met its Waterloo. Complete anæsthesia and complete relaxation must obtain in this region if the surgeon is to do his best work. In the lower abdomen, on the other hand, it is often quite possible to hold a patient for an appendectomy done through a small incision. In this case, it is interesting to watch the relative sensitiveness of the various layers traversed. The skin is sensitive and the patient may wince or breathe deeply and rapidly upon the initial incision. The fat, the aponeurosis and the muscle are of low grade irritability and may mislead one into believing that the patient has become deeply anæsthetized. As the parietal peritoneum is cut, however, the anæsthetist is quickly disillusioned. He will be fortunate at this point if the patient does not strain his bowels into the incision or squirm on the table. Intestinal work, involving the visceral peritoneum is practically painless and the patient will slumber through this period quietly enough. Examination of the pelvis or upper abdomen usually results in spasm or rigidity which passes off when the irritation is removed. The patient is then quiet again until the peritoneum is caught hold of for closure when the phenomena above mentioned are repeated.

Gastrostomies and colostomies may be done under gas and oxygen if the surgeon is a man who can work in the presence of a little rigidity.

Operations performed in the pelvis of multipara may be done with a fair degree of success, but failure will attend an attempt to operate upon the pelvic organs of a vigorous, muscular female or male subject.

Nephrotomies, nephropexies, nephrectomies and operations for nephrolithiasis can be handled

quite well under gas and oxygen provided the anæsthetic is started with the patient lying on his side and suitably restrained.

Gas oxygen is indicated in prostalectomies, lithropexies, urethrotomies and other operations upon the genito-urinary tract of patients having a decreased elimination. Cases of circumcision are not easy to control.

Curretages in multipara, amputation of the cervix or vaginal hysterectomy may be done in suitable cases. Perrineorrhaphies, however, are more difficult. Many hysterical nullipara will fail to be subdued by gas and oxygen and will require a straightforward ether anæsthesia.

It is practically impossible to anæsthetize patients with gas and oxygen who are to be operated upon for hemorrhoids, ischio rectal abscess or fistula, if this procedure is to be preceded by complete anal dilatation.

Infections of the hands and feet should be relieved under gas and oxygen, but it will be found that patients who are suffering operation upon the soles of the feet, such as for a broken needle, etc., are very difficult to control.

Where dislocations are to be reduced and fractures corrected and immobilized, ether is usually required and should be freely used.

GAS AND OXYGEN IN THE SPECIALTIES

This form of anæsthesia is not practical in eye work.

Surgery of the ear, such as mastoid operations, sinus explorations and operations upon the semi-circular canal have been done under gas and oxygen with considerable difficulty, imperfect asepsis, hemorrhage, and the risk which comes from improper illumination.

Brain surgery is so dependent upon variations in blood pressure and oozing, that gas oxygen should not be used.

Gas oxygen is the routine in some clinics where goitre surgery is done. Unless the method of Anoci Association is employed, this is attended with great difficulty, increased hemorrhage and breaches of asepsis.

Gas oxygen is contra-indicated in abdominal surgery.

Genito urinary surgery is the best field for gas and oxygen.

Gas oxygen is useful in selected genecological cases and is valuable as an analgesic in obstetrics.

Orthopedic surgery which requires relaxation cannot be satisfactorily accomplished under gas and oxygen.

The dental specialty, one of the first to make use of gas oxygen, will probably continue to employ this anæsthetic for all short and uncomplicated operations.

SAFETY

One of the chief arguments in favor of the use of gas oxygen was safety. The mortality was placed at about one in 100,000 anæsthesias. That this view is entirely fallacious may be seen

in the collective reports of more than 91 gas oxygen deaths published by Dr. J. F. Baldwin (Medical Record, July 29, 1916). It is fair to conclude that even a greater number of unreported deaths have occurred from this form of anæsthesia. The most disquieting element in the entire situation is the extreme suddenness with which these deaths occur. There are practically no characteristic premonitory signs. The heart suddenly ceases to beat and all efforts at resuscitation fail. The cause of death is not understood.

INDICATIONS FOR GAS AND OXYGEN

1. Acute pulmonary diseases in patients over eight years of age.
2. Glycæmia with acetone and diacetic acid.
3. In acute nephritis or where there is a red test of less than 20 per cent the 1st hour.
(Sulpho-phenoptalein normal 40—60 1st hour)
(Sulpho-phenoptalein normal 20—30 2nd hour)
4. Short operations where muscular relaxation is a secondary consideration.
5. As an analgesic in obstetrics.

CONTRA-INDICATIONS

- Children under 8-10.
- Upper abdominal or head and neck surgery. Wherever muscular relaxation is essential. Where morphine cannot be tolerated or has been omitted.
- In heart disease.
- Where the surgeon cannot brook slight movement.
- Smokers—especially women.

REASONS FOR GRADUAL DISCARD OF GAS AND OXYGEN AS A ROUTINE ANÆSTHETIC

1. Danger.
2. Irregularity of action.
3. Impossibility of obtaining true relaxation.
4. Failure to abolish and hold deep reflexes.
5. Immunity of certain individuals to its effects.
6. Difficulty of managing intermittent flow and mechanical troubles because of complexity of constant flow.
7. Employment of lay anæsthetists who are incapable of passing the theory of their work to others and who are incapable of selecting and rejecting cases.
8. The necessity of adjuvants.
9. The inability of constant flow methods to pass from gas and oxygen to straight ether and back again without disturbing the field of operation.
10. The failure to select cases carefully.
11. Prohibitive expense.

THE VIA MEDIA

Gas and oxygen for induction.
Gas and oxygen for recovery in long cases.
The free use of ether in all G. & O. cases wherever the patient proves resistant.

CONCLUSION

In the light of the foregoing, it may be assumed that gas oxygen anaesthesia has not given satisfaction as a routine anaesthetic. In the localities where it has been most freely used, it has passed its peak and has in many instances actually been thrown into the discard. It has a very definite and valuable place, however, in selected cases of renal insufficiency, glycaemia, and acute pulmonary lesions. Elsewhere it will find a useful sphere as an adjuvant to ether during the stages of induction, maintenance or recovery. Gas oxygen, because of the difficulty of its administration, the incomplete anaesthesia produced and the real danger incidental to its use, has given away to the safest of all anaesthetics, ether.

A short time ago, believing that we had found in gas oxygen anaesthesia, the safest, most agreeable and effective anaesthetic, we grudgingly tolerated ether. Today, realizing the danger, the difficulty of administration and the unreliability of gas oxygen, we hesitate to use it alone except in selected cases and as an adjuvant to ether.

LEPTOSPIRAS, PATHOGENIC AND NON-PATHOGENIC.*

TOGETHER WITH SOME OBSERVATIONS ON THE SPIROCHAETAL FLORA OF STAGNANT FRESH AND SALT WATER AND THE MAMMALIAN STOMACH

By HIDEYO NOGUCHI, M.D.,
NEW YORK CITY.

THE genus *Leptospira*, of which *Leptospira icterohaemorrhagiae* may be taken as the type, is distinguished from other groups of minute spirochetes by its characteristic morphological and biological features. It is a delicate filament with tapered ends, so closely and regularly coiled as to resemble a rope. It is actively motile and shows a tendency to bend one or both ends, forming a C, S, 3, or J as it rotates in a fluid medium; in penetrating a semisolid medium its movements are serpentine, swiftly alternating forward, to the side, and backward, the body being flexible at any point and to any angle. No flagellum has been seen under the darkfield microscope, and preparations stained for flagella have so far given no satisfactory results. Preparations showing a single terminal flagellum at one or both ends appear to me unconvincing. In preparations stained by Miss Tilden the organisms gave the appearance of numerous peritrichal flagella of several microns in length along the entire length, and it is not improbable, in view of its characteristic movements, that the organism is provided with some flagella. Certain authors claim that there is a minute spherical

body attached to one or both ends by means of an invisible thread, but I am unable to find any such structure. The *leptospira* resists the action of 10 per cent saponin. These characteristics are sufficient, I believe, to enable one to distinguish a *leptospira* from the multitude of minute forms of *Treponemata* and other spirochetes.

Recognition of the existence of a new type of spirochete dates back to the time when a comparative study of the causative agent of infectious jaundice and of other spirochetes was undertaken by the writer (1918), and the creation of the new genus *Leptospira* for this rather important member of the family of pathogenic spirochetes seems to have been well justified, since at least two more pathogenic and several nonpathogenic varieties have now been added to this group. The pathogenic varieties at present known are *Leptospira icterohaemorrhagiae*, from infectious jaundice, *Leptospira hebdomadis*, from seven-day fever, a non-fatal disease present in Japan, and *Leptospira icteroides*, from yellow fever. Morphologically the three are difficult to differentiate, except that *Leptospira icteroides* is somewhat smaller than the other two. All three produce fever, hemorrhages, jaundice, and nephritis, individual symptoms differing in degree. Jaundice and nephritis are usually mild and are often absent in *Leptospira hebdomadis* infection; jaundice, nephritis, and fatty degeneration are more pronounced in the *icteroides* infection, while hemorrhage is predominant in the *icterohaemorrhagiae* infection. There are, however, border-line pictures of experimental infections such as are difficult to distinguish from one another, just as there are border-line cases of seven-day fever, infectious jaundice, and yellow fever. Serological differentiation of seven-day fever and infectious jaundice on the one hand and of infectious jaundice and yellow fever on the other is possible by the Pfeiffer reaction, protection experiments, and to a certain extent by agglutination and complement fixation.

A very important contribution to our knowledge of infectious or epidemic types of jaundice has just been made by Wadsworth, Langworthy, Gilbert, Morris and Coleman.*

The modes of transmission are somewhat different in the three forms of infection. The *hebdomadis* has been traced to field mice (*Microtus montebelli*) and the *icterohaemorrhagiae* to wild rats, both organisms being apparently harmless parasites in the kidneys of these animals and probably scattered by means of the urine. The infection of man is believed to occur through exposure of the skin to the contaminated water of sewers and cesspools. There are some authors, however, who do not exclude possible transmis-

* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 19, 1922.

* Wadsworth, A., Langworthy, V., Stewart, C., Moore, A., and Coleman, M. B.: Infectious Jaundice Occurring in New York State. *J. A. M. A.*, lxxviii, 1922, p. 1120.

sion by infected insects (mosquitos, horse flies, etc.), and experimental evidence has been adduced to show that these insects can transmit the infection, mechanically at least, soon after being fed on infected animals. In the case of yellow fever *Stegomyia fasciata* is the usual vector.

During the past few years a number of spirochetes resembling the leptospiras more or less in morphology have been described by European investigators. Hoffmann, in Germany, found in the dental deposits of normal individuals a small organism, which he designated *Leptospira dentium*, and which seems to be rather widespread among the inhabitants of Bonn (40 per cent). Uhlenhuth and Zuelzer demonstrated in the tap water of Berlin a spirochete morphologically indistinguishable from *Spirochaeta icterogenes* (a synonym for *L. icterohaemorrhagiae*) and gave it the name of *Spirochaeta pseudo-icterogenes*, since it was not pathogenic. Immunological differentiation of the *pseudo-icterogenes* from the *icterogenes* was not very striking. Hoffmann calls this organism *Leptospira aquatilis*. In this country, Wolbach and Binger described a similar organism, *Spirochaeta biflexa*, in the water of a stagnant pond near Boston.

Last summer it occurred to me that a study of water from various localities in a search for leptospiras might prove of interest. Samples of water from more or less stagnant ponds, swamps, and ditches were collected* in Woods Hole, Mass.; Mill Pond, Long Island; Newark Bay and Laurel Hill, N. J., and from Shandaken, Hunter, and several other localities in the Catskill Mountains. Darkfield examination revealed the presence, usually in small numbers, of leptospira in all of the samples, although in some instances the number was so small that repeated examinations were necessary in order to find one organism. Both fresh and salt water contained organisms indistinguishable from *Leptospira icterohaemorrhagiae*; occasionally very short and minute (0.2 x 3 to 4 microns) and very heavy and long specimens (14 to 15 microns in length, maximum width 0.4 microns) were encountered. The spirals of the latter type were so tightly set together that the organisms appeared like a series of flat disks held in a row. These extremely small and large varieties are perhaps two different species, both differing from the *icterohaemorrhagiae* type. In addition to these varieties, leptospira-like forms without any perceptible elementary spirals, apparently smooth-bodied organisms (?) were observed; whether or not they were motile could not be determined. The movements of all the leptospiras found in water were rather sluggish. We have obtained growth of

the water leptospiras in impure culture on our regular leptospira medium, though with considerable difficulty. Inoculations of the leptospira water samples into guinea pigs, white rats, and mice have been repeatedly made, but no infection could be induced in the animals. Injections of cultures likewise proved to be harmless. The kidneys and liver of the inoculated rats were removed after three weeks and suspensions of these organs injected into guinea pigs, with the hope that passage through rats might have enhanced the virulence of the organisms, but so far no positive results have been obtained; the water leptospiras appear to be non-pathogenic for guinea pigs as well as rats. Since we have no pure cultures no attempts have yet been made to establish the immunological relationships of the pathogenic and water varieties of leptospira.

In passing, it may be of interest to note the varieties of spirochetes which we encountered in studying the water samples. We found, besides those already described, organisms belonging to the *plicatilis*, the *buccalis* and *refringens*, the *macrodentium*, and the *microdentium* types, as well as several spirilla, including the widespread *Spirillum undulans*. All were obtained by Miss Tilden in impure culture on the leptospira medium (at room temperature).

Although unsuccessful in finding a leptospira in the human mouth, I detected a minute leptospira in the gastric mucosa of the ox. Examination of the contents and mucous membranes of the stomach of dogs, cats, sheep, pigs, rabbits, rats and guinea pigs did not reveal any leptospira. In the stomach of the sheep, ox and cat, Dr. Howard B. Cross, who also assisted in this work, found a number of spirochetes belonging to the *microdentium* type, some of which simulated the leptospira, though distinguishable without difficulty.

Deaths

CARPENTER, ELON N., New York City; New York University, 1884; Member State Society and New York Academy of Medicine. Died September 5, 1922.

HOYER, BURT P., Buffalo; Buffalo Medical College, 1882; Member State Society. Died August 3, 1922.

MEYERSBURG, ADOLPHUS G., Brooklyn, New York University, 1875; Member State Society. Died August 19, 1922.

NEIMAN, LEVI ALLEN, Brooklyn; Baltimore Medical College, 1897; Fellow American Medical Association; Member State Society; Otologist, Lutheran Hospital. Died August 25, 1922.

SEAMAN, RICHARD F. B., Locust Valley; College of Physicians and Surgeons of New York, 1880; Member State Society. Died August 6, 1922.

WELLS, HENRY D., Middleburg; Albany Medical College, 1857; Member State Society. Died February 23, 1922.

* The first leptospira containing samples were those brought from Woods Hole by Miss Tilden and from Shandaken by the writer; the samples of fresh and salt water from the vicinity of New York City were collected by Mr. Klosterman and Mr. Farnan, also of the writer's laboratory.

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STEPHEN SMITH, M.D., LL.D., Sc.D.

Born at Borodino, N. Y., February 19, 1823.
Died at Montour Falls, N. Y., August 26, 1922.

Full of years, full of honors, at the close of a brief respite from a remarkably fruitful life of continuous service, Dr. Stephen Smith, of New York City, came to the end of his earthly journey on August 26, 1922, aged within a few months of 100 years. Over his final resting place should be inscribed the words of our colleague, Dr. Edward H. Parker:

"Life's race well run,
Life's work all done,
Life's victory won,
Now cometh rest."

Still better, for their deeper meaning and their greater scope, the Latin rendition of Parker's lines by our colleague, Dr. William H. Crosby:

"Cursus vitae bene actus,
Opus vitae omne factum,
Laurus vitae acquisita,
Nunc venit quies."

Reverently he was borne to his grave in Skeneateles from his former home in that place by those who respected him and loved him, disciples who thus paid the last tribute of veneration and devotion to the master.

Not for his long life was he honored; not for the mere years—nearly a century—that he bore so easily; not for the surprising fact that his intellect remained unclouded and his memory bright; but for his grasp of the full significance of the conditions of life, his comprehension even in his early medical youth of the problems of existence; and for his intuition and his initiative, for his masterly solutions of difficulties, and the practical measures he suggested for amelioration or complete relief, especially as regards problems involving the limiting of inroads of epidemics or of prevalent diseases, and for the securing of public health.

His attention and best thought were given to the insane wards of the State during a long commissionership; and it was he who conceived, prepared the path for, and drew with his own hand the State Care Act of 1890, under whose provisions the insane were taken out of almshouses and jails and lock-ups, to be placed in proper custodial care, and under which, moreover, asylums and keepers were abolished, and in their place were substituted hospitals, nurses and trained attendants, in New York State.

The importance to humanity and to psychiatry of this forward step for the insane was prime; it cannot be too highly appreciated or commended; it was supreme.

His services to municipal health and to national health organization were duly set forth to the citizens of this State and this country in November, 1921, when as the founder and first president of the American Public Health Association he was the central figure and principal orator at the semi-centennial meeting of that organization in New York City.

Had this modest, gentle, sweet spirit escaped from its earthly tabernacle in France, he would have lain in state in the Panthéon in Paris, and would have been borne thence to rest in Père la Chaise Cemetery, to lie with the greatest of Gallic storied dead.

Had England compassed the life and witnessed the death of this indomitable, courageous executive, this beloved physician who was so deeply touched with the human need, his mortal remains would have been interred in Westminster Abbey.

It would trivialize Stephen Smith to recount the many services he rendered our profession and the public as surgeon, editor, medical practitioner, publicist, official in the National Government, State Commissioner, and special envoy of the United States to foreign capitals.

Honors were heaped upon him; appreciations and memberships in learned societies came to him; and to him was presented the gold medal of the American Public Health Association; colleges conferred degrees, Columbia University investing him with its highest honor, that of *Scientiæ Doctor* in June, 1921, when President Nicholas Murray Butler characterized Dr. Smith thus: "Winner of distinction in a hundred fields of professional endeavor and public service; walking with steadiness, with calm courage and with powers unimpaired down the long highway of a hundred years, the most interesting figure in American medicine and in American public life today."

Like a great oak in the forest, he endured storms of attack and opposition, serene and calm, laboring incessantly, rugged and hale, undaunted by the icy blasts of winter or the scorching torridity of summer, while about him drooped and died, dismayed and defeated, less sturdy timber—the ordinary being whom this superman out-thought, out-worked, out-stripped and out-lived.

In his life he fulfilled the demand made in the lines of J. G. Holland:

"God give us men! A time like this demands
Strong minds, great hearts, pure faith and ready hands;
Men whom the lust of office cannot kill;
Men whom the spoils of office cannot buy;
Men who possess opinions, men who cannot lie;
Men who can stand before the demagogue
And damn his treacherous flatteries without winking;
True men, sun-crowned, who live above the fog
In public duty and in private thinking."

Dr. Smith's whole existence, from his early youth in which he felt the sting of poverty and gained his early education from a brother's college text-books, up to the summit of his brilliant success, is a rebuke to the sordid, commercial spirit of the age, an inspiration to the physician whose mind is beset with dismay at the vastness and intricacy of medicine, an encouragement to the one whom "res angusta domi" curbs and frets, a high mark set for the focus of the aspiring eye of the ambitious and earnest altruist, and a perfect exemplar of the life of service.

"Now cometh rest." A. W. F.

THE GORGAS MEMORIAL INSTITUTE.

The Institute proposed as a Memorial to the late General William Crawford Gorgas, whom the Hon. John Basset Moore calls the Redeemer of the Tropics, is most timely and fortunate in its inspiration. The name of Gorgas must ever be associated with the world work he did in the tropics as a master of preventive medicine. And now it is proposed to continue his life endeavor by the establishment of a Foundation and Institute for the study of prevention and the extermination of Tropical disease. Dr. Belisario Porras, President of the Panama Republic, has generously provided through his government a building and equipment at Panama where Specialists and those properly equipped may study the problems of Tropical Medicine.

The Founders of this work have planned wisely as they are also establishing in the South at the University of Alabama a school where the study of sanitation, health nursing and allied courses may be co-ordinated and thus used as an extension of the benefits of the Panama institution. It is only a matter of time when the health and commercial problems of the southern Republics must be ours to solve. They are knocking at our doors daily in the strict quarantine we must observe to keep the country free from yellow fever, bubonic plague, and a myriad of other diseases which travel as fast as people move, and they are no respectors of persons.

The economic value of a healthy tropical community cannot even be conceived. We know that Gorgas saved the United States Government about thirty-nine million dollars, and over seventy-one thousand lives. He had been honored by all governments and his work was a World Work, just as his Memorial Institute must be a World Institute.

The untold wealth of the tropics must be brought to light. As the French found in building the Panama Canal, the problems of machinery were comparatively easy as compared with the conservation of human life. So the task of placing our sister Republics on a paying basis with a foreign credit, must be through the very solution of these health problems. It is a Medical problem primarily.

Gorgas was a product of the State of Alabama. His medical education was secured at Bellevue, now a part of New York University, hence the State of New York can be proud of its son by adoption. The Gorgas Memorial must be a great Institution. Its scope is world wide, and the gathering momentum of interest and support, as the people of the United States, particularly in the South, realize what it may mean in the solution of its own problems will doubtless exceed the dreams of its Founders. We wish it God-speed in the raising of the six million dollar endowment fund, which will be necessary to prop-

erly carry on the work of the institution, and more we wish to assure the Founders of the Gorgas Memorial that the Physicians of the State of New York are heartily in sympathy with any endeavor which shall mean the alleviation of suffering and the saving of human life.

The seriousness of the motive of the Gorgas Memorial organization is attested by the men who are acting as a Board of Directors. Rear Admiral Braisted is President of the Board while most of the Southern States are represented by their State Health Officers. We understand the Board have chosen Dr. Richard P. Strong Director of the Harvard University School of Tropical Medicine as the Scientific Director of the Institute.

The medical fraternity will be able to create a public interest and sympathy for this work even though they personally cannot contribute as they would like.

John Basset Moore has well defined the great scope of the work in the *Review of Reviews* when he says: "Conceived in the faith that the work to which Gorgas devoted his life is not for a day, but for all time, the Gorgas Memorial Institute of Tropical and Preventive Medicine has accepted as a sacred trust the task of following the trail which he blazoned with this motto 'Health to all people in all lands.'"

O. S. W.

PUBLIC HEALTH SERVICE.

Dr. Nicoll, of the New York State Department of Health, in his paper before the Section on Preventive and Industrial Medicine and Public Health, at the last session of the American Medical Association, states that public health service does not offer sufficient attraction to many of the best type of technically trained men, whether they be physicians, sanitary engineers or statisticians, giving as his reasons:

Lack of knowledge on the part of many graduates of the professional schools as to the character of the work. It would seem desirable to introduce somewhere in the curriculum of medical and allied professional schools, including schools of nursing, a course of lectures, delivered by an experienced and successful health official, which would serve to impart exact information as to the opportunities offered by public health service.

It is stated that as a general rule, salaried public service of an administrative and technical nature is not adequately compensated. While it is not expected that the salaries of health officials will compare with the income of trained professional men in private practice, still the salaries paid should represent a reasonable return on the capital invested in money and in time devoted to preparation, and should afford a decent living with something saved, to those who have no other source of income.

Quite as important if not more so than the foregoing, is the uncertainty of tenure of office. Many qualified men, especially those with some private means, would, notwithstanding the meagre financial returns, enter into public health service, on account of their liking for it, were it not for the fact that they have little or no assurance that even if they perform their duties satisfactorily and obtain results, they may not be removed from office because of political or personal reasons, and with no opportunity to protest.

City and county health officers should have a life tenure of office, unless removed for a just cause; salaries granted should be more liberal than at present; provision should be made for a pension after retirement.

General education of the public regarding the meaning and importance of efficient health administration would undoubtedly lead to adequately paid, well qualified, whole-time health officers, with a secure tenure of office. J. N. V. V.

A CONTINUOUS PERFORMANCE

The current history of successful swindling must delight the shade of Phineas T. Barnum whose dictum "The public loves to be humbugged" seems to grow in luminous truth with the years.

The electorate continues to choose vulnerable representatives to build their legal fences, and with unflinching seasonal regularity hysterically laments their failures.

Fraudulent advertisement of healing measures is, of course, from the physician's point of view, a most serious offense, and laws have been passed in almost every State to protect the public from its seductions. Subterranean forces have, however, so carefully drawn the teeth of these guardians that the quack escapes unharmed. A little joker "knowingly" is the sesame generally employed and even our government postal department seems to find it impossible to stop the so-called extension courses of the so-called "American University" which under various names from a little suite in an office building in Chicago, with never a resident student so far as we can learn, has, for many years, conducted a profitable advertising business through the mails wherever English is spoken.

Correspondence courses in Mechano-therapy, Suggestive-therapy, Spondylo-therapy, Chiropractic, Osteopathy, Bust development, get-the-coin-therapy, with "handsome diploma" are given for a scale of fees sliding from two hundred dollars down to whatever the victim can be induced to give.

Thirteen years ago *London Truth* said: "It passes my understanding how wealthy newspaper proprietors . . . can condescend to

take money for foisting this sort of bunkum on their readers, but as long as they do so, cheap postage to America will certainly put money into some pockets," and in describing the "college" calls it "a concern which proposes to give postal tuition in quackery to British fools." The *American Medical Association Journal* says: "A description which can only be improved by the substitution of "English-speaking" for British.

When we saw the advertisement from the *Police Gazette* of July 1, 1922, that "any one" could be taught, by correspondence lessons from the "American University" to become "a Doctor," to earn "from \$3,000 to \$5,000 yearly," and to become "a member of an honorable and respected profession," we were shocked, both because we had not seen the seductive pink sheet very often since our early country barber shop days, and because we had believed that such advertising violated our postal laws and had been suppressed. We are now convinced that it will go on as long as there are minute men, and one is born every minute, to respond to its call.

We shall not succeed in our public health work until we shall have first educated the public to understand that a strong medical practice act is of much greater importance to the public than to the medical profession and that this legislation must be national in its scope.

N. B. V. E.

PHYSICIAN'S AFFIDAVIT OF PATIENT'S MENTAL CONDITION BASIS OF SUIT.

Counsel of the Society was recently engaged in defending a member under the Group Insurance Plan of the Society who had been employed by a woman's husband to examine the wife as to her mental condition.

He made an affidavit in a court proceeding for the appointment of a committee to take care of her personal property, expressing the opinion that she was mentally unsound.

In a jury trial on this issue the alleged incompetent was found sane. She then sued the physician, claiming that the affidavit that he had made was a violation of the confidential position which he held to her and was contrary to the law forbidding information received in the treatment of a patient from being divulged by him.

Counsel for the Society contended that the making of the affidavit in a proceeding of this character was not a violation of the privilege and was not actionable and that that complaint against the physician should be dismissed.

The Supreme Court in New York County granted the motion and stated:

"No privilege existed at common law to prevent a physician from testifying as to confidential communications (*People v. Austin*, 199 N. Y., 446, at p. 451), and *in re Benson* (16 N. Y.

Supp., 111) it is held that the statutory prohibition does not apply to an inquisition in lunacy. It is true that the language of the opinion may be construed as dicta, but no case to the contrary has been brought to the court's attention."

If the ruling had been contrary, no physician could make an examination of a patient's mental condition and make affidavit thereto without subjecting himself to probable liability therefor, and it would be practically impossible to submit expert testimony as to the person's mental condition without subjecting the physician testifying to probable suit for damages.

Hazards of this kind are covered by the Group Insurance Policy of the Society and the Counsel's effort is directed in the defense of claims to the establishing of legal principles that make the practice of medicine safer for the physician as well as for the community.

G. W. W.

LEGISLATION.

(1) The Legislative Bureau is continuing its activities during the summer months, gathering legislative information from other States, etc.

(2) A bill has been drafted by the State Education Department prohibiting the use of a degree, unless duly authorized. This bill merits the earnest and undivided support of each individual member of the medical profession.

(3) County Legislative Chairmen should endeavor to ascertain the attitude of the legislators of the past session on such a bill, and have a frank talk with them relative to their attitude toward the medical profession in general; also welcome any suggestions, criticisms, etc., which they may care to make in regard to medical legislation.

(4) *Now* is the time to act. Do not put it off until the fall. Work *must* be continued during the summer months, in order that a closer relationship may be established.

(5) Legislative Chairmen must be "up and doing" building the fences and preparing the ground beneath the surface for a busy session next winter. (A case of diphtheria in Syracuse, treated by chiropractors, in which the patient died, presents the urgent need for just and right legislation to protect the people's interests, as well as to protect the general health of the inhabitants of this great State.)

(6) County Legislative Chairmen should prepare a campaign of medical education in their own communities. Lay members of the community who are kept well informed by physicians will not hasten to have their "spines adjusted," etc., especially if they are made to realize that by so doing they are risking their lives, where no attempt has been made to establish a scientific diagnosis.

(7) The Legislative Bureau will welcome any information, suggestions or criticisms in regard to legislation from the County Legislative Chairmen or the profession in general.

(8) County Medical Societies should report at once to the Legislative Bureau as to any changes in the personnel of their officers, legislative chairmen, etc.

J. N. V. V.

ANNUAL REGISTRATION.

As in the past legislature this question will inevitably recur at the next session and the Society must meet the question by individual and by Society vote.

Several states, including California, Delaware, Louisiana, etc., already have it and with satisfaction does it seem to function, especially as it has put the burden of checking up illegal practitioners on the State functionaries, and thus lessening the work of the County Society, which at the best, is usually poorly performed.

At the present time, in New York State, there can be no check on those who started practice before 1892, and even since then, there are a number of men practising under the diplomas of men deceased, or who have moved away or entered business life—and in some instances have sold their diplomas and even certificates of registration to unqualified men.

Should such a requirement be put in force and funds provided either by State appropriation (which would smack of class legislation) or by levy on the State Society funds, or on the individual by county levy for inspection and detection of illegalities, there would be no opportunity for individuals to practice for long under false or assumed names.

It should be made a requirement also that lack of registration for a certain number of years should require extra proof as to the reasons for not complying with such a law, as would be the case of an abortionist who might absent himself outside the pale of the State and its law until the crime had been forgotten, and who then might attempt to register in a different county.

The diploma from a college no more entitles the holder to practice in a State—save in very few in our country. Practically every State has now added one or more additional safeguards of some sort or other along police lines. In New York State re-registration has been fought by the profession because it has *seemed* an added burden of useless effort, but this last session's attitude has been shown to each individual society member and it must have penetrated by now that a legislature does not desire to generate the laws which bring on a controversy between cults or sects.

The medical profession must generate the thought and furnish the power and force to obtain such laws as will provide protection for the public at large against disease and against those

who are unqualified and unauthorized to assume the title of doctor of medicine, or to perform any part of the functions of a physician.

We were not backward last winter in trying to uphold the rights of the people against quackery from without the profession!

It would seem but wise to be introspective and now begin to eradicate such things as smack of quackery within the profession. Thus will we answer some of our severest critics.

Shall a society as strong as is ours be laughed at by a handful of men who realize that under the present laws and their machinery they are free to practice, especially—and more shame upon us—when the individual County Societies or members within their folds positively know of illegal practitioners not far from their own homes and fail to begin proper action.

J. N. V. V.

Correspondence

Editor of the NEW YORK STATE JOURNAL OF MEDICINE:
PAY CLINICS

DEAR DOCTOR:

In an article which recently appeared in the *Woman's Home Companion*, the head of one of these clinics classifies physicians into a half a dozen varieties, including throat, stomach and lung specialists, *osteopaths*, dentists and *then the family doctor*. Is this an appeal for the osteopaths to send their patients to the clinic? and in the next list will the chiropractors be included and placed in front of the family physician? Then why should not an osteopath and a chiropractor be included in the group? Is not the inference, that since the article proves that people no longer have family physicians, there is no reason why the public should not come directly to the clinic?

Such articles appear with the photograph of the writer, and with the announcement that he is a member of the faculty of the medical department of a university. This article says, "Such a clinic takes care of all classes of patients . . . whether they require group attention, or the attention of the individual physician, as in private practise." It says: "Group medicine . . . must be less expensive both as to money and time, than the present system of medical practice, and should be altogether more efficient." In spite of the fact that this magazine goes into practically every family, this is not advertising or soliciting patients, because it is done by a "Group."

In regard to the efficiency which these group clinics claim for themselves, possibly over-efficiency is more dangerous than ordinary efficiency. Many more unnecessary operations might result after unwarranted microscopic, cystoscopic, laryngoscopic procedures done by specialists looking for trouble, than would be found necessary in the practice of the all around common sense family physician, who is placed at the bottom of the list by the head of the clinic. Some one has said, "Let my family physician decide, because he knows how much my constitution will stand without breaking."

Group clinics claim to be patterned after the Mayos, thereby hoping to receive some reflected glory. The Mayos must be amused to read of the great number of clinics just like their's.

Now if we were writing for a lay magazine, in our first article, we would go on to state how efficient and inexpensive we are. Then in our next article, we

would show what a wonderful clinic the Mayos have, and explain that we were just like the Mayos.

Would it not be well for all of us to withdraw from our hospital associations, and start pay clinics? This scheme of ours would make unethical things ethical. This plan would not be unfair to our competitors, because it is evident that we are a superior bunch of specialists, or we would not have such haughty and exalted aspirations. This plan would not injure the family physician, because not having brains enough to know what is the matter with his patient, or nerve enough to guess, he would not be able to see through our scheme. And if any of these good-for-nothing family physicians are conceited enough to believe that they can tell whether the trouble is in the tonsil or the appendix, we can at least offer to protect their patients from their inefficiency and costliness, by letting the patients know that we are great specialists, and that they can come directly to us.

We are starting late, but all we have to do is to think of the Mayos and aim high.

W. L. WALLACE.

Syracuse, N. Y.

Editor, NEW YORK STATE JOURNAL OF MEDICINE:
DEAR DOCTOR:

The editorial, signed by Dr. Booth, published in the NEW YORK STATE JOURNAL OF MEDICINE for August, indeed points to an opportunity for the Medical Profession of the State. If every County Medical Society in the State would adopt today the resolution adopted by the Westchester County Society sixty-nine years ago: "That hereafter the prominent object of this society shall be the improvement of its members in medical science"; nothing but good could accrue to the profession. In every county in the State cases and groups of cases are seen every day that will amply repay careful study, report, and intelligent debate by the physician who sees them and his fellow practitioners. The County Society is the logical place for the development of the powers of observation, deduction, and reasoning by which the members of the profession may become more proficient in medical science.

Rochester, N. Y.

JOHN M. SWAN.

Editor, NEW YORK STATE JOURNAL OF MEDICINE:
DEAR DOCTOR:

At the St. Louis Annual Session of the American Medical Association, the Board of Trustees reported to the House of Delegates that in response to a request received from the directors of the Gorgas Memorial Institute of Tropical and Preventive Medicine for the co-operation of the American Medical Association, the Board had taken action which resulted in the appointment of a committee, representing the American Medical Association, to act on the project. The following were appointed: Dr. George E. de Schweinitz, Philadelphia; Dr. Charles W. Richardson, Washington, D. C., and Dr. Fred B. Lund, Boston.

The House of Delegates unqualifiedly endorsed the Gorgas Memorial as a tribute to a past President of the organization and one of its most distinguished and loved members. At its recent meeting the Executive Committee of the Board of Trustees received the following statement from the committee and directed its publication.

STATEMENT AND APPEAL FOR CO-OPERATION

As a result of the stimulating suggestion of President Porras of Panama, it has been resolved that a fitting memorial shall mark the humanitarian service of the late Major General William C. Gorgas, and the beneficent influence of his life and work on mankind throughout the world. Following the thought of President Porras, it has further been decided that this memorial shall take the form of a scientific institute

for the study of tropical diseases and of preventive medicine.

No better place could have been selected than Panama City, the gateway between the Atlantic and the Pacific, where General Gorgas' well-planned and executed work made possible the building of the Panama Canal.

It is hardly necessary to call the attention of the medical profession to the far-reaching effects of General Gorgas' work on the welfare of the people of the whole world, especially in tropical and semitropical climates, and in all places subject to the inroads of infectious disease.

We of the medical profession remember him as our Surgeon General during the early part of the World War. We remember his prompt recognition of the necessity of bringing into active service large numbers of physicians and surgeons from civilian life. We remember his genial and kindly nature, his high character, and his steadfast effort directed toward the organization and equipment of the Medical Corps of the Army. We remember the patriotic response. We remember him as a great sanitary officer, to whom we wish to pay a lasting tribute.

A central committee has been formed, with Admiral Braisted, retired, ex-President of the American Medical Association, as its president. The American Medical Association has appointed a committee of three to work in accord with the central committee, and through its members this appeal is made to the American medical profession.

The plan is to build at Panama an institute for the study of tropical and infectious diseases, with a hospital, laboratories, departments for research and all other facilities required in an institute of this character, erected and administered according to the most progressive, modern ideals. The Panamanian government, owing to the far-sighted, philanthropic vision of President Porras, has donated the great Santo Tomas Hospital, and also the ground on which it is proposed immediately to construct the buildings as they have been described. Dr. Strong has been appointed the scientific director.

In conjunction with this work in Panama, there will be established in Tuscaloosa, Ala., the Gorgas School of Sanitation for the purpose of training country health workers, sanitary engineers and public health nurses, especially educated to deal with the problems peculiar to the Southern states.

An endowment of six and one-half million dollars will be required to enable the institute to carry on the work according to the plans which have been formed.

The Republic of Panama has demonstrated its sympathetic and practical interest in this enterprise with splendid liberality. The physicians of our country, and especially the members of the American Medical Association, surely will not disregard the memory of a former President, and will seize the opportunity to make in this respect a contribution of which they will be proud.

The campaign for funds is to be international. A large response is expected from North, Central and South America, since the nations of these countries have been the chief beneficiaries of the labors of General Gorgas. It is fitting that his co-workers of the American medical profession should be requested to respond generously to this appeal. It is hoped that every member of the American Medical Association will make as liberal a subscription as possible. Any sum will be gratefully received. Checks should be drawn to the order of the "Gorgas Fund" and should be mailed to the American Medical Association, 535 North Dearborn Street, Chicago.

CHARLES W. RICHARDSON, Washington, D. C.,
F. B. LUND, Boston,
G. E. DE SCHWEINITZ, Philadelphia.

NOTES FROM THE STATE DEPARTMENT POLIOMYELITIS.

Sixty-seven cases of poliomyelitis have been reported to the State Department of Health from August 1st to 30th, inclusive. In 1921, one hundred fifty cases were reported during the month of August. The disease this year appears to have its principal focus in the central part of the State. Nine cases have been reported from Syracuse, seven from Auburn, four from Ithaca and four from Cortland. There seems also to be a secondary focus in St. Lawrence County, four cases having been reported from Ogdensburg and three from Massena during the month. In addition there have been four cases reported from the little village of Franklinville in Cattaraugus County, three from the city of Rome and two from Peekskill. Elsewhere the cases have occurred singly and do not appear to center about any locality. In two instances two boys attending the same summer camp have contracted the disease within a few days of each other. Although the other boys in these camps were kept under observation for two weeks no subsequent cases developed among them.

INSTRUCTION OF NURSES IN MATERNITY HYGIENE.

As part of the program contemplated by the Davenport-Moore Act, adopted last March, the recently organized Division of Maternity, Infancy and Child Hygiene is co-operating with women's organizations in organizing classes for mothers in many localities throughout the State, with a view to giving instruction in maternity hygiene. This instruction will be given by public health nurses, and since very few nurses have had special training in prenatal work the Department has added to the staff of this Division an instructor of nurses and is organizing a free extension course in maternity hygiene for the benefit of the public health nurses. This course will be repeated in various districts in the form of practical lectures and demonstrations. One class has already been started, and by the middle of September at least twelve more will be under way. The object of the course is to present to nurses standardized methods of teaching maternity hygiene to mothers. Special emphasis is placed upon the importance of supervision by a physician from the earliest months of pregnancy throughout the puerperium, upon recognizing danger signals and seeking medical aid, upon the meaning of and necessity for prenatal care, upon preparations for delivery, the importance of breast feeding, the care of the mother and of the baby. Practical demonstrations will be given in the care of the breasts, making layettes and abdominal binders, preparation of the baby tray and bed, simple tests for albuminuria, etc.

PROMOTING CHILD HYGIENE STATIONS.

Another feature of the new program of the Division of Maternity, Infancy and Child Hygiene is the giving of assistance in establishing child hygiene stations and in organizing or extending the work of such stations, particularly in organizing prenatal work. Service of this kind has already been started in Ithaca, Glens Falls, Binghamton and Jamestown, and many requests are on file for September. According to the Department's latest survey of child hygiene stations in New York State, some form of child hygiene work seems to be well organized in Binghamton, Schenectady, Utica, Yonkers, Auburn, Cohoes, Elmira, Fulton, Geneva, Hornell, Hudson, Lackawanna, Amsterdam, Oswego, Poughkeepsie, Rome, Watertown, Batavia, Beacon, Cortland, North Tonawanda, Ogdensburg, Peekskill, Plattsburg, Port Jervis, Tonawanda and Norwich, but very few of these stations are attempting prenatal work. There are other stations where this work could be easily extended, and the Department will gladly consider requests for assistance and advice in developing or expanding the service of child hygiene stations.

DELAY IN MAILING SPECIMENS TO THE STATE LABORATORY.

During July a record was kept at the State Laboratory of each specimen where the information blank showed that there had been a delay between the date of taking the specimen and the date of its receipt at the laboratory. During the month this occurred in the case of 41 Wassermann specimens and 11 diphtheria cultures. The interval between the date of taking the Wassermann specimens and their receipt at the laboratory varied from 4 to 13 days. Postmarks showing the dates of mailing were legible on only 17 of the 41 packages. Comparison of the dates in these 17 cases, however, seemed to indicate that the delay was not in the postal service but that the specimens had been held by physicians from 2 to 12 days before mailing. Of the 11 diphtheria cultures postmarks were legible on 3. Two of these had apparently been held three days before mailing, and the other four days. Obviously the State Laboratory should not be blamed by the physician or the patient for delay of service when the specimens are not promptly mailed. Nor should it be necessary to remind practitioners of the more important factor involved, namely, the danger that specimens held back in this manner may be overgrown by contaminating organisms or otherwise rendered valueless for diagnostic purposes.

PASTEURIZATION EXPERIMENTS AT ENDICOTT.

Representatives of the Division of Laboratories and of Research and of the Division of Sanitation observed the extensive experiments recently carried out at the plant of the Borden Farms Products Company at Endicott, N. Y., the object of which was to determine the effect of subjecting *B. Typhosilis* and *B. Tuberculosis* (human and bovine) to different temperatures for various lengths of time with three different types of standard pasteurizing apparatus. Representatives of the New York City Department of Health, the U. S. Public Health Service, and the Veterinary College of Cornell University were also present. The experiments were carried out very carefully and a great many samples of infected raw and pasteurized milk were collected and sent to the different laboratories represented, for analyses. Preliminary tests were also made at the plant. The results of these analyses, however, are not yet available. The experiments were made primarily to determine more definitely the temperature and holding period required to destroy the pathogenic bacteria used in making the tests.

INVESTIGATION OF DIPHTHERIA CASES.

The State Department of Health is making an inquiry through the sanitary supervisors in all districts with a view to determining the factors responsible for the continued high death-rate from diphtheria. It is hoped that through an analysis of the reports obtained by this investigation some remediable factors may be discovered whose correction will result in a lowered mortality.

DIPHTHERIA IN A COUNTY INSTITUTION.

An outbreak of twelve cases of diphtheria with one death occurred in the Madison County Orphan Home during July. A culture from the first case of this series was reported negative and as a result the cases were considered to be septic sore throat until a case with unusually severe symptoms developed. Cultures from this case were found positive for diphtheria bacilli, as were those from all the others attacked. The outbreak apparently had its origin in a child admitted to the home about two weeks before the onset of the first case. This child came from a community where diphtheria prevailed during the spring and he had been suffering from sore throat just before his admission.

PRUNES

Contributions Invited

Mrs. Van Tuyl was going abroad for the first time and was extremely anxious to avoid seasickness. She consulted several friends and got conflicting reports.

"Be sure and eat a hearty meal before going abroad and you won't have any trouble at all," was the advice bestowed by a veteran ocean voyager.

"Whatever you do, don't eat a thing, and you won't even feel the motion of the boat," assured another. Whereupon Mrs. Van Tuyl was considerably distressed and decided to consult her physician.

She gave him a detailed account of the situation, and the varying advice given by her friends.

"Whatever am I to do, doctor?" she implored.

"It all depends, madam," replied the doctor, "whether you wish to discard from strength or weakness."

To a Débutante

(By an Exhausted Admirer)

I stood for the bridge at midnight
When the clock was striking the hour;
I stood for the bootleg rickies
Of 48 white-mule power;
I stood for the jazz in the mornings,
The nights and the afternoons,
But Nature *won't* stand for it, dearie,
And so I am off to Muldoon's.

Doctor: Now you see what comes of eating green apples when your mother told you not to.

Boy: I didn't eat 'em cos I liked 'em. I ate 'em to find out why she told me not to.

The Ize Have It

In an age in which we specialize—or are lost—the following should be noted:

When business is sick and in need of a remedy, we normalize.

If there are wounded veterans to be cared for, we hospitalize.

When a worthy cause needs to have new life put into it, we revitalize.

If we have goods to sell, we merchandise.

Furthermore—

Government bureaucracies are never broken up. Government is decentralized. Large institutions no longer divide their labors. They are departmentalized. New York is not misgoverned, only Hylanized. And as for our own precious selves, we have given up indulging in periodic moments of soul-searching reflection. We go and get ourselves psycho-analyzed.

Not even the spirits of the departed can escape. No longer do they appear. They materialize.

Truly, the ize seem to have it, here and hereafter.

A Polite Retort

Traffic Cop: "Come on! What's the matter with you?"

Truck Driver: "I'm well, thanks; but me engine's dead."—*Hallmark News*.

Slight Remembrance

Mrs. Stingy: "Dear, the baby has swallowed a penny. What on earth shall I do?"

Mr. Stingy: "Oh, well, let him have it. Next Thursday is his birthday, anyway."—*The Progressive Grocer*.

Hint for Burbank

The real fisherman's paradise is a place where they've crossed the mosquito with the fish, insuring a bite every minute.—*Life*.

Drummers, March

The Sunday school teacher had been telling her class about the benefits of being good. At the end of her discourse, she turned to a bright-eyed little Miss and asked: "Where do good little girls go when they die?"

"To heaven," was the prompt reply.

"And where do the bad girls go?"

"To the depot to see the traveling men come in."

—*Two Bits*.

Progress

North: "Do you think infants are burdened with original sin?"

West: "No, but they're saddled up with considerable war debt."

The Candid Chiropractor

(Found by Eve in a Life Advertisement)

The chiropractor tells you his message in English because he wants you to understand. He doesn't camouflage his ignorance with Latin.

A College Letter

Dear Mary: I got my diploma; I got a *cum laude* degree. I hit my exams for a homer and now am Pete Perkins, A.B. I've learned how to inhale quite nobly; my shoes come from Franks, clothes from Brooks. You really would almost not know me—I'm surely some smooth boy on looks. I've learned how to dance this here toddle; on Latin and Greek I've been fed. I savvy this forensic twaddle—I tell you I'm sure college bred. And now we can go and get married. I've learned all the dope, so to speak. But one thought my pleasure has harried—can we live on just thirteen a week?—*Judge*.

Could Put Up With Himself

"I don't see where we can put that lecturer up for the night."

"Don't worry. He always brings his own bunk."

Will someone please tell Mr. Bryan that the evolutionary war is over?

They were holding a vacation argument. "Yes," he said, "Dr. Sawyer tells me a separate vacation is the best thing for married folks. Here we are, married nearly twenty years, and always together. Think what a change it would be for both of us to get away alone—to see nothing but new scenes, nothing but new faces." "William," she said, "I consent. I'll go off on my vacation by myself and you take with you on yours the six children that I haven't had out of my sight for ten years." William said, "Humph!"

—*Philadelphia Record*.

Never Again

A philanthropic lady visited an asylum not long ago and displayed great interest in the inmates. One old man particularly gained her compassion. "And how long have you been here, my man?" she inquired.

"Twelve years," was the answer.

"Do they treat you well?"

"Yes."

After addressing a few more questions to him the visitor passed on. She noticed a smile broadening on the face of her attendant, and, on asking the cause, heard with consternation that the old man was none other than the medical superintendent. She hurried back to make apologies. How successful she was may be gathered from these words: "I am sorry, doctor, I will never be governed by appearances again."

—*Presbyterian Banner*.

THE AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION

The thirty-second Annual Meeting of the American Electro-therapeutic Association will be held on September 19-22 at the Hotel Pennsylvania, New York City. Physiotherapy clinics and an exhibit of the latest type of apparatus will be included in the program. All legally licensed physicians are welcome. Address the Registrar: Richard Kovacs, M.D., 223 East 68th Street, New York City.

COMMITTEE ON DISPENSARY DEVELOPMENT.

Dr. Alec N. Thomson, who has recently joined the staff of the Committee on Dispensary Development of the United Hospital Fund, was in military service under Colonel William F. Snow and was on duty in this country and abroad in venereal disease control in the army. In the fall of 1919 he became director of the medical activities of the American Social Hygiene Association. The opportunities which this position offered Dr. Thomson, plus his pre-war experience and his administrative work in the army, have familiarized him to an unusual extent with dispensary problems.

In taking up his new work with the Committee on Dispensary Development, Dr. Thomson retains his connection with the American Social Hygiene Association in the capacity of advising member of the department of medical activities.

NEWS ITEMS

Dr. C. S. Barnes and family of Waterloo have been motoring through the Adirondacks for ten days.

Dr. A. J. Frantz, Seneca Falls, has been spending a week at the Glen Springs Sanatorium, Watkins, N. Y.

Dr. George W. Clark, Waterloo, has resumed his practise after an absence of several weeks.

Dr. Robert Knight, the efficient Health Officer of Seneca Falls, is enjoying the beauties of nature at his farm on the shore of the famed Cayuga Lake.

Dr. L. W. Bellows, Waterloo, is on the Democratic ticket for Coroner of Seneca County.

Dr. C. B. Bacon and family have returned from an extended visit in the Eastern part of the State; the trip was made by automobile.

Dr. and Mrs. H. E. Merriam of Ithaca have returned from a month spent in and around Boston, where the Doctor has been taking a post-graduate course at the Peter Bent Brigham Hospital.

Dr. John E. Wattenberg, who has been associated with Mr. Martin B. Tinker in the practice of surgery at Ithaca, has resigned from this position and has located at Cortland, N. Y., where he intends to confine his practice to surgery only. Dr. Wattenberg resigns as President of the Medical Society of Tompkins County, which position he has filled since January 1st last. The Tompkins County men wish him every success in his new location.

Miss Abigail H. Sutphen and Dr. Harvey L. Van Pelt, both of Ithaca, were married July 27th.

Dr. Keith Sears, Superintendent of the Tompkins County Tuberculosis Hospital is spending a couple of weeks in the Adirondacks. Dr. Wilber G. Fish is substituting at the Hospital until the return of Dr. Sears.

Dr. H. S. Bull spent the month of August in Boston at the Rochester General Hospital taking advanced work in Radiography.

Dr. Ledra Heazlit returned last month from two months spent in Europe, especially in Italy, where he visited many of the European hospitals.

Dr. Grant of Cincinnati is reported as having purchased the practise and residence of the late Dr. E. G. Fish of Union Springs.

The American Occupational Therapy Association Annual Meeting will be held at Atlantic City, September 25-29, 1922.

District Branches

FOURTH DISTRICT BRANCH

ANNUAL MEETING, HEALTH CENTER BUILDING,
SCHENECTADY, N. Y.

TUESDAY, SEPTEMBER 26, 1922

MORNING SESSION, 11 A. M.

"President's Address," Edwin MacD. Stanton, M.D., Schenectady.

"The Chiropractic Menace," William L. Wallace, M.D., Syracuse.

"Can Anything Be Done to Control Cancer?" John M. Swan, M.D., Rochester.

AFTERNOON SESSION, 2 P. M.

"The Clinical Importance of Estimating Blood Sugar," Don K. Hutchens, M.D., Cambridge.

"Common Forms of Nervous Diseases." Illustrated by moving pictures. Edward Livingston Hunt, M.D., New York City.

"The Four Eras of Surgery," Robert Tuttle Morris, M.D., New York City.

Luncheon for members and guests will be served at the Medical Arts Building.

SIXTH DISTRICT BRANCH

ANNUAL MEETING, TUESDAY, OCTOBER 3, 1922

ELMIRA, N. Y.

"The Physician's Part in the Control of Communicable Diseases," Bertis R. Wakeman, M.D., Hornell.

Title to be announced, Elliot T. Bush, M.D., Elmira.

"The Rehabilitation of the Foot," Roland O. Meisenbach, M.D., Buffalo.

"Blood Transfusion," Nelson M. Percy, M.D., Chicago, Ill.

SYMPOSIUM—CANCER

"Can Anything Be Done to Prevent Cancer?" John M. Swan, M.D., Rochester.

"Surgical Treatment," Arthur W. Booth, M.D., Elmira.

"Deep X-ray Therapy," Harvey R. Gaylord, M.D., Buffalo.

"Radium Therapy," Douglas A. Quick, M.D., New York City.

"Chemical Treatment of Inoperable Cancer," Charles W. Strobell, New York City.

ANNUAL MEETING OF THE SEVENTH DISTRICT BRANCH.

WEDNESDAY, OCTOBER 4TH, NEWARK, N. Y.

10 A. M.—BUSINESS SESSION

SCIENTIFIC PROGRAM.

"Cancer Control," William I. Dean, M.D., Rochester, N. Y., District Chairman, American Society for the Control of Cancer. Discussion opened by John M. Swan, M.D.

"Intestinal Protozoa," W. S. Thomas, M.D., Clifton Springs, N. Y., Pathologist, Clifton Springs Sanitarium. Discussion opened by George W. O'Grady, M.D., Rochester, N. Y., and Howard I. Davenport, M.D., Auburn, N. Y.

"Some New Features in Differential Diagnoses of the Acute Surgical Abdomen," William H. Coe, M.D., Auburn, N. Y. Discussion opened by Claude C. Lytle, M.D., Geneva, N. Y., and Alfred W. Armstrong, M.D., Canandaigua, N. Y.

"Moving Pictures of Nervous Diseases," Edward Livingston Hunt, M.D., New York City.

LUNCH, AT 1 O'CLOCK.

AFTERNOON SESSION, AT 2 O'CLOCK SHARP.

"The State Medical Society," Arthur W. Booth, M.D., Elmira, N. Y., President Medical Society, State of New York.

"Efficient Medical Organization," Olin West, M.D., Chicago, Ill., Field Secretary, American Medical Association. Discussion opened by Edwin MacD. Stanton, M.D., Schenectady, N. Y., and Arthur W. Booth, M.D., Elmira, N. Y.

"Aspects of Present Tendencies in Medical Legislation," James N. Vander Veer, M.D., Albany, N. Y., Chairman, Legislative Committee of the State Medical Society. Discussion opened by James F. Rooney, M.D., Albany, N. Y., and Mr. George W. Whiteside, New York City.

"Irregular Practitioners," William L. Wallace, M.D., Syracuse, N. Y. Discussion opened by Leslie D. Snow, M.D., Auburn, N. Y.

"Repeated Abortion," James L. Quigley, M.D., Rochester, N. Y. Discussion opened by W. Mortimer Brown, M.D., Rochester, N. Y.

EIGHTH DISTRICT BRANCH OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

THURSDAY, OCTOBER 5, 1922.

11 A. M.

BUSINESS SESSION.

At this session a First Vice-President will be elected for the unexpired portion of the term of the late Edward Torrey, M.D.

Address, Arthur W. Booth, M.D., President, Medical Society of the State of New York.

Address, James N. Vander Veer, M.D., Chairman, Legislative Committee, Medical Society of the State of New York.

Address, George W. Whiteside, Esq., Legal Counsel, Medical Society of the State of New York.

LUNCHEON, 12:30 P. M.

Served by the ladies of St. Paul's M. E. Church at \$1.00 per plate.

SCIENTIFIC SESSION.

2 P. M.

Paper on Neurological Subjects, Edward Livingston Hunt, M.D., Secretary, Medical Society of the State of New York.

"Some Practical Observations on Heliotherapy," John J. Hanavan, M.D., East Aurora, N. Y.

"The Scope of Radium and X-Ray and of the Combination of the two in the Treatment of Malignancy," Harvey R. Gaylord, M.D., Director, State Institute for the Study of Malignant Disease.

"The Diarrhœas; their Recognition and Treatment," Charles G. Stockton, M.D., Emeritus Professor of Medicine, Medical Department, University of Buffalo.

"The Causes of Operative Mortality," George W. Cotter, M.D., Jamestown, N. Y.

"Some Phases of Abdominal Surgery," George W. Crile, M.D., Professor of Surgery, Western Reserve University School of Medicine.

County Societies

MEDICAL SOCIETY OF THE COUNTY OF SULLIVAN

MIDSUMMER MEETING—LIBERTY, N. Y.

WEDNESDAY, AUGUST 16, 1922

Meeting called to order by the Vice-President at 2:45 P. M.

The following were present: Members—Drs. Amberson, Antonowsky, Glatzmayer, Payne, Peters, Rosenberg, Singer and Poindexter. Guests—Drs. Twichell and Linden.

The minutes of the last meeting read and approved as read.

SCIENTIFIC SESSION

Dr. E. Singer and Dr. A. A. Linden presented a case of "Congenital Pulmonary Stenosis with Interventricular Septum Defect Complicated with Pulmonary Tuberculosis." Also X-ray plates of chronic fibroid T.Bc. with mediastinal pleuritis producing dextra-cardia; and pulmonary tuberculosis and annular shadows were demonstrated by them.

Dr. J. B. Amberson, Senior Assistant Physician at Loomis, the sanitarium, exhibited a series of plates of "Sarcoma of the Lungs, Six Months' Duration."

Dr. A. J. Peters presented a paper on "Hilus Tuberculosis."

A discussion of cases and plates followed by Drs. Twichell, Amberson, Rosenberg and Linden.

LIVINGSTON COUNTY MEDICAL SOCIETY

REGULAR MEETING, LETCHWORTH PARK

TUESDAY, AUGUST 15, 1922

Following the business meeting at which time the officers for the coming year were nominated, the members of the Society present reported cases of interest.

Dr. Harold A. Patterson reported two cases—one a case of cerebral hemorrhage occurring in an epileptic, the other a case of serial epileptic seizures treated by spinal puncture and complete drainage of the canal followed by injection into the canal of 5 cc. of spinal fluid in which one-half grain of luminal sodium had been dissolved.

Dr. William T. Shanahan reported a case of cerebral oedema simulating a cerebral hemorrhage.

Dr. Barton F. Andrews reported a case of conjunctivitis in a newborn child due to congenital stenosis of the tear duct and which had resisted all forms of treatment but which cleared in twenty-four hours after the duct was opened.

Dr. Judson M. Burt reported a case of spontaneous passage of gallstone 3 cm. in diameter. Dr. Broughton of Castile discussed the value of X-ray in the diagnosis of gallstones and diseases of the gall bladder.

Dr. Frederick J. Bowen reported several cases of carcinoma and emphasized the importance of early operative treatment and value of post-operative X-ray.

All cases reported were fully discussed by the members present.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

HUGHES' PRACTICE OF MEDICINE, INCLUDING A SECTION ON MENTAL DISEASES, AND ONE ON DISEASES OF THE SKIN. Twelfth Edition, by R. J. E. SCOTT, M.A., B.C.L., M.D., New York. Fellow American Medical Association, New York Academy of Medicine; formerly Attending Physician, Demilt Dispensary and Bellevue Dispensary. With 63 illustrations. P. Blakiston's Son & Co. Philadelphia, Pa. Cloth, \$4.00.

SEXUALREFORM UND SEXUALWISSENSCHAFT. Vorträge gehalten auf der I. Internationalen Tagung für Sexualreform auf sexualwissenschaftlicher Grundlage in Berlin. Herausgegeben von Dr. A. Weil. Berlin im Auftrage des Instituts für Sexualwissenschaft, Berlin. Julius Püttmann, Verlagsbuchhandlung, Stuttgart, 1922.

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. Volume I, General Medicine, edited by George H. Weaver, M.D., Lawson Brown, M.D., Robert B. Preble, A.M., M.D., Bertram W. Sippy, M.D., Ralph C. Brown, B.S., M.D. Series 1922. The Year Book Publishers, Chicago, Ill. Price, \$3.00.

DISEASES OF THE SKIN. By HENRY H. HAZEN, A.B., M.D., Professor Dermatology, Medical Department, Georgetown University; Sometime Assistant in Dermatology in the Johns Hopkins University; Member of the American Dermatological Association. Second Edition. 241 illustrations, including two color plates. C. V. Mosby Company, St. Louis, 1922. Price, \$7.50.

PRINCIPLES AND PRACTICE OF X-RAY TECHNIC FOR DIAGNOSIS. By JOHN A. METZGER, M.D., Roentgenologist of the School for Graduates of Medicine, Medical Department, University of California, Southern Division, Los Angeles, with 61 illustrations. The C. V. Mosby Company, St. Louis, 1922. Price, \$2.75.

Book Reviews

THE CLINICAL STUDY OF THE EARLY SYMPTOMS AND TREATMENT OF CIRCULATORY DISEASE IN GENERAL PRACTICE. By R. M. WILSON, M.B., Ch.B., late Assistant to Sir James Mackenzie. With a foreword by Sir James Mackenzie, M.D., F.R.S., F.R.C.P., London: Henry Frowde and Hodder & Stoughton, 1921. Price, \$4.75.

This is not a work to be picked up and read hurriedly, for it represents the efforts of the author to fathom the basic origin of symptoms referable to the circulation. As observed by clinicians such symptoms have a value in diagnosis and prognosis, but Wilson goes further, and with a wealth of carefully recorded facts seeks the explanation of these symptoms. This takes us into a new realm in clinical medicine, now under study by different investigators, all of whom owe their initiative and stimulus to Sir James Mackenzie.

The first five chapters of the book are devoted to a consideration of *exhaustion* in its relation to fatigue and to cardiac embarrassment, its mechanism and determining causes, and its diagnostic significance. In like manner, *pulse rate*, *extrasystole*, *tremor*, *breathlessness*, *cyanosis*, *hyperalgesia*, *cardiac pain*, *headache* and *bloodpressure* are taken up and analyzed in great detail. Infections and the recognition of their different types are considered with thoroughness, since the author attributes to them a prominent rôle in the production of symptoms.

Quite the feature of the book is the unusual fund of clinical observations upon which Wilson has drawn. Nor are the observations necessarily complex and involved. Many times they are the simple facts of daily observation, known to us all but figuring rarely in text books, and yet of such importance that, in this book of studied symptoms, they play a large part in the discourses developed by the author. Frequently the charm of the medical writings of the English school resides in the personal note so thoroughly emphasized and in the amount of space devoted to the careful discussion of what to hurried Americans are the simpler phases of the problem under consideration. This personal point of view, this thorough discussion of a clinical observation or a symptom, has given the English books a delightful atmosphere.

In this small volume of 245 pages, the reviewer finds this personal touch, coupled with a wide experience, greatly illuminating the subject matter. The hypothesis presented may be disproven or accepted, as time goes on, but, as phrased in the foreword by Dr. Mackenzie, here is the "beginning of a very big undertaking." The book is worthy of study by every one interested in cardiology.

FRANK BETHEL CROSS.

LESSONS ON TUBERCULOSIS AND CONSUMPTION. For the Household. By CHARLES E. ATKINSON, M.D., Attending Physician and Instructor Medical Clinic Graves Memorial Dispensary, Los Angeles. Illustrated. Funk & Wagnalls Co., New York and London, 1922. \$2.50 net.

In this book, Dr. Atkinson has given to the public a most dependable work. It covers an extraordinary range of subjects relating to tuberculosis and though presenting them in simple language, quite entirely popular in form, manages to be absolutely orthodox throughout. Much of the material has been presented before, but not quite in the same manner. The author goes into the greatest detail in all his descriptions and explanations. The subject matter is in general well balanced, though in a few instances there occurs some slight over-stressing; as for instance, in his discussion on climate. Nevertheless, the book is a very valuable educational contribution and should prove a sorely needed friend to thousands of lay readers in search of health.

FOSTER MURRAY.

LE PROBLÈME DU CANCER. Par WILLIAM SEAMAN BAINBRIDGE, A.M., Sc.D., M.D., C.M., LL.D.; Prof. of Surgery, N. Y. Polyclinic Medical School and Hospital; Commander Medical Corps, U. S. Naval Reserve Force. Illustrated profusely. Louvain, A. Uystpruyt, and Paris, O. Dvin, 1922.

This is the first work to appear from the reconstructed press of the University of Louvain since the old one was demolished in the Great World War. Dr. Bainbridge was the American delegate to the "Congrès International de Médecine et de Pharmacie Militaires" held in Brussels, Belgium, early in the year, and this tribute was paid him of translating and thus issuing a French edition of his work "The Problem of Cancer," published by Macmillan, N. Y., and reviewed with much approval and praise in these columns, a few years ago.

It is an exhaustive work, embracing the history of cancer, ancient and modern; a consideration of cancer among vegetables and various animals; its geographical distribution; statistics of incidence; etiology; histopathology; experimental studies; prophylaxis; treatment; institutions for its treatment and the care of those afflicted; and the education of the public in the matter.

A. W. F.

LE MÉDECIN DEVANT L'ASSISTANCE ET L'ENSEIGNEMENT PSYCHIATRIQUES. Par HENRI DAMAYE. 12mo of 123 pages. Paris, A. Maloine et fils, 1922.

Damaye's little book is meant primarily for French readers and has to do mainly with conditions as they exist in France. The author deplors the fact that, in his country, the career of a psychiatrist, which should be one of the most attractive, has not received the proper attention and consideration. He considers that the place of the physician is not with incurable mental cases, but among those whom he can treat, assist, or cure, and he gives his views as to the best course to pursue in remedying existing conditions.

W. H. DONNELLY.

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OCTOBER, 1922

TRAUMATIC BACK INJURIES AND THEIR TREATMENT.*

By JAMES WARREN SEVER, M.D.,
BOSTON, MASS.

IT was with great appreciation of the honor conferred that I accepted this invitation to address you today. The opportunity to discuss with a representative medical group of a neighboring state a common complaint—one apparently but little understood, and not often easily diagnosed, is not to be ignored, especially in view of the fact that we all may be the wiser thereby.

In this paper I wish to call attention to the effects, local and constitutional, immediate and remote, of injuries to the back, as the result of falls, contusions and sprains, or strains. Many, if not most, of these cases to be referred to are individuals who have been injured in industrial accidents, and I particularly wish to call to your attention also the fact that many of these people whose backs are injured in various ways in industrial work, suffer long periods of disability and incapacity from performing their usual occupations as a result of such accidents, as will be referred to in detail later.

Under the various compensation laws now in force in the various states and territories, physicians are being called upon to state definitely just what the matter is with the individual, and what the duration of the disability is likely to be, as the result of any given injury. This medical opinion, without which these compensation acts could not operate successfully, must therefore be carefully arrived at, with adequate grounds for its support. This opinion, however, generally based on one examination, especially when made by an impartial examiner, appointed by the Compensation Board, is not easy to formulate in regard to back injuries. Many factors must be taken into consideration besides the actual objective signs, and generally the more common subjective symptoms present.

The necessity, however, of a correct diagnosis in these back lesions following industrial accidents is essential. The accuracy of the diagnosis is essential not only that proper treatment may be instituted and carried out, but that ana-

tomical repair be helped, restoration to function hastened, and the disability period shortened as much as possible. Precision in diagnosis, however, even under the most favorable conditions is not often obtainable due to the fact that many cases show no demonstrable bony lesions by X-ray examination, and the impossibility of differentiating muscle and ligamentous tears is evident. The best that can be done is usually in being content to differentiate bony from soft part injuries, and to venture an opinion as to prognosis and duration of disability, partial or complete as one's experience may dictate.

Before going into detail in regard to these cases, I wish to review briefly the general factors existing always in traumatic injuries to the back.

Etiology.—The causes are most varied, and may be intrinsic or extrinsic, that is, indirect or direct injury. An adequate knowledge of the method of injury is most helpful, that is, was the injury direct or indirect, the spine flexed or hyperextended, a blow, a fall, a lifting strain, and if so, what was the position of the individual at the time. All this helps in determining not only the anatomical localization of the injury, but the possibility of bone or soft part lesion.

There is also almost always the psychological element of litigation, which is generally supposed to be absent under the law in compensation cases, present in these individuals, which adds to the difficulty of making a correct diagnosis. These cases differ also from the ordinary routine backaches or strains one usually sees, because of the constant factor of definite trauma as an exciting cause.

There is a peculiar mental state present in these individuals analogous to that so often seen in people suffering from litigation neurosis to be observed in many cases, which in my opinion delays their recovery. Traumatic or litigation neurosis is not a disease but a state of mind, best recovered from in many cases by early settlement of the legal aspects of the case. It is a real factor in the delay of the recovery of the patient, and while it may be true that it would not exist without the antecedent accident, I am not prepared to say just how much it should be regarded as a disability from the compensation point of view, nor how long insurance companies

* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 20, 1922.

should be obliged to pay compensation on account of it when the individual refuses to return to the work he may be able to do. I do believe, however, that a certain number of these cases can best be studied, treated, and finally disposed of through the agency of a psychopathic hospital or consultant. They are essentially mental, and vary from the frankly hysterical individual to the melancholic and even paranoiac, and last but not frequent, the frank malingerer. Donoghue² suggests in these cases that there be established a "measured index of the individual's will to work."

The back injuries to be discussed will be divided into three classes, namely, (a) those due to lifting strains; (b) those due to contusions of the back from a fall or by being struck by some object, the injury being only to the soft parts; (c) those due to any accident where there has been bony injury to the vertebral body or one or more of its appendages.

The first class is represented by those cases who injured their backs by lifting strains, generally acquired by trying to carry or lift some object much too heavy for them. Many of these cases have sudden pain in the back when trying to lift heavy objects. They felt, as they report, something snap or give way in their backs, and generally are able to localize the sore spot very accurately. Generally the pain is in the lumbar region. There may be pain and localized tenderness over the low spinal muscles, usually one-sided, and at times the soreness extends around into the flank.

It is difficult to differentiate between muscle and ligamentous tears at first. I believe, however, that ligamentous tears are of longer duration; and that the soreness and tenderness are deeper seated. Ligamentous tears may be located in the region of the sacro-iliac joints, and so may confuse the diagnosis. They do not get well as quickly, and heavy work in the future is apt to produce a recurrence of the soreness and lameness at the same spot. The diagnosis of back strain was made in the majority of these cases. The term back strain is used advisedly, for any definite classification of these cases is difficult. The majority apparently had received muscle or ligamentous tears involving the fibres of the erector spinæ group of muscles, the deep spinal ligaments or the ligaments which are inserted about the sacrum or sacro-iliac joints. Very few showed the typical signs of a true sacro-iliac strain although it did exist in some cases but was definitely in the minority. As a rule, definite back support is needed for a while, and is not supplied by a six inch canvas belt loosely applied about the pelvis.

The predilection of the sacro-iliac ligaments or joints to become injured is well-known, and generally misinterpreted. The necessity for

clearly localizing the anatomical forces and the distribution of pain, with other signs and symptoms is obvious, and an analysis of the method of production is essential to a correct interpretation of the condition, without which one may go far astray. An X-ray is always an essential, even purely on a negative basis.

Simple strains or sprains may be generally easily relieved by strapping extending well around to and beyond the anterior superior spines on either side, with a large felt pad placed over the hollow of the back and sacrum. The strapping should be tight, especially between the trochanter and the crest of the ilium. Manipulation with or without anæsthetic will often reduce at one attempt early sacro-iliac displacements. Old ones often take care of themselves, by gradual bodily readjustment. Early cases I believe would do better by the use of adequate massage, baking, and general physio-therapeutics daily after the first ten days or two weeks.

Associated with these sacro-iliac strains or displacements one often sees sciatica. In fact many low back conditions are manifested early by a sciatica, more or less severe, and generally clearing up following the adequate treatment of the primary cause. Sciatica by itself is a rare condition.

One other condition seen occasionally, and not too rarely not to be worthy of mention, is spondylolisthesis, or a slipping forward of the body of the 5th lumbar vertebræ on the 1st sacral body with a tilting forward and downward of the body of the 5th. This condition may be static or traumatic in origin, and usually leads to great discomfort. The treatment is adequate fixation, by operation, by a backbrace, or by a corset. Certain severe types of this condition may lead to partial paralysis of the legs. It is a condition described by Sir Arbuthnot Lane, as very common to coal heavers. An examination of the back in these cases shows usually a marked shelf at the top of the sacrum. The fingers can be placed upon the top of the back edge of the 1st sacral vertebræ, and the lumbar spine above seems to have been moved forward as a whole.

There is another type of static posture and backache known as camptocomia or bent back, which has recently been described by Hall². It has also been described by Saliba³ under the name of antalgic spinal distortion. There is no definite pathology, but the condition is manifestly hysterical usually following trauma or mental shock, and results in the individual going about with the body flexed at the hips, or displaced laterally. Mental suggestion supplemented by back support usually results in an early cure.

Other conditions masked or exaggerated by local trauma or injury have also to be considered and are as follows:

Postural Strain.—Under this classification we must also include these cases which are called sacro-iliac strains. Static or postural strains are not the result of trauma, but of the constant muscle strain, and over-use superinduced by an habitual bad position, and are the result of definite mechanical and bodily defects. Normally an individual in the upright position when at rest is supposed to carry the weight on his bones, and not on his muscles or ligaments. The center of gravity falls in a line running from the tip of the mastoid through the front of the shoulder, great trochanter, just back of the patella, and about an inch in front of the external malleolus. Any variation from this normal implies muscle and ligamentous strain and so pain—therefore when a person habitually stands with the body in a position of poor posture, there is created a lack of normal muscle balance and consequently muscle strain which is translated into pain.

The so-called “carrying posture” is a good example of poor standing position, and is often seen in enteroptopic individuals. The trunk is carried back over the pelvis, the dorsal convexity is increased, and the lumbar spine is hollow or flattened. The abdomen is protuberant or may be scaphoid in type. Backaches are not uncommon in young women with a physiological lateral curvature of the spine associated with a round hollow back and forward shoulders, and is generally easily relieved by adequate exercises, and support.

One sees other types especially in women who present marked hollow backs, with a marked increase in the normal inclination of the pelvis. These cases often present tenderness along the back muscles over the sacro-iliac joints, and complain of stiffness and a “wooden feeling” in the legs. This is all due to muscle strain and may be relieved by proper support by corsets—reinforced if necessary by a belt or extra steels, and in many cases relief is afforded by stretching the tight and contracted heel cords which take part in the general muscular hypertonicity. This stretching may be accomplished satisfactorily only by means of the so-called Shaffer stretching shoe.

Many indefinite backaches which fail to clear up under ordinary treatment are relieved at once by raising the heels of the shoes and by the previously mentioned stretching. High heels are not the curse always that they are made out to be, for by raising the heels the body is tipped back and so relieves the strain on the tense back muscles and hamstrings.

Another source of backache often persistent is that due to inequality in the length of the legs. All cases who are examined for backache should have the legs measured and should also have the trunk displacement noted. A short leg is a

frequent and often unrecognized cause of backache, and many cases get early relief by making the short leg longer, or as long as the other one, by means of a lift on the shoe. Any flat foot, or pronated foot, should be of course corrected likewise.

Another common condition complicating these back injuries is the presence of hypertrophic arthritis in the older individuals, generally quiescent and pre-existent to the injury. The accident usually lights the condition up and so aggravates it. Without this complication the disability period might be short. With it, the period is indefinitely lengthened and may be controlled only by careful and skillful treatment. Not a few of the individuals who have had a quiescent arthritis of the spine aggravated by an accident fail to return to their original occupation as a result of such a complication. They are laid up for long periods of time with an increasingly stiff and painful back, even under good care, and an X-ray examination rarely fails to show progressive arthritic changes.

The Industrial Accident Board is prone to recognize that an accident may and often does aggravate such a pre-existent condition, and consequently the insurer has to pay compensation for the period during which the individual cannot work, and has pain in the back. The presence of hypertrophic arthritis in a spine which presents a crush fracture of one or more vertebral bodies, may lead to confusion in the diagnosis in that the vertebral bodies may be so altered by the arthritic disease as to resemble a fracture, and one cannot be too constantly on his guard in the interpretation of such X-ray plates.

Tuberculosis of the Spine.—Common in children and rather early diagnosed by the presence of history, spasm, pain, guarded gait, the so-called military gait, the presence of a kyphos. In an adult the history is not as suggestive. There may or may not be a kyphos, but usually is if the vertebral destruction has gone on far enough. There is persistent pain in the back and weakness in the legs, even to beginning paralysis, increased knee jerks, Babinski, and ankle clonus. The iliac fossæ should always be examined for the presence of a psoas abscess. The treatment is rest in bed on a frame or in a plaster shell, later an adequate jacket or brace treatment. The prognosis in adults is not as good as that in children. It is not an unusual disease in adults, and its possibilities should not be forgotten.

Osteomyelitis of the spine is not frequent. It may, however, follow after primary osteomyelitic foci or general septic infection. Carcinoma and sarcoma destroy the vertebral bodies in much the same way as tuberculosis. Sarcoma may be primary and I recall having seen one such case this past winter. Carcinoma generally is secondary to a primary focus in the uterus, breast,

or prostate. Occurrence of pain in the back with a kyphosis following the removal of a breast for carcinoma should put one on the right track towards making a diagnosis. Uterine carcinoma may be overlooked however, but should not be forgotten in searching for a cause. Backache in men may be secondary to prostatic removal even if microscopic examination fails to show malignancy. It may exist and cause metastasis in the spine with fatal results. All men with persistent backaches beyond middle age should have an adequate examination of the prostate. It has been my fate to have lost two cases in two years from carcinoma of the spine following removal of apparently normal prostates.

In a large number of cases represented in this series of back strains, it was found that the minimum period of disability was approximately six months. Many cases had no medical attention; others had inadequate treatment; and a few had good treatment.

To say to every patient whom you saw with a back injury as the result of a strain or sprain, that he was in for a period of six months disability, would soon rid you of such cases, but nevertheless it is true, and such is the fact in these industrial cases I have followed. In my opinion the treatment has been grievously at fault.

The reasons to my mind for such a condition are as follows: failure to report accident early; failure to make a diagnosis; failure to supply intelligent treatment; failure on both the part of the patient and physician to follow up the treatment.

Back strains are generally made light of, and strapping with sticking plaster seems to be the obvious treatment. It, however, is apparently not enough in the way of adequate treatment, or it is not properly applied so as to give good support. Strapping properly is an art, and should be done with a clear conception of what is to be accomplished mechanically, or it fails. These cases should be entitled to as good care as others with more severe injuries, and the treatment supplemented by rest, massage, baking, support, etc. To my mind the first requisite is control of the patient. Either the cases must show better results from treatment, or the medical profession will fall down grievously. Careful and adequate physical examination will lead to more comprehensive treatment, and is an essential all too often neglected.

A study of the cases as a whole group showed that many of them were given a liniment to rub on the back; most of them were strapped once or twice at varying intervals with sticking plaster, and practically all of them were allowed to go their own sweet way, without any adequate follow-up system looking to their physical condition or proper medical attention. A number of

the cases were discharged from hospitals without proper attention having been given to their backs in the way of proper support, and without further advice as what was best to do or how to do it. Consequently they drifted. It is my firm belief that proper and constant medical attention in skillful hands would have cut the disability periods of these people in half.

Class II.—The conditions causing the injuries in Class II are clear; a fall from varying heights and landing on the back, or by being struck on the back by some object, the injury due to direct violence. Now direct violence may produce many results, such as fracture of the vertebral bodies, or fracture of a transverse process, lamina, a spinous process, rupture of anterior or posterior spinal ligaments, as well even as rupture of the ligamentum nuchæ or intraspinous ligament. Contusions involving both deep and superficial muscles and ligaments are common, and injuries to the tendonous insertions of the spinal muscles and ligaments in the region of the sacrum are frequent. Over-extension or forced hyperextension of the spine may produce injury to the anterior spinal ligaments; while forced flexion may produce not only a compression fracture but ligamentous rupture as well.

In Class II the average minimum period of disability was 6.3 months, which as compared with the period of disability of 5.9 months in Class I, should excite comment in view of the more severe type of injury. In Class II the back injury was caused either by a fall, varying from a maximum of seventy feet to eighteen inches, or by being struck on the back by some object. Those cases which suffered fractures of the spine as a result of such falls are not included in this series.

Here again the treatment was at fault in my opinion, and the same conditions held in this series in regard to treatment, accurate observation, and follow-up work, as in Class I. No further comment seems to be necessary.

Class III.—To go on now to the more severe injuries to the spine itself, I should like to discuss the diagnosis and treatment of crush fractures of the vertebræ, including as well those cases which showed fractures of the spinous and transverse processes. There are forty-two cases in this class.

The anatomical localization of these fractures is as follows:

TABLE I.

Axis	2	2d lumbar	10
4th cervical	1	3d lumbar	7
9th dorsal	2	4th lumbar	1
11th dorsal	3	5th lumbar	3
12th dorsal	7	1st sacral	1
1st lumbar	16	Transverse processes...	2

A number of these cases had more than one vertebræ involved as the following table will show:

TABLE II.

- 9th dorsal and 1st and 2d lumbar.
- 11th and 12th dorsal, and 1st and 2d lumbar.
- 12th dorsal and 1st lumbar (2).
- 12th dorsal and 5th lumbar.
- 12th dorsal and pelvis.
- 1st and 2d lumbar (3).
- 2d and 3d lumbar (3).
- 4th and 5th lumbar.
- Transverse processes of the four lumbar vertebrae.

It is at once obvious that the region from the 12th dorsal to the 2nd lumbar inclusive is the "point of election," as it were, of these fractures. Just why this should be so, I will explain later.

The causes of injury in this group were falls from a height, the patient landing on his back, feet, or buttocks. Others received their injury by being struck on the back by falling objects such as derrick booms, bags of flour, automobiles, and wagon wheels.

The mechanics of a crush fracture is generally that of forced flexion of the spine, and lesion is most commonly located at or about the dorso-lumbar junction. The comparative frequency of this type of fracture following injuries to the spine has, I believe, been long overlooked, and many cases which have in the past been called "traumatic spines," or "railroad spines," I believe, have been crush fractures of one or more vertebrae. Erichsen⁴ calls attention to the effects of certain forms of injury from which the spinal cord is liable to suffer without serious lesion of its protecting column or enveloping membranes, and describes two conditions, one of which he calls "concussion of the spine*" and the other "spinal anemia." He also describes a condition which he calls sacrodynia which is an early description, if not the first, of our well-known sacro-iliac strain of today.

A compression fracture of a vertebra is one where the body of the vertebra is crushed or flattened evenly, or more on one side than the other, and more often in its anterior portion than the posterior, depending of course on the direction of the application of the crushing force. They generally follow severe violence applied through the long axis of the spine, or while the spine is forcibly flexed. Falls on the buttocks,

shoulder, or back, or landing from a height on the feet, combined with forcible flexion of the spine, are most frequent causes. The term "jack-knife" fracture is graphic and probably correct as far as its anatomical application goes.

The frequency of compression fractures of the spine varies directly with the different elasticity of the different regions of the vertebral column. The elasticity of the spine depends largely on the inter-vertebral discs, and it varies directly with relative thickness of these discs, so that the most frequent site of injury would be in the dorso-lumbar and lumbar region. Fractures of this type occur as a rule only in those portions of the vertebrae which have a supporting function, that is, the bodies. As a rule they are more compressed anteriorly than posteriorly. More than ordinary violence may also lead to a lateral displacement of the spine as a whole, above the site of the injury.

The cord, ending as it does at about the level of the first lumbar, is apt to be uninjured. Oedema and hemorrhage about it may lead to temporary paralysis from pressure, the symptoms from which usually, however, clear up soon. In case the cauda equina was crushed or injured, we might reasonably expect a partial regeneration of the nerve roots, the physiological, histological, and clinical evidence of such power of regeneration being strongly in its favor.

As has been shown, the level of the 1st lumbar vertebrae is the most common site of this type of injury, probably due to the fact that this is the area of greatest mobility of the spine, and the least guarded by bony protection. The fractures are not limited to one body alone but involve others as well as the 1st lumbar. This may be seen in a study of Table II.

Certain cases showed a deformity of the back, a kyphos, or backward bowing, or knuckle, as a result of the bony destruction or collapse of the vertebral body. This knuckle or kyphos is not a constant factor, and may result from the fracture of one or more bodies. It is an important diagnostic point to bear in mind, and, means of course only one thing, namely, destruction or distortion of the vertebral body. The kyphos may not make its appearance at once following the injury, but may appear and increase somewhat during the convalescence, especially when the individual is up and about without proper back support.

The interesting thing about these fracture cases, and probably the reason why so many of them are not diagnosed at first, is that they complain only of a stiff and painful back, with generally some tenderness over the site of the fracture. Very few of the cases have any symptoms due to nerve pressure, manifested as loss of sensation, paralysis of the legs, or incontinence of the bladder and rectum. This lack of nerve

* Concussion of the spine—definition. Indicates a certain state of the spinal cord occasioned by external violence, a state that is independent of and usually, but not necessarily, uncomplicated by any obvious lesion of the vertebral column, such as its fracture or dislocation, a condition that is supposed to depend upon a shake or jar received by the cord in consequence of which its intimate organic structure may be more or less deranged, and by which its functions are certainly greatly disturbed, so that various symptoms indicative of loss or modifications of innervation are immediately or remotely induced. May be due to molecular changes in structure of cord. Four distinct pathological conditions.

(1) A jar or shake of the cord, disordering, to a greater or less degree, its functions, without any lesion perceptible to the unaided eye.

(2) Compression of the cord slowly produced by the extravasation of blood.

(3) Compression of the cord by inflammatory exudations, serum, lymph or pus, within the spinal canal.

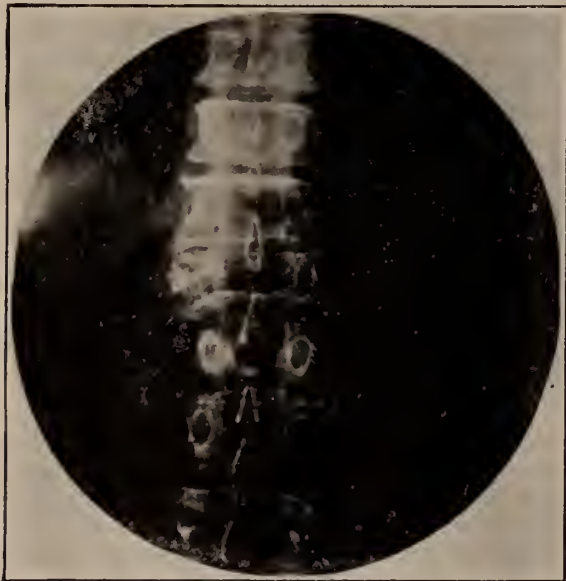
(4) Chronic alteration of the structure of the cord itself as the result of impairment of nutrition, consequent on the occurrence of one of other of the preceding pathological states, but chiefly on the third.



Fracture of first lumbar. Hypertrophic arthritis general one year after accident.



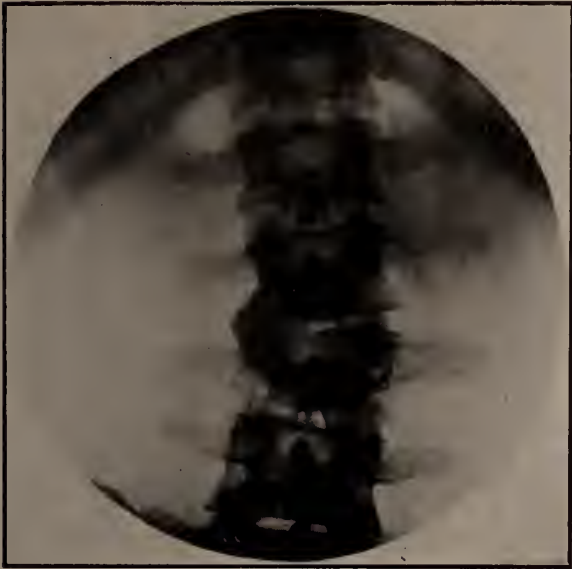
Lateral view. Fracture of first lumbar. Note narrowing of intervertebral space and clean edges.



Fracture of first lumbar vertebra. Six year later.



One year after accident. Crush fracture of second lumbar vertebra.



Fracture of third lumbar vertebra. Note lateral displacement of spine. Six months after accident.



Shows crush fracture of third lumbar vertebra which resulted in temporary complete paralysis involving both legs as well as the bladder and rectum. This accident was the result of a fall of from fifty to sixty feet, and by the use of a back brace and double calipers to both legs, this man made a complete recovery of motion and sensation in a period of twelve months, showing the power of the cauda equina either to regenerate or the result of the absorption of hemorrhage or exudate about the cauda equina.



Fracture dislocation of the fourth cervical vertebra, as a result of a fall down stairs. No symptoms except stiff neck. Treated by traction and Thomas collar.



Spondylolisthesis. Note tipping forward and downward of fifth lumbar vertebra.



Lateral view. Six months after accident. Note wedge-shaped body and new bone formation at anterior edge.

involvement is probably due to the fact that the spinal cord ends at about the level of the 1st lumbar vertebra, the point of greatest frequency of fracture and so escapes injury. Practically all cases of this injury complain of a stiff, lame and painful back. They cannot bend freely, and are much more limited in side bending than in forward bending. Their disability at first is generally complete, but as time goes on, they are able to be up and about but not able to do heavy work.

In regard to the graver symptoms accompanying these fractures, certain of the cases showed definite signs of cord injury, manifested by loss of sensation in one or both legs, not complete, except in three cases, and more or less paralysis either early or late. Some of the cases which showed early loss of muscular power recovered it wholly, while others have suffered permanent damage to the cord from pressure of the injured vertebræ, the dislocated intervertebral disc, or pressure myelitis of the cord from extradural hæmorrhage.

Many of these cases who had crush fractures of the spine went unrecognized, and consequently untreated as such for long periods of time, or were treated as sprained backs and strapped. Many of them as shown by their histories left various hospitals unrecognized in spite of the individual's complaints, and without support for their backs, in some cases as early as eleven days after the injury.

The treatment of course in all these cases should be early and adequate fixation of the spine, in a plaster jacket at first, and later by a back brace. The whole period of treatment may prob-

ably cover several years in the severe cases. The question of operation on the spine, designed to furnish support to the crushed vertebræ has been considered and has been done in some cases with the view of cutting down the period of convalescence and disability. In the simple crush fracture of one body, I do not personally believe that either much time or much additional fixation is gained in restoring the individual to his occupation by operative means.

The question of treatment of these fractured spines without nerve symptoms is one of the greatest importance. Should they be treated as one would treat any fracture, that is, with a net minimum period of fixation, and then gradual use, or should they have a long period of fixation, with plaster jackets and back braces, covering a year or two? Are we fixing them too long, or shall we be guided by clinical symptoms of a strained and irritable back, and continue fixation as long as these symptoms continue? Will increasing use begun early, say after three or four months, make a back more irritable, aggravate the callous already present, increase the symptoms, and possibly lead to nerve pressure from new callous formation, or will such use properly restricted lead to earlier restoration of usefulness and function? These are the questions we should be able to answer.

My own opinion is that with the simple crush fractures, there has been in the past and still exists a marked tendency for too long a period of fixation, either with or without operation. As I have said before, I believe they do quite as well without operation, if not better, than with it.

We all know the evils of too long fixation of any joint or part with its consequent atrophy of soft parts and muscle adhesions, and all of us who deal with fractures have this phase of the subject brought home to us daily. Why should not the same contributing factors be present in too long fixation of a single vertebral body fracture. It is a common experience to have a case come for examination several months after an accident, complaining of only a stiff and painful back, with no deformity, who shows after an X-ray examination a crush fracture. Early fixation by a brace or light jacket, but better still, rest in bed for three or four weeks, followed by a brace, would probably have averted this subsequent discomfort.

Now, gentlemen, you have been presented with an outline of the types of traumatic back injuries one commonly sees. It is evident that the patient is many times falling between two stools, namely, the insurance company and the casual physician. What are we to do about it? And should we not be more careful in our diagnosis and treatment of these cases if only for our own good?

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Discussion.

DR. A. MACKENZIE FORBES, Montreal, Canada: Injuries Due to Lifting Strains. I am glad that Dr. Sever has drawn attention to the difficulty of differentiating between organic lesions of the spine and functional lesions.

Of course we now have the X-rays which will show us an injury to the bone. From my point of view we have also a most valuable symptom which will serve to differentiate between the organic and the non-organic. I speak of muscular spasm and muscular tone.

I remember Osler used to speak in this regard of what he called railway spine which was indeed a traumatic hysteria or neurasthenia. He defined this as a morbid condition following shock which presents the symptoms of neurasthenia or hysteria or of both.

Regarding the etiology of this, Osler states that bodily shock or concussion is not necessary. An affection may follow a profound mental impression. It is most important that we should be able to differentiate between organic changes, be they in the nervous system or be they of the muscle and other soft parts and functional manifestations.

The diagnosis of an organic lesion of the nervous system should be limited to those cases in which optic atrophy, bladder troubles, and signs of sclerosis of the cord is well marked—indications to degeneration of the lateral column or multiple sclerosis.

Osler says that in railway cases—*i. e.*, accident cases, so long as litigation is pending and the patient is in the hands of lawyers the symptoms usually persist. Settlement is often the starting point of a speedy and perfect recovery.

We teach that an arthritis is always accompanied by muscular spasm. Muscular spasm is also often a reflex symptom of an injury in extraneous parts. The inflammatory process adjacent to muscle is almost certain to be accompanied by muscular spasm. For instance, I do not believe that there can be injury of the soft parts uniting vertebra to vertebra, or in the muscular stays of the spinal column, lumbo-sacral joint or sacro-iliac joint without muscular spasm; thus I consider that muscular spasm will differentiate between the organic and inorganic.

From my point of view it is more difficult to

diagnose between an organic lesion which is due to trauma and an organic lesion which primarily depends on a rheumatoid condition. In this one our safest guides are the fact that rheumatoid conditions are likely to be affected by limited muscular spasm, pseudo crepitus, and, most important symptoms, although not complained of in other joints.

In patients complaining of pain or disabilities about the spine it is necessary to make a careful routine examination. The patient must be put through all spinal movements—spinal flexion, extension, side bending to the left, side bending to the right, are not sufficient. Rotation in all directions must be carried out.

Careful examination for tenderness also should be carried out.

Sir James Mackenzie has drawn attention to the fact that tenderness is a reflex symptom.

The examination of the ilio psoas muscle should also be part of our examination.

The abdomen, the genito-urinary system, the nervous system, and even the circulatory system, should be carefully examined. Often signs of constitutional disease will be found when a careful examination is made.

Persistent sciatic pains are usually an indication of pressure. Sciatica, as a primary affection, is rare. The greatest number of cases of sciatica are due to the pressure of rheumatoid conditions about the lower spine, sacro-iliac or the hip joint. These conditions are all relievable.

I am glad that Dr. Sever has spoken of postural strain. These strains can be relieved by a change in posture. These also indicate the importance of a careful general examination in all persons who complain of pain in the region of the spine.

I have noted, with very great interest, that Dr. Sever states that the average minimum period of disability in cases which were due to lifting strains was 5.9 months. This statement, to my mind, is a grave reflection on our ability to diagnose and to treat such cases.

Dr. Sever's Class "2"—namely, those with injuries due to contusion of the back where the injury is only in the soft parts, must now be considered.

Dr. Sever states that in the class where the injury is due to the trauma of direct violence the average minimum period of disability was 6.3 months. I agree with his deduction that in these cases diagnosis and treatment must again have been at fault.

Class "3" is due to bony injury of the vertebral body or appendages.

Included in Class "3" Dr. Sever has discussed that most interesting class of fractures known as crush fractures of the body of the vertebrae. We have had several of these in our experience, and it is important, I think, to study the prognosis of this class. Dr. Sever draws attention to the fact that lesions of the vertebrae are very frequently found from the 12th dorsal to the 2nd lumbar. This is probably due to the fact that in crush fractures the injury is generally that of forced flexion of the spine. We all know that flexion takes place to a greater extent in this region than any other region.

I quite agree with Dr. Sever that it is only in recent years that we have been able to make an accurate diagnosis of these so-called crush or compression fractures of the body of the vertebra. They have, in the past, been difficult to diagnose from Potts' disease of the spine, and, really, it is only due to the development of radiography that we are able to make an accurate diagnosis in a great number of these patients.

I have noted that in some of the clinics in the City of New York this lesion has been treated in some cases by the grafting of bone into the spinous process in order to immobilize the fractured area. This treatment may be indicated in certain cases, but I think that in the majority rest will prove a more efficient form of treatment; certainly if I had a crush fracture of one of my vertebrae I would think twice before I consented to having an Albee bone graft performed on the spinous processes of the vertebrae involved.

The fact that the deformity progresses for a certain limited period is apt to make the diagnosis difficult. One is bound to suspect a tuberculous lesion and to disassociate one's mind from the history of trauma when the ocular manifestations in the lesion have appeared perhaps some weeks or months after the injury.

While it is perfectly true that nerve injury is rare in these cases because of the position of the fracture, both in the spinal column and in the individual vertebra, the nervous system in every case should be carefully examined. In some cases permanent injury occurs; at the same time we must remember that these cases are unusual.

The treatment of fractures of the spine should be carried out in general principles. Early rest is indicated in all. Protection for a limited period of time should follow this early rest.

I do feel, however, that massage and passive movements should be begun at the latest immediately after the period of early rest has ended.

Indeed in the majority of cases massage is indicated from the beginning.

The seriousness of spinal injuries depends, from my point of view, entirely on the question of whether the nervous system is involved or whether it is not involved. Injuries to the spine can be repaired. Nature, if given an opportunity, will repair even the most grave injuries.

DR. REGINALD H. SAYRE, New York City: This is a beautiful paper and extremely to the point. The importance of this question industrially is brought home to us every day. The first two weeks is the critical time. The compensation people want to know what the X-ray shows. Sometimes it does not show anything. Stereoscopic X-ray pictures may show lateral displacements, but tears to the ligaments won't show. Strapping is the best support, and a useful thing is to punch holes in the straps and pull lacing through to hold it in place. Support should be used a long time. I have seen cervical paralysis follow too early removal of support. Tuberculosis of the spine in adults is more common then is generally supposed.

DR. RALPH R. FITCH, Rochester: Strained backs should be treated immediately. The patient should be put to bed, in plaster spica in acute cases. Walking increases strain of the ligaments and prolongs convalescence. In vertebral fracture, I think there are many cases where operation should be done. Healed fractures show "plumbers' joints." That is nature's method. We can do a fusion operation which speeds up the healing process and gives a stronger back.

DR. SEVER (*closing*): Something should be done to prevent long continued compensation being paid for coincident arthritis. In regard to tuberculosis of the spine; in these cases the kyphosis is slowly formed and definitely progressive. In compression fracture, it may appear in a few weeks, but never gets big and does not simulate tuberculous kyphosis except in the incipient stages. There is formation of new bone after four months, often with limitation of side bending and rotation. Many individuals don't know they have a compression fracture. When they know it they become disabled mentally and physically. The problem is psychological as well as anatomical. Often cases go along for six months with no more treatment than osteopathy or chiropractic. Fractures of the transverse processes do well with fixation. They can go back to work after a short interval of fixation with a corset.

CORRECTIVE AND OPERATIVE TREATMENT OF IDIOPATHIC, STRUCTURAL SCOLIOSIS.*

By ARMITAGE WHITMAN, M.D., F.A.C.S.,
NEW YORK CITY.

THE treatment of rotary lateral curvature which I shall describe is particularly appropriate to this meeting, as it emphasises the combination of mechanical and surgical principles which is essential to the practice of modern orthopedic surgery.

The condition has been a bugbear to every one called upon to treat it. Its incidence is frequent, it is rarely noted in its early stages, its origin is often obscure, its course and prognosis are uncertain, and its treatment is unsatisfactory. In a brief paper of this sort more or less general statements are forced upon one, but I shall try to be as accurate as is consistent with the necessary brevity, and to err upon the side of conservatism.

I exclude from consideration scoliosis arising from well known causes, such as anterior poliomyelitis, rachitis, vertebral malformations, empyema, torticollis—in other words secondary scoliosis. I exclude postural deformity—that is, deformity which may be corrected by a change in attitude. We thus arrive at a class of cases of unknown origin in which the deformity cannot be corrected by a change of attitude, and in which it has been present long enough to cause an alteration in the structure of a vertebra or vertebræ.

The characteristic subject is a girl between the ages of twelve and sixteen, not necessarily strikingly slouchy in posture, at least in these days of universal slouching, but of a rather non-aggressive mental and physical makeup, possibly because she is at the shy stage of adolescence. She is definitely not of the athletic type. The secondary effects of bad posture, such as poor circulation, unpleasant breath, etc., are usually present, but patients present themselves—or more often are presented—for treatment because someone often the dressmaker, has noticed that the shoulder stuck out behind, or that one shoulder or one hip was unduly prominent.

On examination one notes the characteristic deformity, the lateral curvature, the rotation of the vertebræ causing the protrusion of the ribs on the convex side, referred to by the patient as "the shoulder blade sticking out;" the corresponding asymmetry of the chest, the inequality in height of the shoulders, and possibly the prominence of an iliac crest caused by the lateral deviation in the lumbar region. X-ray will show the lateral curvature, and the rotation, and if the deformity is sufficiently far advanced, the wedging of the bodies of the vertebræ. The deformity cannot be corrected by change in posture, or by manual pressure.

The majority of such cases presenting themselves for treatment will be treated fairly casually. The condition may be dismissed entirely as something that the child will grow out of, that will not get any worse, that the dressmaker can conceal, or that is of no importance. All these statements applied to a given case may be true. Conversely, I submit that in a small proportion of them the patient gets progressively worse, the deformity increases until it becomes possibly the most hideous that we encounter, and its secondary effects are so severe in their derangements of the internal organs that few such patients survive the age of thirty. An indefinite percentage of cases is thus extremely serious.

That is an indefinite statement, and it is thus no wonder that treatment has been indefinite. The remedies applied have been exercises, corsets, plaster jackets or braces—prescribed rather indiscriminately. Exercises are usually given by a gymnastic instructor, and corsets worn until, for example, patients refuse to wear them in summer. Under this desultory treatment the majority of cases were arrested, and the indefinite small proportion grew worse, until when the parents woke up to the situation it was too late to do anything.

We are familiar with the therapeutic action of well known drugs, but many of us are a little vague as to the therapeutic properties of exercises and apparatus. I suggest that for a moment we stop thinking of children and think of young fruit trees in an orchard. A sapling once started growing crooked and exposed to winds, and constantly increasing superincumbent weight, would have no inherent tendency to grow straight of itself. The experienced gardener would probably lash it to a straight support, and under supervision and renewal of his lashings from time to time, would expect it eventually to straighten.

Upon this arboricultural foundation then:—we may expect by exercises to strengthen the muscles that support the spine to such a degree that *provided the patient makes the effort* the spine may be held straight and further collapse prevented. We expect by a corset or a brace to hold the spine for the patient, recognizing that such treatment must be supplemented by exercises to prevent the atrophy consequent upon disuse. By corrective plaster jackets we hope actually somewhat to straighten the spine, and very appreciably to improve the external appearance of the trunk.

I suggest, therefore, that when a borderline case of scoliosis appears for treatment, a photograph, X-ray and tracing of the spine be taken, and that exercises be instituted. If the case grows worse it passes to the second class, exercises plus support, and finally into the third, that in which corrective treatment is indicated.

Having finally narrowed our field, therefore, to a case of idiopathic, structural scoliosis, known

* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 20, 1922.

to be progressive, and in which less radical measures have been proved ineffective, we are justified in resorting to corrective treatment.

We have found at the Hospital for the Ruptured and Crippled that in this type of case almost all except the severest cases may have the radiographic appearance of their curvatures improved, and their external appearance greatly benefited by the type of corrective jacket which I shall illustrate.

We find also, that most cases improve up to a certain point, and there stick, and that the degree of improvement may only be maintained by the corrective jacket, any corset or brace allowing a certain amount of relapse. It is evident then, that for a permanent cure, the patient must be held in the corrected attitude for a period of years while the accommodative changes in the spine take place.

It was in the effort to shorten this period of convalescence that we became interested in the fusion operation on the spine, as performed by Dr. Hibbs and Dr. Forbes. We may assume, it seems to me, that there is originally in these cases a primary curve, in response to which, to maintain the balance of the trunk, a secondary curve develops. Thus, supposing that we may arrest the progress of the primary curve we should thereby simultaneously arrest the secondary. We endeavor to accomplish this by ankylosing the area assumed to be that of the primary curve—the dorsal spine. We assume this, first, because the deformity is usually there first evident; second, because motion in this region is so limited that its abolition causes the patient little if any inconvenience; and third, because the ankylosis prevents forward bending, the attitude in which the protrusion of the ribs, the most objectionable feature of the deformity, is most apparent.

The course of the ordinary case is as follows: The patient is treated by corrective jackets changed every two months, until the maximum amount of correction is attained, a period usually somewhat over a year. If she chooses operation in preference to prolonged fixation by means of the jacket, she then enters the hospital and is placed at once upon the convex stretcher frame. She remains on the frame until her skin is in good condition, and until she is accustomed to it. The operation is then performed. She is at once replaced upon the frame where she remains for two months. During the last month she is encouraged to turn upon the face and extend the spine with the idea of stimulating callous formation, and strengthening the lumbar muscles. A short plaster jacket is then applied and worn for two months for the purpose of steadying and protecting the spine, as one would protect a recently fractured femur. The jacket is then replaced by an ordinary corset, and exercises instituted for the weakened lumbar muscles. Naturally the routine is varied according to the peculiarities of the individual case.

My first operation was performed in July, 1920. Since then I have operated on fifteen cases of this type. Eleven have been either entirely without support, or wearing nothing but an ordinary corset for periods of seventeen months to four months depending on the order in which they were operated. They should, perhaps, not be reported as end results until they are all at least twenty-one years old. Nevertheless, were relapse and progression of deformity to occur, one would expect it in the period closely following removal of support. The patients were almost all full grown at the time of operation, thereby practically eliminating the question of the influence of the operation upon their future development. I have failed to mark any progression of the deformity either by inspection or X-ray examination, and the patients are all satisfied with their condition. There have been no deaths and no infections.

The operation has provided an opportunity largely lacking for inspection of the scoliotic spine during the comparatively early stages of deformity. This is fortunate, as a check on any undue enthusiasm in regard to corrective treatment. The amount of distortion of the vertebræ, and particularly of rotation, present in cases in which the curvature had appeared from inspection and palpation and from X-ray examination to have been almost entirely corrected, has been surprising. It is possible that indefinite recumbency upon the stretcher frame might correct such a deformity. So far I have encountered no case in which the recommendation of such a course seemed justifiable.

In the attempt to put an exceedingly complex subject into as small a compass as possible, I shall certainly be criticised, and in the face of criticism, however, I offer a summary of my impressions:

- (1) Some 12 per cent of all school children present structural scoliosis.
- (2) An indefinite percentage of these deformities will progress with consequent deformity that will eventually not only be cosmetically unpleasant, but which will constitute a menace to life.
- (3) All subjects of the deformity should undergo periodic examinations to determine whether or not the deformity be progressive.
- (4) If it be progressive it may in some cases be checked by apparatus and exercises.
- (5) If these measures prove ineffective, corrective treatment should be instituted.
- (6) The maximum correction having thus been gained, the period of convalescence may be much abbreviated by an operation, supplemented by recumbency on the convex stretcher frame.
- (7) In the case of a patient in the active period of growth, the operation should be postponed as long as possible, because (a) in a deformed spine properly supported growth tends

to minimize deformity. (b) The older the patient the more rapid the ankylosis.

Discussion.

DR. A. MACKENZIE FORBES, Montreal, Canada: The judgment of the medical profession on the subject of the operative treatment of scoliosis is rapidly changing. I addressed the American Orthopaedic Association two years ago on this subject, and, after the meeting one doctor came to me and said that one of my colleagues considered me and others doing the fusion operation, as little better than murderers. Perhaps we are, but perhaps I can prove that we are not as black as we are painted.

Before discussing the operative treatment of scoliosis let us review the previous treatment. For ten years this has been a much discussed topic. Abbott of Portland stimulated great interest in the subject in 1915. There have been three schools of treatment: (1) Lovett (the father of modern study of scoliosis) and his followers; (2) Abbott of Portland; (3) Adams *et al*, including myself. I am the *et al*. I discovered what was new to me, and what others may have forgotten, viz.: that if you rotate the trunk in one direction, the bodies of the vertebrae would rotate in the opposite direction. This seemed paradoxical and it took me a long time to find out why this should be. I studied the works of Feiss (who deserves a credit which he does not receive) on the physiology and mechanics of the spine, in order to map out an intelligent scheme of treatment. I realized that every person during the working day was converted into a scoliotic and that most movements of the body produce the conditions known as physiological scoliosis. I thought we could use this physiological scoliosis as a basis of treatment for pathological scoliosis. I thought that we might produce a scoliosis of a reverse character to the scoliosis already existing. Wolff's law, that function or change of position, is followed by internal and external change in the architecture of the part in question seemed to apply here.

We tried this physiological treatment for scoliosis for years, tried it faithfully and well, and, finally in June, 1914, we had to confess it was a failure. I said "It is impossible to cure the greater by the less." Wolff's law was not sufficient.

In a study of six cases put up in the over-corrected position, on removal of the jackets, two of the patients collapsed. This was suggestive. It seemed to prove that the reverse physiological scoliosis was the best attitude for the health of the patients as regards function of the organs. We learned something from it. I saw that we needed some stronger form of treatment. Metaphorically we need an axe. Operation, however, must be based on the etiological factors that are responsible for the scoliosis.

First of these is the instability of the fifth lumbar vertebra. There is no normal first lumbar vertebra. All are irregular. *Second* the loss of stays. The mast of a ship is held in position by stays. These stays in the human being are the muscles of the spine. *Third* there are congenital anomalies of the vertebrae. To improve the *first* condition: theoretically it would seem correct to put the patient in the Trendelenburg position, enter the abdomen, cut down on the promontory and stabilize the fifth lumbar. None of us have done this. To relieve the *second* condition, viz., the lack of stays, or to relieve the *third* condition, viz., scoliosis due to congenital anomalies the operation of choice is ankylosis.

I think only certain cases are suitable for the operation: (1) Those in which there is a progressive deformity, (2) Those in which there is a correctable deformity. It is possible to increase the height by from three to five inches by physiological correction. In this way we get the best correction possible. We then operate to fix the spine in the new and corrected position.

There are three operative methods: (1) that of Albee, with the bone graft; (2) the Hibbs operation, giving ankylosis from vertebra to vertebra; (3) the operation practised in Montreal which has been devised in order to secure a firmer and a stronger ankylosis. We must get a very firm vertebral union. The greater the length, the greater the strain. An operation suitable for an early case of Potts' disease may not be applicable for twelve vertebrae. In my first ten cases in Montreal we had no deaths. All showed marked improvement in height and general condition.

Conclusions.—Operative procedures have not been proved to stand the test of time. Operations are still in the experimental stage. We do not think operation is justified unless to prevent late and serious deformities or organic lesions resulting from deformities. We feel that in severe progressing scoliosis we are justified in doing what is really a life-saving operation.

DR. REGINALD H. SAYRE, New York City: The treatment of scoliosis has been a bugbear. I think it is preventive rather than curative. One of the worst cases I ever saw was one of a little girl, whose mother noticed she was slightly out of plumb. She brought her to my father. Treatment was neglected and later she became one of the most extreme cases I ever saw. Nothing can straighten these cases later, but you can prevent the gross deformity occurring. Twenty years ago I tried to straighten out a patient under an anæsthetic. I broke one rib without moving the vertebrae. Hope did a serious operation, chopping out ribs and so on, but we never saw the patient afterwards. It is a serious operation, something like stabilizing the fifth lumbar by an abdominal incision! Most cases of scoliosis

would reject such an operation. Hibbs twists the patient by traction, and then fuses the spine to anchor it. I wonder whether the patients are any more comfortable than with the normal mobility of the scoliotic spine. Is the stiff spine worth while? I believe that structural abnormalities, extra ribs, irregular fifth lumbar, etc., are at the bottom of many cases of typical scoliosis. By supporting patients during the period of bone growth, you can do much to prevent frightful deformities later on, just as you support a child with bandy legs to keep it from getting worse.

DR. RALPH R. FITCH, Rochester: The great majority of cases of scoliosis are due to imperfections in the development of vertebræ, especially of the fifth lumbar vertebra. Non-operative treatment is often unsatisfactory. We are in the experimental stage of operative treatment. We should operate only upon those patients whose condition grows worse in spite of prolonged non-operative treatment.

DR. JAMES W. SEVER, Boston: I think Dr. Whitman is unduly pessimistic as to routine treatment of scoliosis by exercise and jackets. Operative treatment should not be done except in cases where adequate jacket treatment has been used for a long time. His cases have reached growth, and at that time structural deformity does not increase. They could be held by a jacket or brace. After growth is reached there is a long period of non-progressive deformity until after 40 or 50, when probably they will have to be supported by a brace again. Dr. Whitman spoke about the primary curve. What is that and how can it be identified? There is generally a double curve and I can't see why the secondary curve won't be worse after fixation of the first one. In regard to rotation which Dr. Forbes spoke of, that is a compound motion, and if you destroy it in the individual vertebræ, the spine will rotate as a complete segment. None of the cases have been followed up for long enough periods of time to determine end results. I saw one case after infantile paralysis where the deformity had increased badly. The bridges were burnt then. I am sorry there were no pictures of the patients bending forward to show rotation.

DR. ARMITAGE WHITMAN, New York City: I am in accord with almost every criticism that has been made. Dr. Forbes has stated that there is no normal fifth lumbar vertebra. I have not found in this series any fifth lumbar vertebra so strikingly abnormal as to appear to be the original etiological factor.

I have specifically excluded cases caused by anterior poliomyelitis. The cases described were all cases of progressive deformity. They were all improved as far as possible by corrective jackets, and by recumbency upon the convex stretcher frame, before operation.

Dr. Sayre has spoken of the inconvenience of a stiff spine. The patients do not notice the stiffness, and as far as any secondary effects of this extensive ankylosis go, I can only say that their general condition has much improved as a result of the corrective and operative treatment.

While I object quite as much as Dr. Fitch to the term "idiopathic" I have used it simply for the sake of convenience, to exclude all cases known to be secondary to a definite primary cause.

Dr. Sever has spoken of my glib assumption that the primary curve is that in the dorsal region. I am sorry that I have given the impression of being glib. As far as the assumption goes, the dorsal curve is that which is first noticed by the patient, which is first evident on physical examination, and which is first evident in the X-ray, at least in the cases of this series.

I do not advocate indiscriminate operation, and believe that the cases should be very carefully selected. They should be cases of progressive scoliosis arising from no definite cause in which all conservative methods have been tried and proved ineffectual.

These cases are not reported as end results, but we hope that they represent a step forward in the treatment of this perplexing deformity.

PROCEDURES FOR THE IMPROVEMENT OF IMPAIRED FUNCTION OF THE KNEE JOINT DUE TO EXTRA ARTICULAR CAUSES.*

By RALPH R. FITCH, M.D.,
ROCHESTER, N. Y.

THE knee joint is a true hinge joint. A hinge to work smoothly and last as long as normal wear and tear will permit, must swing in its own true plane without being subjected to strain, which it is unfitted to endure.

Many knees wear out prematurely owing to strain which is thrown upon them by weak or flat feet, or by too great body weight. These purely static conditions will not be discussed in this paper, nor will that large group of cases sometimes referred to under the heading of "Internal Derangement of the Knee Joint" be taken into consideration. Our attention will be directed to conditions outside of the knee joint, which impair or destroy its function.

Bowlegs and knock knees of rachitic origin may cause severe knee symptoms in later life. This fact furnishes one of the chief arguments for the correction of such deformities in early life. Knock knee, of even moderate degree, is sometimes responsible for slipping patella, *i. e.*, recurring outward dislocation of the patella. The latter condition at times becomes a very disabling

* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 20, 1922.

handicap, throwing the patient to the ground without warning. Bandages and knee caps are entirely inefficient to prevent a patella from slipping sideways. If the degree of knock knee be marked, an osteotomy of the femur to bring the line of pull of the quadriceps and patella tendons into the same axis may be necessary. This procedure, however, is seldom required. Gallie of Toronto prevents patellæ from slipping outward by means of transplanting a band of fascia to make a ligament running from the inner border of the patella to the internal condyle of the femur. The question naturally arises—Will not this tendon stretch? Gallie has shown experimentally that fascia does not stretch. Patients operated upon by this method and examined many months after operation have had no return of symptoms. An operation devised by Goldthwait of Boston to prevent outward slipping of the patella is based upon better mechanical principles than the preceding operation in that it prevents such slipping by improving the line of pull of the quadriceps and patellar ligaments. This is accomplished by splitting the patellar ligament vertically, freeing the outer half of the tendon from the tibia, or better, by removing a small piece of the tibia embodying the ligamentous attachment, and after passing the freed tendon posterior to the intact portion of the tendon, reattaching it in a bed prepared to receive it on the inner surface of the head of the femur. Fig. 1.



Goldthwait

FIG. 1

Let us now consider the effect of fractures of the leg and of the thigh upon the knee joint. Badly united fractures of the lower leg will sooner or later cause impaired function of the knee joint, owing to undue strain from incorrect weightbearing. The progress of such impairment may be slow, but is none the less certain.

It may take months or years to cause much handicap to the patient, but if he be a wage earner the handicap is likely to be too great in the fight for a livelihood.

Spare no trouble in securing proper alignment in such fractures. It is much easier to properly hold a fresh fracture than it is to correct an old one. However, malunions have occurred and always will occur. When they do occur, and granting the absence of extraneous contraindica-



FIG. 2



FIG. 3



FRACTURE OF TIBIA HAS BEEN BLOCKED OUT
FIG. 4

tions, they should be corrected before the inevitable joint changes from strain take place.

Malunion of fractures near the ankle primarily cause strain upon the joints of the foot and ankle and secondarily upon the knee joint. Fig. 2 shows a rather extreme degree of the commonest type of malunion near the ankle. Fig. 3 shows correction of this deformity by osteotomy. Fig. 4 shows a fracture of the tibia and fibula a short way below the knee joint. The general contour of this leg was not bad. The knee, however, was showing distinct signs of strain; pain with weight-bearing, followed by swelling. The X-ray plainly showed the cause of strain. The ends of the bones were chiseled apart; then sawed off squarely, placed in apposition and held there



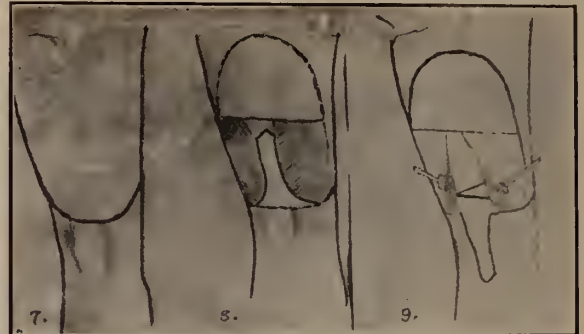
FIG. 5



FIG. 6

by means of a plate. A bone graft would have been better, but the upper fragment was rather short and its lower end very narrow, so it was deemed unwise to do a graft. Fig. 5 shows the result after operation, giving a good weight-bearing line.

Fractures in the lower third of the femur often result in much deformity and consequent strain upon the knee joint. Fig. 6 shows the result of a compound fracture of the femur in a boy ten years of age. The X-ray was taken eight years



after the accident and shows practically an absence of the external condyle, resulting in extreme knock-knee associated with great disability. Most knock-knees can be corrected by osteoclasis or subcutaneous osteotomy, but in this instance the deformity was so great that another procedure was decided upon. An U shaped incision was made over the anterior surface of the knee as shown in Fig. 7. The quadriceps tendon and expansions of the vasti muscles were divided and the femur was exposed. Fig. 8. A wedge of proper dimensions was then sawn from the femur to permit the leg to be brought into proper alignment with the thigh. Fig. 9. (The size of the wedge to be removed had been worked out previous to the time of the operation by means of a paper pattern which had been made from tracings of the X-ray negative. In this way no time was lost during the operation in deciding how much



FIG. 10

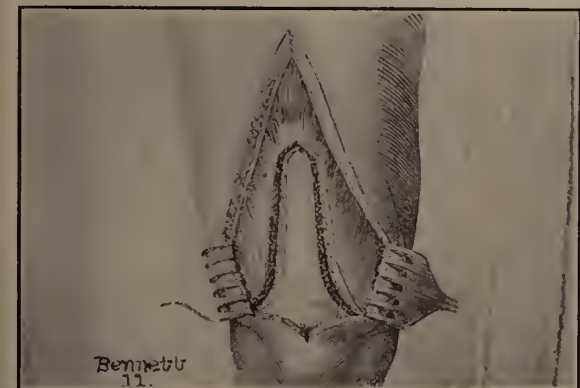
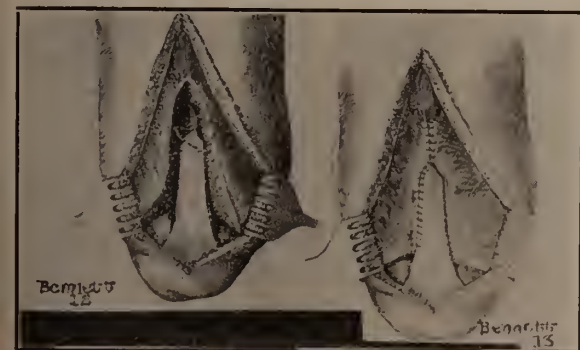


FIG. 11



FIGS. 12 AND 13

bone should be removed). The cut surfaces of the femur having been approximated, position was maintained by one long nail. Then tendon, soft tissues and skin were closed with catgut and a plaster spica applied. Fig. 10 shows the post operative result. It would have been desirable to have brought the axis of the joint line to more nearly a right angle with the axis of the femur but if this had been done a bow leg would have resulted.

Many a person has a knee joint with little or no motion following fixation, which was more or less necessary in the immobilization of a fracture of the femur. Many attempts have been made, and are still being made, to mobilize such knee joints by forcible manipulation, brisement *forcé*. Very little success attends such efforts. X-ray examination of such knee joints usually reveals no pathology in the joint for the very good reason that none usually exists therein. The chief causes of the limitation of motion are first, shortening of the quadriceps tendon and second, thickening of tissues in the region of the quadriceps pouch and the adherence of such tissues and the crureus muscle to the femur.

In the *Journal of Orthopedic Surgery* for September 1919 Bennett of Baltimore described an operation for the correction of this condition and reported three cases in which he had operated successfully. The same author has another article on this subject in the *Journal of Bone and Joint Surgery* for April, 1922, in which he records nine other cases.

The operative procedure is briefly as follows: Expose the quadriceps tendon by a long vertical incision over the anterior surface of the thigh and divide the quadriceps tendon and attachments of the vasi muscles as shown in Fig. 11. Flex the knee, Fig. 12, and suture the tendon as in Fig. 13. Close the wound with catgut and put the leg, flexed about 85°, in a cast. This sounds very simple, and is, especially when the limitation of motion is due solely to shortening of the quadriceps tendon. My experience is limited to two cases. One of them presented no difficulties. In the other case after the quadriceps tendon had been divided and an effort made to free the adherent tissues from the femur, considerable force was used to flex the knee. Flexion was obtained, but at the expense of a rent about 2 centimeters broad extending most of the way across the anterior aspect of the knee joint. This rent was closed by means of a flap which was secured from the tissues of the obliterated quadriceps pouch. The operation was completed as described above. To my surprise this patient obtained 80° of useful, painless motion.

This method of mobilization of stiff knees is, of course, not applicable to cases where the stiffness is due to pathology within the joint, but it should always be taken into consideration in the mobilization of stiff knees following fixation for extra-articular lesions.

When a patient's presenting symptoms are referred to the knee, don't expect to find the cause of such symptoms in the knee itself. To be sure they may arise within the joint, but more likely than not they will be found to be due to extra-articular conditions, such as have been mentioned above, or to even more remote causes such as hip and low back conditions with concomitant referred pain.

SURGICAL TREATMENT OF LARYNGEAL CANCER WITH AN ANALYSIS OF SEVENTY CASES.*

By JOHN EDMUND MacKENTY, M.D.,
NEW YORK CITY.

INTRODUCTION.

I AM convinced from personal experience that the operation of total laryngectomy for the cure of intrinsic cancer of the larynx should take a foremost place in the surgery of cancer in general. In no other location in the body have the results excelled and in few have they even approached those in the field under discussion.

From this assertion the surface cancers might be excepted since their less difficult and earlier diagnosis give surgery and radium an opportunity not secured to cancer in other and deeper parts. Though technically speaking cancer in the larynx may be classified as a surface disease, clinically, on account of its hidden position and high malignancy, it deserves a place with the so-called deep-seated cancers.

The failure in the past to cope with this horrible death—and I can conceive of no ending more disgusting or more painful—was due to the inexperience of the general profession. An operative mortality of over 30 per cent and the high percentage of recurrence did not encourage either the surgeon or patient to face the ordeal. A high degree of supineness fell upon the profession expressing itself in pessimistic utterances often. I regret to say, from those who should have been foremost in leading the fight. The loss of voice incident to the removal of the larynx was a stumbling block to both doctor and patient. They seemed to ignore the fact that loss of voice was inevitable, in the progress of the disease coming long before its fatal termination.

Coupled with this was an almost total ignorance on the part of the public on the one very simple manifestation of laryngeal cancer, *i. e.*, hoarseness or change in the quality and character of the voice in the middle years of life. If this one simple manifestation could be branded on the consciousness of the practitioner and of the public alike thousands of cancer victims could be saved yearly.

If we except the rare fulminating malignancies in which all effort is generally futile, intrinsic cancer of the larynx is in its beginning and often in its more developed stage, still a local disease. It is cut off to a considerable degree from the lymph channels of the neck by a cartilaginous wall which acts for a time as a barrier to extension. Two vulnerable directions of extension exist—one backward toward the œsophagus, and one upward toward the epiglottis and lateral hypopharynx. Rarely in the early stage does

the disease extend directly through the cartilage to the tissue of the neck.

After many years of observation and operative effort in this field one can with fair precision prognosticate the ultimate result in any given case.

The factor tending towards an optimistic outlook may be set down as follows:

1. Slowness of growth.
2. Freedom from involvement of the posterior part of the larynx.
3. Superficial growth. Cancer starting in the deeper layers of the larynx may not be more malignant but they often escape detection until well developed.
4. Extension forward and downward rather than upward and backward.
5. Age of patient. Cancer in the late thirties or early forties is more malignant than in later life.

Arytenoid involvement in my opinion places the disease on the borderline of the extrinsic class and tremendously lessens the hope of cure. Biopsy for diagnosis is to be avoided if possible. It has been resorted to only a few times by me in eighteen years principally where syphilis masked an underlying cancer. In these luetic cases the suspicion of malignancy was confirmed by biopsy.

The diagnosis should be made on the history, appearance, behavior of the growth and on the exclusion of syphilis and pulmonary tuberculosis. It may seem trite to state that the loss of motility in the affected cord is almost a pathognomonic symptom of cancer. This is due to fixation of the musculature by infiltration. The disease attacks one or other cord generally in its middle third. I have seen no primary involvement of the interarytenoids space so characteristic of tuberculosis. The Leitz Arc Lamp is of great assistance in securing a clear definition of the disease.

The extent of the growth must not be estimated by the image seen in the laryngeal mirror or even by the more accurate impression secured by direct laryngoscopy. The upper edges of the growth is all that appear for inspection, the extension downwards and outwards being hidden from view. Growths of deep origin are the most deceptive. I believe that it would be quite safe to add two-thirds to the visible growth in forming a mental picture of its size.

Formerly when in doubt on the extent of the disease, I advocated opening the larynx for better orientation. I am now opposed to this procedure and believe that it should be avoided since the incision may bisect the growth and disseminate it. Furthermore, this procedure may and often does let blood into the trachea and adds just that much more to an already serious and dangerous operation.

If doubt exists in the operator's mind as to the

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extent of the growth the patient should be given the benefit of that doubt in having the more radical operation done.

It is my firm belief, founded on experience, that only the most incipient cancers should be treated by any method other than the most radical.

Statistics will bear me out in asserting that secondary operations for cancer are almost futile in any field. You have but one shot for a bull's-eye and if you miss the patient pays with his life.

Therefore I assert, if we are to get anywhere with this terrible disease, we must divorce our minds from a lot of sentimentalism born mostly of inexperience relative to the so-called pitiable plight of the laryngectomized patient. I have been in intimate contact with these so-called victims for years, have seen them in their business and social lives and have observed nothing but cheerfulness and gratitude on their part at their deliverance from certain death. My experience is leading me yearly further away from compromise in dealing with intrinsic cancer of the larynx. It has also taught me to leave the frankly extrinsic cases to their fate. For five years I have so stood. The extrinsic cases done prior to that time have all since died of cancer, so have many of the window resections and hemi-laryngectomies.

Here I might digress and say a word on some amazing statistics of cures by thyrotomy and even by excision under suspension. Is it possible that the general profession in the regions from which these statistics emanate is more enlightened and more alert in the detection of laryngeal cancer than we are in New York and its environs? To believe this would surely be unpatriotic, even if it were not very improbable. Why do we in New York so rarely encounter the incipient case seemingly so common elsewhere? If total laryngectomy on early intrinsic cases has cured in my hands, say, 66 per cent, why does thyrotomy and suspension excision yield in other hands even a larger percentage. If true, then the part must be greater than the whole.

The question must arise in the unbiased mind: Are we laryngologists facing the surgical facts in dealing with laryngeal cancer or are we compromising with the patients' fears and desires.

Surgery in other fields for cancer strikes wide of the disease. Do you believe that the general surgeon would be content with a quarter of an inch leeway on a malignant growth or feel that he had accomplished his duty in so operating? Those who advocate thyrotomy and suspension removal for the majority of laryngeal cancer seen by them must be operating with even less than a quarter of an inch leeway.

We laryngologists have much to atone for in our past. Witness the long and footless discus-

sion on the relative merits on tonsilectomy versus tonsilotomy. Think of the years it has taken to place sinus disease where it now stands. Do you realize that thousands of submucous resections and partial or total turbinectomies are even now being done for nasal obstructions due solely to sinus disease and tonsillar infections. It looks as though we are learning little from the past and are still stuck in the mire of tradition on this question of the best method of dealing with laryngeal cancer. My personal position on this question is that thyrotomy is rarely indicated, that radium is on trial and that total laryngectomy is the logical, safe and tried procedure of choice.

STATISTICS

Six hemilaryngectomies were done prior to 1916-17. Two are now living. Four died of recurrence within two or three years of the onset of the disease. The two surviving cases were operated at a very early stage. I now know that the others should have had a total laryngectomy as they were not incipient cases as I now understand the term.

Thirteen total laryngectomies were done prior to 1916-17. Two of these were diabetics and succumbed to the operation. Six were advanced intrinsic cases with involvement of one or both arytenoids. Four of the six died of recurrence. Two are still living. Three were intrinsic cases (arytenoids free). One of these cases died from a recurrence, one from nephritis one year after operation and one is still living.

The extrinsic cases with involvement of the arytenoids, the anterior lip of the mouth of the œsophagus or the glands of the neck, have all died of recurrence.

Twenty thyrotomies were done between 1906-1920. Eight of these had the growth removed leaving the cartilaginous wall. Seven died of recurrence, one is still living. In 1911 the window resection was taken up. Twelve were operated on by this method. Eight of these had recurrences and died. A subsequent total laryngectomy failed to save three of the eight. Four are still living, two after three and two after two and a half years.

Looking back upon this series, I am convinced that but few of these twenty cases were subjects for anything short of total laryngectomy. With my present experience several might have been saved by the more radical operation, since many of them were well beyond the incipient stage, yet intrinsic.

Since 1916-17 only two thyrotomies have been done, both on extremely early cases. As stated above they are still living without recurrence after two and a half and three years.

Since 1916-17 I have seen 143 cases of laryngeal cancer. Forty-six of these were still intrinsic and gave some hope of permanent cure.

The disease was confined to the laryngeal box. The arytenoids were partially involved or not involved at all. Three cases were truly incipient and might have been suitable for thyrotomy. In the ninety-seven remaining cases the disease had extended beyond the larynx in various directions. In many the glands of the neck were palpable.

Thirty-one out of the forty-eight intrinsic cases came to operation for total laryngectomy and two for thyrotomy. In these thirty-three cases there were no surgical mortalities. There have been no operative deaths since the two reported five years ago. Twenty-nine were done by the one stage operation; two by the two stage operation. Twenty-five have entirely discarded the tracheal canula, an advantage rarely experienced in the two stage operation.

One case of sarcoma appears in this series. The oldest case was eighty, the youngest forty-one. Two were females. Primary union was secured in only five. A large defect occurred in two requiring a subsequent plastic. Since three years no plastics have been necessary owing, I believe, to improvement in the operative technique and to better management of the post operative infection.

The series reported in 1916-17 were mixed cases, some advanced, some early. The thirty-three since that date are all fairly early cases. All extrinsic cases were rejected, for the good reason that in ten years of surgical effort, from 1906 to 1916 I have not succeeded in ultimately saving one. I am convinced that all extrinsic cases of cancer of the larynx cannot and never will be curable by surgery.

Twenty-six of the thirty-three cases are still alive with no evidence of recurrence. One died at eighty-four years of age of pneumonia. One died two years after the operation of cerebral hemorrhage.

One of the most hopeful died of recurrence three years after the operation and four cases in which the disease was well back toward or partially involving the arytenoids have succumbed to recurrence within two and a half to three years from time of operation. Fourteen cases out of eighteen show no recurrence after a period of from three to five years.

If five more cases in this series of thirty-three should succumb to cancer, making in all ten cancer deaths in thirty-three, we would still have a percentage cure of 66 per cent, a showing quite worth the effort.

TECHNIQUE

Since my last publication on this subject over five years ago, the operative technique has been improved in several points though the rationale of the operation is essentially the same. The troublesome plastic repair for closure of the hypopharyngeal defects in the earlier cases have

been almost entirely eliminated in the latter ones. Convalescence has been materially shortened. Though some infection in the wound is the rule I do not now so often see the extensive gangrenous sloughing which made a few of the earlier cases so difficult. In 31 consecutive total laryngectomies and two thyrotomies neither mortality nor serious complications have occurred. The shortest wound healing was ten days and the longest five weeks. Twenty-nine were done by the one stage operation. Two required a preliminary tracheotomy. Twenty-five have been able to dispense with the tracheal canula. In 3 it must be retained since the tracheal opening collapses when the tube is removed. Three could dispense with the canula but fear to do so.

The two stage cases cannot dispense with the canula as the tracheal rings at the opening were destroyed by the tracheotomy. To secure a tracheal and skin union with the tracheal ring immediately beneath is one of the aims of the one stage operation. This gives a rigid opening, dispenses with the canula and adds immensely to the patient's future comfort. After no two stage operation have I seen this result secured.

I have been much gratified with the speech results. All but one of the cases have developed a whisper audible at several feet in a still room. One operated seven years ago has acquired loud speech and can talk over the telephone. He can count up to twenty on one stomach full of air. In some way, known only to himself, he opens his oesophagus, fills his stomach with air and makes audible speech by expelling the air slowly. Several are engaged in large enterprises which they conduct as successfully as they did before their operation. Some have informed me that their stenographers take their dictation with ease. They do not complain of discomfort during the cold months, not even in Canada. To protect the lungs against cold, dry air, a bulging wire screen covers the tracheal opening and extends several inches down and across the chest. Above this a high, soft collar is worn to exclude the external air. The patient breathes the warm, moist, air coming from beneath the clothing. This simple device has done much to protect the trachea and lungs during the cold months.

The surgical period may be divided into three stages:

1. The preparation.
2. The operation and its technique.
3. The after treatment.

1. *Preparation.*—Two deaths have occurred in seventy operations. These were among the earlier cases before a rigid examination and preparation were instituted. These deaths were due to sugar retention. One was a frank diabetic and was treated by the more or less crude method then at our disposal. The false assumption was that a sugar free urine put the patient in a safer

operative state. He died of an ischio-rectal infection (three weeks after operation), secondary to a general septicemia. The other death occurred in an individual with a normal urine. The history pointed to a glycosuria occurring two years previous to the time of operation. The condition following operation pointed to diabetes. A blood chemical revealed retention with a high sugar index. He died of septic broncho-pneumonia.

The lesson learned from these deaths has since saved several cases from a similar fate. This leads up to the first point in the period of preparation. The patient is put in the hands of a metabolist who sees that he is chemically balanced. If retention exists, especially of sugar, treatment is instituted. If sugar cannot be brought to a safe level, the case is rejected. Several cases have thus been brought through which under less careful treatment might have succumbed. It is gratifying to observe that this procedure is now extending to all branches of surgery.

Where the heart is weak, digitization is a very essential part of the preparation. Special attention is paid to the colon. For one week preceding the operation, every other day a weak carbonate of soda enema is given followed by a saline colon irrigation. A low protein diet excluding eggs, beef and sweet milk, is essential in all cases for a week or two preceding the operation.

A competent dentist extracts all carious teeth and pyorrheal teeth and cleans those remaining. So essential is this that it should be entrusted to only the most expert and conscientious. Where all teeth are absent a primary union in the wound may be expected. The neck infections from a filthy mouth may take on the picture (so seldom now seen in surgery), of hospital gangrene. It occurred in a few of the earlier cases. Healing after such an infection leaves a tremendous gap in the throat and has in several cases required an extensive plastic for repair.

Before undertaking a plastic repair the wound must be entirely clean and cicatrized. Impatience to secure a quick closure dooms the whole procedure to failure. Here it is essential to use local anæsthesia since the vomiting incident to a general anæsthesia is very liable to cause infection.

Adhering to these principles, I have succeeded in closing the defect in all cases in one operation. The feeding tubes must be used as described in the operation. If sinus disease exists every effort should be made to make the nasal cavities as clean as possible, not by operative methods since this but stirs up a latent infection, but by suction and suction douche twice daily during the period of preparation. It is some consolation to know that many of these old sinus infections are not very virulent.

It is my custom to give bicarbonate of soda for a few days preceding the operation.

2. *The Operation and Its Technique.*—The surgical principles to be kept in mind may be taken up under the following headings:

1. Anæsthesia.
2. The prevention of the inhalation of blood.
3. Cleansing and disinfection of the mouth, pharynx, nose, hypopharynx and the prevention of their secretions from contaminating the wound.
4. The secure anchoring of the tracheal stump.
5. Drainage.
6. Method of closing the wound.
7. Method of excluding the wound from the tracheal secretions.
8. The proper placing and securing of the feeding tube.

1. *Anæsthesia.*—A combination of local and general anæsthesia is in my opinion better than one of these alone.

By this method the duration of the general anæsthesia is reduced to one-half hour, an important factor in the resistance of the patient.

Where the growth encroaches upon the breath-way the giving of the general anæsthesia from the start may increase the embarrassment and force a tracheal opening before the surgeon is ready. If the patient becomes cyanosed and is not promptly relieved, the consequent lung hyperæmia may predispose him to a post operative pneumonia. Hence the advantage of skeletonizing the larynx and upper two or three tracheal rings under local anæsthesia before the general anæsthesia is given. One per cent novocaine is used for the skin and one-fourth of one per cent for the deeper structures. To this is added a very minute amount of adrenalin.

The T incision is used. It has many advantages over the linear incision. In fat necks it is indispensable. It lends itself better to drainage. The angles where the lines cross can always be made to heal by primary intention, thus preventing post operative fistula by closing the upper central portion of the wound.

The dissection is carried backward until the larynx and trachea are skeletonized. When hæmorrhage is complete and all vessels tied, the patient is given a general anæsthetic. The trachea is now cut across just below the cricoid, taking minute care that no blood enters the lumen of the tube. It is an advantage to inject between two rings into the trachea before dividing it, a few drops of 10 per cent cocaine solution. This prevents coughing. The larynx is lifted forward and the posterior wall of the trachea is incised down to the œsophageal wall. A rubber tube which fits snugly into the tracheal lumen is inserted into the trachea to a distance of about two inches. This acts as a tracheal extension, turns back the blood and enables the

anæsthetist to continue his anæsthesia without being in the way.

The larynx is separated from the œsophagus from below upward to a point behind the arytenoids. Then it is allowed to fall back into position and the thyro-hyoid membrane is divided, opening into the hypopharynx just below the attachment of the epiglottis. Before this opening is made, the anæsthetist or an assistant opens the mouth wide, sucks out all secretion and paints the entire cavity, the pharynx and the hypopharynx with a 2 per cent solution of mercurochrome. Iodine on mucous membranes causes desquamation and predisposes to infections.

The nasal cavity is similarly treated. The edges of the opening through the thyro-hyoid membrane are grasped and held apart. A yard of gauze folded two inches wide is stuffed into the hypopharynx and crowded upwards until it fills the mouth and pharynx. At this point a careful inspection is made of the growth. If it is found to be entirely intrinsic the larynx is removed by cutting as close as possible to the superior border of the thyroid cartilage. The opening thus made in the hypopharynx is small and better lends itself to successful repair. If the disease has approached the top of the laryngeal box or has involved the arytenoid, then more tissue is sacrificed even to the removal of the anterior œsophageal wall adherent to the posterior surface of the larynx. In several cases one to two inches of this anterior part of the œsophageal lumen has been taken away with the larynx without producing subsequent stricture.

Just before the last stitch is tied in the closure of the hypopharynx, the anæsthetist removes, through the mouth, the gauze packing filling the mouth and the pharynx. The mouth and pharynx are again cleansed by suction and again painted with a solution of mercurochrome (2%). A feeding tube of a size which will pass through the nose without undue pressure is passed through the more open side of the nose. When its point appears in the œsophagus beneath the untied stitch the surgeon directs it into the œsophagus to a depth of six inches. The point of exit from the nose is now carefully marked and the tube secured to the face by adhesive plaster.

The last stitch is now tied. If the redundancy of the tissues permits, a second layer of stitches is placed over the first in the hypopharyngeal closure. No. 1 plain gut is used.

The trachea is raised to the skin level of the neck by two or three stay sutures, each passed around a ring and brought out about one inch from the edge of the wound. These are tied on small perforated lead discs. This steadies the tracheal stump in the wound and relieves the strain upon the stitches which are to unite the

skin edges with the mucous membrane of the trachea. To make this union more exact the fat along the skin wound edges on both sides is cut away. This allows the skin to fall more easily into relation with the edge of the tracheal stump. The skin strip and edge of the trachea are united by interrupted stitches using fine silk or better, fine aquisetene. The wound is loosely closed, no effort being made to bring the deeper parts into anatomical order. It is essential to get primary union at one point, that is where the two lines of the T cross. I have observed that if the integrity of this part of the wound can be maintained, the subsequent healing is much more rapid and hypopharyngeal fistula does not occur. If this point breaks away or, for the securing of better drainage, has to be opened, an effort should be made as early as seems prudent, to again bring those angles of the T into place.

Silver wire here serves better than any other suture material since it may be left in situ for a long time even in the presence of infection.

A tube and gauze drain are passed into the depth of the wound at the ends of the bar of the T. Just above the point where the trachea is secured to the skin two small gauze drains are placed, one on either side. This guards the direct route of the mediastinum.

A large tracheal canula (36) is wound with gauze impregnated with bismuth paste. The winding is so fashioned as to form a conical cork. This is inserted into the trachea and should fit as a cork does a bottle. The object of this corking the trachea is to prevent tracheal secretions from contaminating the wound from below and to turn back from the trachea any wound secretions from above. It also protects the tracheo-skin union. It has been in my hands a very serviceable device, especially later if infection arises and wound drainage becomes profuse. Without this tracheal plugging lung infection would be almost inevitable.

The wound is dressed in the usual way. A rubber apron is placed over the end of the canula and catches all tracheal secretions.

During the repair period of the operation the patient is given little or no anæsthetic. Deep anæsthesia is imperative only from the time the trachea is opened until the hypopharynx and œsophagus are closed.

After Treatment.—The immediate treatment usual after any major operation is carried out. I will speak only of the conditions peculiar to this operation. It is here that the skill and experience of the surgeon are often taxed to and even beyond their limit. The after treatment in laryngectomy cannot be delegated to an assistant or a member of the house staff. Painstaking, constant care on the part of the surgeon is the only key to success. If infection occurs the surgeon must be at least one jump ahead of it. The

reverse means almost certain death to the patient. I attribute the prohibitive surgical mortality of a few years ago in laryngectomy to four causes, *viz.*, careless preparation of case, prolonged general anaesthesia, carelessness in the prevention of blood entering the lungs during the operation and mismanagement of the septic infection so common after operation. Another factor may be added. Rectal feeding and drop feeding by mouth were depended upon prior to my demonstration that the œsophagus would tolerate a permanent tube for weeks. Rectal feeding was one of the greatest fallacies that ever became rooted in the professional mind. It died a very long, hard death and I, for one, sincerely hope that it is dead indeed and forever.

The local reaction in the neck is considerable and may simulate infection. If doubt exists in the surgeon's mind he would do wisely to extend as widely as possible his drainage openings and keep a wary eye out for extension along the muscular planes of the neck. If this occurs it must be followed and opened widely.

Later if pus becomes profuse and if a break takes place in the œsophagus suction, to remove these secretions is of inestimable value. Tubes are placed at the bottoms of the pockets and through the opening in the œsophagus. These project through the dressing and the nurse applies suction to these tubes as frequently as is indicated. Dakins Solution has been useless in these cases since it may get into the trachea and cause intense irritation. I prefer a 2 per cent mercurochrome solution used sparingly.

If, as sometimes happens, trachitis follows the operation suction applied through a catheter unloads the trachea and prevents gravitation pneumonia. With the larynx gone normal expulsive cough is obliterated hence the impossibility on the part of the patient to unloading his trachea and bronchi. Here suction carefully and properly applied has, in my hands, saved many lives not only in this operation, but in all conditions where the trachea is open and the broncheal tree loaded with secretion.

Feeding.—Much of our success in piloting these cases across the post operative period is due to the permanent feeding tube. Feeding to the point of toleration discourages septic infection. Of what avail are the feeble efforts of the surgeon against infection in a starving patient. For over twenty years I have used this method of feeding without one untoward result traceable to its use.

At first, expecting œsophagitis, I used it gingerly and for short periods. I could get no information on the subject excepting that all seemed afraid of it. In Vienna in 1911 it was not used and the men in this work advised against it. The drop method of feeding was employed. They would not discuss its merits

with me or be influenced by the years of my practical experience as I was an American.

Feeding is begun just as soon as the anæsthetic period is over. For two days from one-half to two-thirds the calorie requirements are given, then the amount is increased to tolerance.

Any well balanced diet capable of being reduced to a fluid or semisolid may be used. I append two diet lists founded on the calorie requirements of a normal individual of average weight. Fruit and vegetable juices are essential and must not be kept out of the dietary longer than five or six days. Gravitation serves for ordinary liquids. For thicker ones, the piston syringe may be used. The patient being propped up in bed, the food is very slowly introduced. After each feeding (which may be once in two and a half to four hours) a few ounces of water are passed through the tube to cleanse it. Several times a day the pharynx is cleansed of mucus by suction and the mouth and teeth cleansed with mouth wash and brush. Dressings are changed as often as need be to keep the wound free from secretions. In foul cases the wound packing may require several changes in twenty-four hours. The patient must be shifted from side to side and encouraged to sit propped up in bed.

COMPLICATIONS

1. *Pneumonia.*—The entrance of blood into the lungs during operation and prolonged deep anæsthesia are the two most noteworthy causes of pneumonia. One case of broncho-pneumonia occurred in my series. It was in a diabetic and proved fatal.

2. *Mediastinitis.*—This is said to be one of the dangers of this operation. It has not appeared in my cases. Liberal drainage at the time of the operation and free opening of the wound at the onset of infection must materially minimize this danger.

3. Extensive gangrenous sloughing of the wound may produce great debility but has not in my experience caused death. On the other hand it has perhaps saved life by eradicating more efficiently than the knife, any wandering cancer elements in the neck.

4. *Hiccough.*—A troublesome hiccough has occurred in four of my cases following total laryngectomy. In only one did it develop a serious aspect. In this case small doses of apomorphine controlled it after all other means failed. It is probably due to irritation of the vagus nerve in the operated field.

5. *Hæmorrhages.*—Secondary hæmorrhage immediately following operation is due to a defective technique on the part of the surgeon. I have made it a rule that all clamped points in operation in the neck, must be tied. If a good pedicle cannot be secured for tying then a transfixion stitch is used.

Secondary hæmorrhage from sloughing rarely occurs from a large vessel since the walls of the larger vessels are very resistant to infection. It is easily controlled and not serious unless prolonged. There is a type of secondary hæmorrhage in healing wounds just past the septic stages which is extremely difficult to control. Septic absorption so changes the chemistry of the blood as to convert the patient into a temporary bleeder. The blood becomes thin and clots poorly. In this state of the patient the granulating surface of the wound may bleed profusely. The granulations at the point of bleeding should be curretted away and the patient transfused. Perhaps repeated small transfusions act better than one large one. I have witnessed this complication in one case recently. It did not yield to transfusion. The bleeding lasted for two weeks, the hæmorrhages occurring about three times in twenty-four hours. It was finally controlled by the complete removal of the over active granulation tissue in the wound.

General Sepsis.—One case in my series died of general sepsis. He was a diabetic. He died three weeks after the operation from an ischio-rectal abscess and gangrene of the peroneum.

Trachitis.—A mild degree of trachitis is frequently observed after laryngectomy. Rarely this may be severe enough to threaten the lungs and produce a secondary broncho-pneumonia. It is here that suction to clear the trachea and upper bronchial tree from secretion is of invaluable aid.

The fight to place laryngectomy on a firm basis both from a surgical and a life-saving standpoint has been an uphill struggle. We have been hampered by an apathy on the part of the profession engendered by the prohibitive surgical mortality in the past and an almost hopelessly large percentage of recurrences.

Prominent men in our midst have decried the operation since failing themselves in its successful performance they could not conceive of its success in other hands. Hopeless cases, often in the septic stage of the disease were operated and forced to pass through two deaths instead of only one had they been left alone.

Radium in the hands of the unscrupulous and the unscientific has beguiled the poor victims to their doom and deprived them of their only chance, an early and radical operation. Scientific observers like Dr. Quick have made no extravagant claims for radium in this disease.

Partial removal of the larynx or attempts to remove the growth by thyrotomy or suspension in cases entirely unsuited to these procedures, have heaped discredit upon the whole procedure.

Finally there has been the failure of the profession at large to realize that prolonged hoarseness in a person of cancer age may be, and very often is the first sign of danger, demanding im-

mediate, intelligent and painstaking investigation by one competent to differentiate between the simple and malignant disease in this field. If cancer has its inception external to the laryngeal box its early detection must be, till more light on this disease is vouchsafed us, of little avail to the victim. In my opinion we are helpless in this situation. Hence the only cases where early detection is of importance are those (the intrinsic) in which hoarseness may be an early symptom.

Permit me in closing to reiterate two statements. Incipient intrinsic cancer of the larynx is a very hopeful disease if we apply to its cure the same horse sense exhibited by the general surgeons in the treatment of cancer elsewhere in the body. The general surgeon operates radically. The laryngectomized patient is not, as many state, only a surgical curiosity, a derelict, a miserable thing apart from all his kind. He is usually a useful, active citizen, capable of continuing his life's work, of supporting his family and realizing, if not to its full extent at least to a large extent, the joy of living.

CANCER OF THE LARYNX TREATED BY RADIUM.*

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and

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IN discussing the use of radium in treating cancer of the larynx several factors relative to this new physical agent must be considered. Radium is not a cure-all, neither is it meant to replace the older methods, but rather to aid and improve them. Its usefulness in the field of malignant diseases in general has undoubtedly made it the greatest single agent at our disposal. At times it, alone, is sufficient to cause a complete regression of disease, while at other times, in combination with surgery, or surgery and X-rays, the greatest good can be accomplished. Certain types of malignant disease respond very favorably to radium, and in these we feel we are well beyond the experimental stage. In other types, either the resistance of the growth itself or various other factors, have made progress slow. Unfortunately, laryngeal cancer belongs in this group, and the present report of our experience at the Memorial Hospital must be looked upon as incomplete experimental evidence rather than a definitely proven method.

We feel, however, that the results to date give definite proof of the value of this agent and warrant the drawing of certain conclusions.

Here, as in other types of malignant disease,

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the work has been carried out almost entirely on advanced and hopeless cases. This is more especially true of the earlier years of the work. Technique is continually changing as clinical information accumulates, so that in comparable cases the work of today cannot be compared with that of one, two or five years ago. For these reasons a report for statistical purposes at present would be both useless and misleading.

The literature on the subject to date gives very little data of value. Reports are invariably of small groups or single cases, are usually incomplete, and deal chiefly with palliative results in advanced cases only.

It is not my purpose here to discuss radium in primary operable cases as compared with the various surgical procedures. While I, personally, offer no apology for treating such cases with radium, I frankly admit that sufficient data is not available on paper to prove the wisdom of such a course.

There are many factors that make us look to radium as a possible advance in the treatment of cancer of the larynx. Leaving out of consideration the so-called operable cases, with all the attendant dangers and disappointments of radical surgery, we still have a vast group in which surgery offers nothing. A considerable percentage of intrinsic growths and—I believe I am correct in stating—practically all intrinsic growths, are inoperable when seen by the laryngeal surgeon. It is from this group, largely, that our radium data must be obtained and in which it offers something more than has heretofore been accomplished.

In applying radium to a laryngeal growth certain difficulties arise which are not met with in other parts of the body. If efficiently applied, radium creates a sharp inflammatory reaction of several weeks' duration, and in the cases under discussion this reaction is just at the vantage point of two body systems. It often interferes with both swallowing and breathing. Hence the danger of impairment of the patient's general health, which is usually already undermined. It is impossible to put the treated part at rest and consequently the factor of mechanical irritation is added. It is very frequently impossible to accurately determine the extent of the disease in these cases. Vision alone is not sufficient aid in satisfactorily examining a malignant growth. Palpation, to determine the depth of neoplastic infiltration, is most important, but except for a few extrinsic lesions, this is impossible in laryngeal work.

CLASSIFICATION OF CASES.

For the proper management of the patient a careful appraisal and classification is one of the first essentials. From a statistical standpoint it is imperative, and it is equally necessary in order

to determine the method of and extent to which treatment with radium should be pushed. For statistical purposes, cases must be divided, of course, into intrinsic or extrinsic, primary or recurrent, and operable or inoperable. For treatment purposes they should be classed as operable or inoperable to radium. The "operable" group should be further divided as favorable or unfavorable, depending on whether a complete regression or only palliative relief can be reasonably hoped for. The group classed as "inoperable" to radium should be left alone as far as this agent is concerned. There comes a time in the treatment of malignant diseases when even the physical agents are of no avail for palliative relief. Unfortunately, a considerable number of laryngeal carcinomas can be relieved only by opiates and tracheotomy. I am convinced that, in our own series, several patients have been treated who would have been better off had no radium been used.

METHODS OF TREATMENT.

Once the decision to use radium has been made, it is essential to decide what can be reasonably hoped for by treatment. Treatment designed to eradicate the disease is attended with considerable discomfort for several weeks at least. The inflammatory reaction causes pain, and may interfere with swallowing and breathing as a result of edema. In bulky extrinsic growths, sloughing and hemorrhage must be reckoned with. A tracheotomy may be necessary before beginning treatment or may become imperative later on. If there is any question as to the necessity for tracheotomy, I am convinced it is best to err on the side of safety and do it early. If there is a reasonable chance to produce a complete regression of the disease, it is then perfectly justifiable to push treatment to the limit and risk putting the patient through a strenuous period of discomfort. If, on the other hand, only palliative relief can be hoped for, then the patient's physical comfort demands first consideration throughout.

RADICAL TREATMENT BY RADIUM.

This is obviously a relative term. We now have a large fund of available information both on the physics of radium and on its action on malignant growths in various parts of the body. Our big problem at present is to apply this information in perfecting our laryngeal technique. The technique of using a scalpel to best advantage has required several generations. Radium must be looked upon as a new instrument with the technique of its application in the making. Too often we see reports of radium applied in the larynx in a manner which signifies utter disregard of available information. We have long since passed the time when a piece of radium

could be placed in the vicinity of a new growth and adequate treatment assumed. Accuracy and, to a certain extent, intimacy of application are essential. Each case must be studied individually and a plan of treatment outlined which will give the greatest intensity of radiation in the diseased area with least damage to surrounding normal structures. The only place where anything approaching a stereotyped method is permissible is in the external radiation. I believe that every case accepted for treatment should receive intensive radiation by heavily filtered radium applied over both sides of the neck and directed toward the primary growth. If sufficient radium is not available to do this properly, then efficient X-radiation should be used as the second choice.

The decision as to the method of internal application is not so simple. In our earlier work we made extensive use of radium emanation tubes filtered by 1 mm. and 2 mm. of platinum placed end to end in small rubber tubing and introduced within the lumen of the cocainized larynx. This provides a very efficient dosage of gamma radiation all about the tubes and serves a useful purpose in intrinsic lesions involving practically the whole of the interior of the larynx. It has many disadvantages. It is difficult even with very strong tubes and in a well cocainized throat to retain the radium accurately in place long enough to give proper dosage unless a tracheotomy has been done. For all extrinsic growths it is purely a gunshot procedure and very inefficient. It furnishes radiation to normal and diseased tissues alike, depending on their proximity to the centre of radiation, and from this, unwarranted damage may result. The method of treatment by intuba-

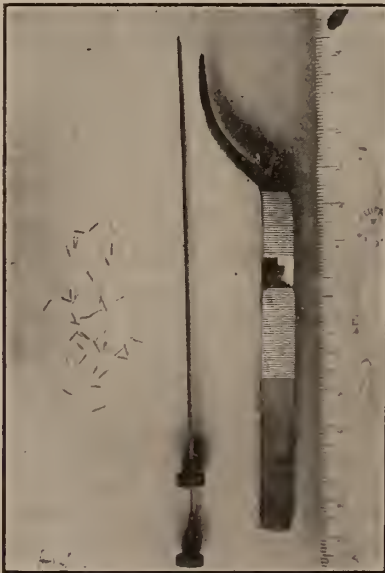


FIG. 1.—Unfiltered tubes of radium emanation used for inserting interstitially.

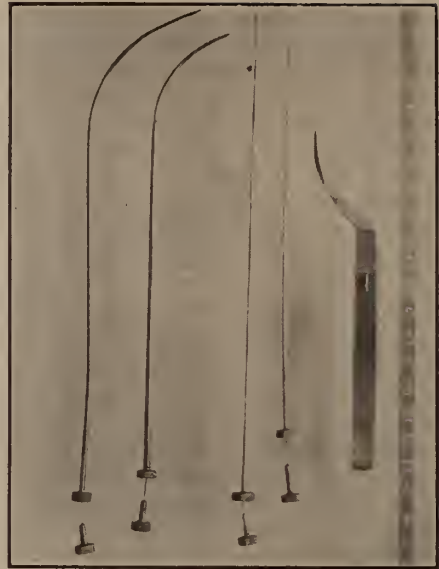


FIG. 2.—Trocar needles used for inserting radium emanation tubes interstitially.

tion, and radium application within this, as advocated by most of the Spanish workers, is essentially the same thing from a physical standpoint and is open to the same criticism.

The greatest advance in our internal treatment has been through the introduction of radium emanation tubes directly into the growth. These are fine capillary glass tubes approximately 0.3x3 mm. in size, containing radium emanation. This emanation decreases in value at the rate of approximately 15% per day. It is evident, therefore, that the exact dosage to be delivered by these tubes can be calculated at the time of introduction. One millicurie of radium emanation buried interstitially and left in situ until exhausted gives a dosage of 132 mc. hrs. The emanation in this form is entirely unfiltered except for the thin wall of the glass tube which removes little more than the alpha rays. Hence



FIG. 3.—2 mm. brass tray to hold tubes for external application over the neck.



FIG. 4.—3 cm. block to afford uniform separation of brass tray from skin.



FIG. 5.—Brass tray clamped in place on block.

the full effect of both beta and gamma rays is obtained and, since the radiation is extended over several days, a larger dose can be given. The tubes are small and readily introduced through fine trocar needles so that accurate distribution can be made throughout the growth, especially toward the deep infiltrating base where most efficient radiation is required. We use curved trocar needles for application by the indirect method and straight needles for the direct method. In the majority of cases I prefer using the direct method under local anesthesia. There is some danger, of course, from introducing mixed infection deeper in the tissues, but this is very slight, especially if care is taken to avoid introducing through the ulcerating surface wherever possible. We have never had trouble from the glass emanation tubes as foreign bodies. They are either expelled and expectorated with minute particles of slough later on or are encysted in scar tissue as a result of the inflammatory process created by the radium. In our earlier work with buried emanation we made the mistake of using tubes of too strong individual values. As a result, very severe reactions with considerable sloughing were encountered. We now feel that such reactions are both unnecessary and unjustifiable. Tubes of approximately 1 mc. each permit of most adequate dosage with uniform distribution and a minimum amount of destruction of tissue. This method is applicable in the majority of intrinsic lesions and in all extrinsic lesions. Apart from the problem of beta radiation obtained, these emanation tubes for laryngeal work have a very definite advantage

over needles containing radium salt, in that they are smaller, cause less trauma, and cannot be dislodged such as a needle with a string at the end might. In addition the whole procedure is over at one sitting and there is nothing left to be removed later.

For a certain limited group of localized, relatively superficial, intrinsic growths, we employ another method of unfiltered radium application to the surface. This consists of a small glass bulb 6 mm. to 8 mm. in diameter, containing 500 mc. or 600 mc. of emanation and mounted in a pro-

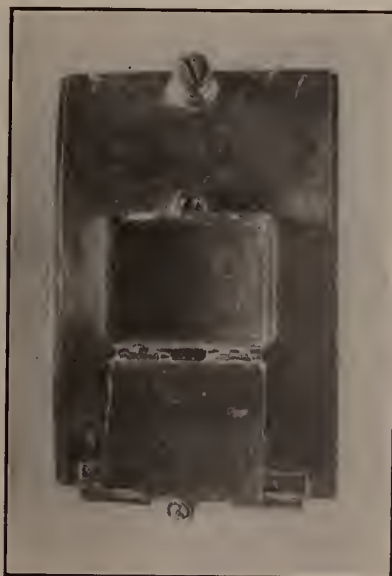


FIG. 6.—Radium pack; 2 mm. brass filtration; for application at varying distances over cervical nodes.

tecting metal cone with paraffin. The cone is open at its base, and to the apex a long flexible wire is attached. This permits of holding accurately in place by the indirect method a very large quantity of unfiltered radium emanation for a time long enough to give an intensive dose. A few minutes is sufficient and, in addition to accurate localization, the surrounding normal tissues are protected from injury.

In the application of any or all of these methods to a favorable case, maximum doses should always be given. Best results are obtained by aiming at complete regression from a single dose. The inflammatory reaction excited by a first application makes difficult the differentiation of malignant from inflammatory tissue. The inflammatory reaction results in the formation of new connective tissue which, in turn, protects remaining malignant cells. Furthermore, the repeated induction of these uncomfortable reactions within the larynx is devitalizing to the patient.

I have purposely refrained from a detailed account of dosage and filtration, as it would seem to be outside the field of this discussion.

PALLIATIVE TREATMENT BY RADIUM.

In considering radium as a palliative agent, we must reverse the plan outlined for its radical use. Where no reasonable hope for complete regression of disease can be entertained, the patient's comfort must be given first place and radium dosage kept down to such a point that no severe reactions will be encountered.

In all of these cases heavily filtered radium applied externally at cross-fire is indicated. A considerable amount of retardation of growth is produced through the direct effect of radiation on tumor cells, while the fibrosis excited tends to limit the growth locally and prevent distant extension. In certain cases emanation, in small doses, may be buried in the primary growth to advantage, but large doses applied in this manner are definitely contra-indicated. I am confident that, in our earlier work especially, we have been guilty of many grave errors in this direction.

In many advanced cases cervical nodes are present on one or both sides. Emanation buried in these has a two-fold value. It is not only the most efficient method of according palliative relief to the nodes, but they, in turn, serve to hold a considerable quantity of emanation which by reason of its gamma radiation exerts a marked inhibitory effect on the primary growth. Thus the interior may be satisfactorily held in check for a considerable period without subjecting it to the inflammatory reaction of a dose applied directly. We feel that this has been a distinct advance in our palliative technique.

Time does not permit of a detailed discussion

of treatment of extension of the disease to cervical nodes. In general our plan is that outlined in a report last year of the treatment of cervical nodes secondary to intra-oral carcinoma. No surgery is done in the neck unless a definite node is palpable. If the primary growth warrants it, a unilateral neck dissection is done under local anesthesia and radium emanation tubes buried in the wound at the points of severance of the lymphatic channels. Advantage is taken of this surgical exposure to ligate the external carotid artery and also to bury emanation as near to the base of the primary laryngeal growth as possible. If the primary growth is unfavorable or the nodes infiltrating beyond their capsules, no dissection is attempted. Instead, emanation tubes are buried uniformly throughout the mass either after surgical exposure or directly through the skin, depending on the merits and anatomical conditions of the individual case.

THE COMBINATION OF SURGERY AND RADIUM.

Our experience does not warrant expressing an opinion on the value of radiation followed by radical removal. In the small series in which we have attempted this plan the disease was so far advanced that the surgical procedure was with one exception shown to be ill advised. Based on our information in general, however, it would seem that pre-operative radiation would be very valuable to those following the radical surgical methods. Postoperative radiation of squamous cell carcinoma is too much of a gun-shot procedure to be considered of much value.

In addition to the combination of surgery and radium already referred to, in the neck, we have employed surgical exposure to advantage during the past year, in another direction. Certain deeply infiltrating growths are very difficult to localize by the intra-laryngeal methods, and here we have employed laryngo-fissure as a means of more accurately exposing the growth and inserting emanation tubes.

STATISTICS OF TREATED CASES.

The foregoing suggestions for treatment of malignant diseases of the larynx are based on a series of 156 cases treated at the Memorial Hospital during the past five years.

Of these, 20 cases were classed as primary operable intrinsic carcinomas. Seven of this group are now free from clinical evidence of disease: one for 3½ years, 3 for 2½ years, one for 2 years, one for 1 year, one for 8 months.

One of the cases now well for 2½ years had an involved cervical node and was treated by surgical dissection of the neck plus radium emanation buried in the wound. The case reported well for 8 months had a severe secondary radium reaction recently, but this is now subsiding satisfactorily.

Four of these cases, only, were verified by microscopic section, and for this we must expect to be severely criticized—perhaps justly so. However, we have here, as elsewhere in the body, followed out our principle of refusing to take a section if it seemed to be not in the best interest of the patient. The dangers of opening up avenues of extension deeper into normal tissues, of infection, and of edema must be reckoned with where the growth is not bulky and fungating. Under such circumstances we have favored the clinical opinion of observers trained in the diagnosis of malignant disease even at the risk of criticism from some quarters.

Seven cases are progressing favorably with reasonable hope for a complete regression of disease, although it is too early to draw any definite conclusions.

One case treated over 2½ years ago had a violent reaction from the use of tubes of too high individual values, infection and sloughing resulted, and a laryngectomy was done in another institution. This patient is reported free from disease at present, but cannot be classed as benefited by radium.

Another case treated one year ago had a complete disappearance of disease after 4 months, but then disappeared, and efforts to trace have failed.

Four cases were complete failures. One of these returned to his home at some distance from New York, treatment was neglected and has been recently reported dead. Another died of pneumonia following tracheotomy. A third was unimproved, laryngectomy was resorted to and death from infection resulted 4 weeks later. The fourth case is still living, but is steadily going down hill.

Of the entire series 51 cases were classed as intrinsic inoperable. Forty of these were primary and 11 recurrent. Of the primary cases, 8 had definitely involved cervical nodes, and of the recurrent cases, 3 had cervical nodes involved—one of them recurring locally later: two were recurrent in the nodes only, following total laryngectomy. The 32 primary cases without involvement of nodes were inoperable because of the extensive local lesion coupled with either poor general physical condition or advanced age or both.

In this group of 32 cases, two were malignant granulomas of the type of lymphosarcomas, and the remainder squamous carcinomas. Both of the malignant granulomas are now free from clinical evidence of disease for periods of a little over a year. One case of carcinoma remained free from disease for 1½ years, after which time he was lost track of. Another case treated 10 months ago is reported free from disease by his laryngologist in Cuba. Nine cases are showing continued palliative improvement over periods

of 2½ years to 6 months. Seven cases showed temporary palliation over periods of 2 years to 6 months, and then died, or are at present going down hill. Ten cases were unimproved and quite possibly made worse. Two cases were lost track of. Of the 8 primary intrinsic inoperable cases with cervical nodes, one case has received palliative relief for 8 months to date, but the other 7 have been totally unimproved. Of the 11 recurrent cases, one has shown a very striking

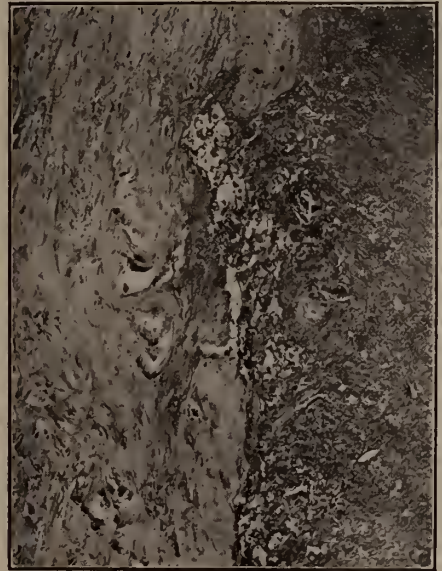


FIG. 7.—Lymph node invaded by carcinoma, treated by embedding bare tubes of radium emanation and removed surgically two months later. Note the complete replacement of carcinoma by fibrous tissue.

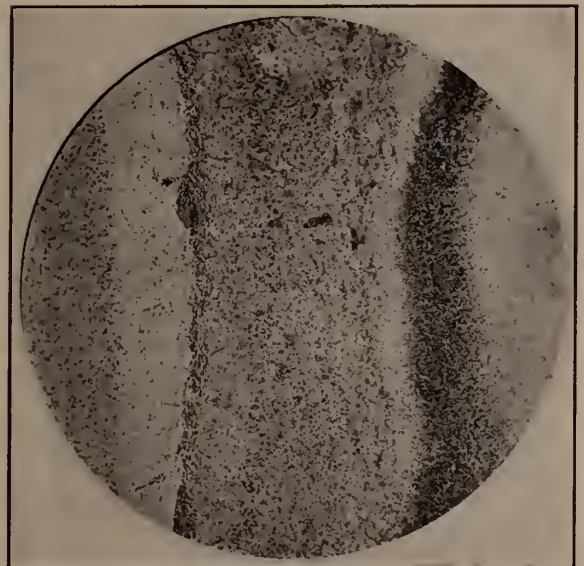


FIG. 8.—Microphotograph showing the lymphocytic infiltration round about an area treated by burying radium emanation tubes.

result: after heavy radiation a total laryngectomy was done and she has now remained well for 5 years. Three cases are too recent to draw any conclusions. Three have received palliative relief from 6 to 18 months. Three were totally unimproved and one lost track of.

All of the extrinsic growths in our series have been classified as surgically inoperable. Twenty-nine were primary and one recurrent without cervical nodes; 53 were primary and two recurrent with cervical nodes. All were classed as carcinoma, with one exception—a lymphosarcoma—although all were not confirmed by microscopic section.

Of the 31 cases without cervical nodes, four, all confirmed by sections, are free from clinical evidence of disease at present; one for 2 years, two for 1½ years, and one for 15 months. Three show palliative improvement to date over periods of 4 to 20 months. Four were improved for 8 to 12 months and then began going down. Three are too recent to classify. Eleven were unimproved and would have been better off had no treatment been given, and five were lost track of.

Of the 55 extrinsic cases with cervical nodes, two are now free from clinical evidence of disease for periods of 10 and 12 months, following the use of buried emanation in the primary growth and a combination of surgical dissection and buried emanation in the neck. Twelve cases show palliative improvement to date over periods of 4 to 22 months. Ten cases were temporarily benefited over periods of 6 to 12 months. Two cases, while showing a satisfactory initial response, are too early to classify. Twenty-one cases were totally unimproved and eight we have been unable to trace.

SUMMARY OF CONCLUSIONS.

1. While radium offers a hope to a larger number of cancers of the larynx than the older methods, its use must be considered, to a certain extent, experimental as yet.
2. Before treatment of a laryngeal neoplasm is undertaken proper classification, based on what can be reasonably hoped for, should be made and the method and intensity of treatment governed accordingly.
3. While treatment of primary operable intrinsic cancer of the larynx is permissible, the evidence to date does not warrant advocating it as the agent of choice.
4. It is suggested that the pre-operative use of radium in operable cases would add materially to the end result.
5. Surgical exposure may frequently be used to advantage in radium localization.
6. The radical use of intensive radiation is permissible in cases offering a reasonable hope for complete recovery.
7. The conservative use of radiation in inop-

erable cases offers palliative relief in a large percentage.

8. Radium should be withheld in the very advanced cases.

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STUDIES ON THYROID DISORDERS.
IV. THE INTRAVENOUS ADMINISTRATION OF GLUCOSE SOLUTION IN THE TREATMENT OF ACIDOSIS FOLLOWING THYROID OPERATIONS. (PRELIMINARY REPORT).*

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AS our knowledge of the pathology and physiology of the thyroid gland increases, we are able to surround the operation for goitre with more and more safeguards. It is our purpose in this report to describe certain precautions which we now take as a result of our experience in combating the acidosis which is so prone to occur in the early post-operative period following goitre operations, particularly in the higher grades of hyperthyroidism. It is a common experience of surgeons who operate for goitre, that a more or less serious acidosis is apt to develop in the first twenty-four to forty-eight hours following operations on the thyroid gland, particularly in the presence of hyperthyroidism. This acidosis manifests itself clinically by a number of annoying and more or less disturbing symptoms and signs, such as marked nervousness and restlessness, often distressing nausea and vomiting, headache, irritability of the bowel with diarrhoea, a dry tongue, parched lips, an acetone odor to the breath, and often large amounts of acetone in the urine. When these symptoms are superimposed upon those, due perhaps more directly to hyperthyroidism, such as extreme tachycardia, a rather high temperature, extreme nervousness, there is produced a disturbing syndrome which is of considerable anxiety to the surgeon and very distressing to the patient and which, as we all know, occasionally proves fatal. We have felt that if we could combat this combined syndrome by therapeutic measures or if we might dissociate from this clinical picture those factors dependent upon acidosis, we might avoid or ameliorate the symptoms to such an extent that the hyperthyroidism itself would be less disturbing. This would be a considerable gain. In the presence of this post-operative reaction, it is often difficult to carry out effectual treatment since, on account of the nausea and vomiting, the oral administration of medicines, liquids or food, is excluded, and on account of the irritability of the bowel with diarrhoea, the rectal administration of saline, bicarbonate and glucose solutions, is practically impossible. We have found that, in this predicament, the intravenous administration of glucose solutions is attended by very satisfactory results.

I wish to report some results obtained in a series of recent operative cases in the relief of acidosis by the intravenous administration of glucose solutions. It is a satisfaction to have some therapeutic measure which will help carry the patient more comfortably, as also more safely, through the first few days of a difficult post-operative period. This is somewhat comparable to the protection afforded our patients before operation by our clinical examinations and tests, particularly the determinations of the metabolic rate and my own Epinephrin Hypersensitiveness Test.¹ These two tests are very generally used now in the study of the pre-operative status of the patient and are a great help in determining, in the first place, whether hyperthyroidism does or does not exist and, secondly, in helping the surgeon to decide as to the type and extent of the operation which he intends to perform. Thus the surgeon is aided in deciding whether an operation upon the thyroid is indicated at all. He is furthermore warned not to undertake a too extensive operation in the higher degrees of hyperthyroidism. As a result of these pre-operative safeguards alone, thyroid operations have in experienced hands become very safe indeed. It is our feeling that the occasional death from acute hyperthyroidism and acidosis following operation may be avoided by the proper treatment of the acidosis. The existing low mortality would be rendered even lower.

It is not surprising that acidosis should be so readily produced by operation upon the gland in states of hyperthyroidism since we know that operation precipitates increase of thyroid manifestations and doubtless a thyroid intoxication. Therefore, since the thyroid is so intimately bound up with the phenomena of metabolism, whenever changes occur in the degree of thyroid activity, and therefore in the amount of thyroid secretion in the circulation, corresponding disturbances in metabolism should naturally follow. This acidosis so readily produced manifests itself symptomatically and by the presence of acidotic bodies in the urine, such as acetone, diacetic acid and other similar bodies. Thus the acetone odor in the breath, the unmistakable urinary findings and the clinical symptoms mentioned above, are frequently found after operation.

We may review briefly a few of the important physiological facts upon which the acidosis of hyperthyroidism probably depends. I have reference to the relation of the thyroid gland to carbohydrate metabolism and the behavior of the blood sugar in states of hyperthyroidism since these factors are, as we believe, so intimately bound up with the problem of acidosis following operation. Of all the ductless glands the thyroid and the adrenals are probably the most directly concerned with disturbances in carbohydrate metabolism. Thus, for example, Kuriyama² found

* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, May 19, 1922.

that thyroid feeding to white rats produced a diminished glycogen content of the liver. There are other facts which make us believe that excessive thyroid secretion, as also adrenalin, mobilize glycogen in the body and thus cause an increased sugar content in the blood as long as there is a sufficient glycogen reserve. With prolonged thyroid overactivity there is a marked loss of body weight and incidentally also of glycogen reserve, and it is our feeling that as a result of this, acidosis is very prone to occur following operation in hyperthyroidism.

Following some favorable results we had with the intravenous administration of glucose solution in the treatment of post-operative acidosis, we attempted to determine the possible basis upon which this carbohydrate protection against acidosis depends. We were thus led to study the behavior of the blood sugar before, during and after operation, and found that there is an early, rather definite rise of blood sugar as a normal response to the factors concerned in operation whether in the non-hyperthyroid or in the hyperthyroid patient, the difference being that in the normal individual the blood sugar rises gradually and over a longer period and only gradually falls again to the normal line in two or three or more days, whereas in hyperthyroidism the initial rise in blood sugar is more abrupt, is not so high, and then falls promptly to the pre-operative level or lower, often in thirty minutes or less. The blood sugar increase is thus of less extent and much less sustained than in the normal. We suggest that this behavior of the blood sugar may be the result of excessive thyroid secretion liberated by direct operation upon the gland, and that this increased thyroid secretion influences carbohydrate mobilization either directly or through the medium of the adrenals. Psychic stimulation of the adrenals through a certain fear or dread of the operation or perhaps the action of thyroid secretion directly upon the nervous system as suggested by Allen, may be responsible for the increase of sugar in the blood. The factor of the anesthetic used whether local or general is probably not an important one, for we have found that there is an increase in blood sugar though perhaps not so great even when local anesthesia is employed.

The blood sugar determinations were made in the following manner: Five cubic centimeters of blood were taken twenty-four to forty-eight hours before operation to determine the blood sugar content under normal conditions. A second specimen was taken immediately before anesthesia was begun and subsequent specimens were taken at twenty minute intervals during the operation. Post-operative determinations of the blood sugar were made at intervals according to the individual case, a minimum of two determinations being made. In several of the recent cases blood-sugar

determinations were made sometime after the intravenous administration of glucose to determine the extent and duration of the rise in blood sugar thus produced. The Folin-Wu³ colorimetric method was used in the blood-sugar determinations.

Examinations of the urine were made with particular reference to the occurrence of acetone in each specimen voided over a period of twenty-four to forty-eight hours before operation, and in each specimen voided during the post-operative period until the urine became acetone-free. We have regarded the presence of acetone as an indicator of the presence or absence of acidosis. Unfortunately, these examinations are purely qualitative since no satisfactory method is available for the quantitative estimation of acetone in the urine. We have, therefore, arbitrarily designated the amounts of acetone indicated by the reaction as occurring in a trace, one +, two ++ and three +++. We realize that these determinations are only approximate, but since our problem concerns principally the occurrence or non-occurrence of acetone and secondarily its amount, we feel that these tests are sufficiently accurate for our purpose. We found that the clinical manifestations of acidosis were always associated with the occurrence of considerable amounts of acetone in the urine, and that when the urine became acetone free the clinical symptoms accompanying acetonuria likewise disappeared. In other words, the occurrence of acetone is a satisfactory clinical index of the presence of the acidosis, which we are considering.

Chemically pure glucose was used in fresh solutions of 5 per cent strength. The solution was given into the ante-cubital vein in amounts varying from 300 to 750 cc., and allowed to run in slowly over a period of twenty to forty-five minutes, depending upon the amount used. The solution should be given slowly in order to avoid circulatory embarrassment and a too sudden increase in the blood sugar. The glucose would otherwise fail of complete combustion and thus of combating the acidosis and would thereupon be excreted by the kidneys whenever the sugar content of the blood rises above the renal threshold level. In no case were there any harmful effects noted. In the earlier cases the solution was given some hours after operation when the presence of acidosis was recognized. More recently as a result of our studies and with the practical assurance that acidosis would develop, the glucose was given in a prophylactic way immediately at the end of the operation with gratifying results. It is our intention now to give glucose intravenously even before the operation with the idea of preventing all appearance of acetone and therefore acidosis.

Coming now to the individual case studies, we may consider the appearance of acetone and

acidosis first in the group of so-called normal controls, then in the cases of mild hyperthyroidism to which the majority of adenoma cases belong, and then in the cases of more severe hyperthyroidism, namely, the exophthalmic group. There were five cases of normal healthy individuals which might be considered as normal controls suffering with conditions, such as hernia, chronic appendicitis, and other common surgical conditions. Of these five patients with apparently normal metabolism four showed a faint trace of acetone in the urine immediately following operation and none on the second day. In one instance, that of pyloric obstruction, acetone was noted over a subsequent period of more than forty-eight hours. This case should possibly not be used as a normal since it was one of carcinomatous pyloric obstruction with loss of weight and a blood sugar reading of 74 mgm. per 100 cc. of blood before operation. It is interesting that in this case acetone should be present. The blood sugar in the five normals before operation is present in about the normal amounts, namely, in the neighborhood of 100 mgm. per 100 cc. of blood. In one case, however, it reached as high as 120 mgm. There is a gradual rise in the blood sugar content during the operation, as is shown by the determinations at twenty minute intervals. This blood-sugar increase continues over a period of an hour to an hour and fifty minutes, and the characteristic curve shows that this hyperglycæmia is sustained and falls only gradually over the course of three to four days following operation. This sustained hyperglycæmia curve is characteristic of the normal control and is well shown in the chart of case twenty-one to be shown later.

Turning now to a study of acidosis and hyperglycæmia occurring in cases of hyperthyroidism of which there were twenty-six, and which were allowed to run their ordinary course without intravenous administration of glucose, we find that acetone often appears in small amounts in the urine immediately before operation, followed by a rapid rise in the amount of acetone secreted following operation, the maximum amount being reached in twenty-four to forty-eight hours, and being proportional usually to the severity of the case. This is generally followed by a gradual decline and at the end of a period of from three to ten days, according to the severity of the individual case, the acetone disappears. Along with the post-operative appearance of acetone the associated symptoms of acidosis described above are clinically observable and of severity proportional to the amount of acetone present.

A typical case of moderate hyperthyroidism shows usually an approximately normal pre-operative sugar content or there may be a mild hyperglycæmia which rises during the period of anxiety just before anesthesia whether this be general or local, and which reaches its height

twenty minutes after the beginning of anesthesia, while in the normal this rise continues over forty or sixty or even eighty minutes after beginning of operation. Following this initial twenty-minute rise in hyperthyroidism, there is generally a fairly rapid fall in the blood sugar which then gradually subsides to its pre-operative level at the end of about twelve hours. This is a striking difference from the normal just described in which the rise continues over a much longer time, is much more sustained and continues for two days at least before the pre-operative level is again reached. We have found that in the more severe grades of hyperthyroidism this hyperglycæmia curve does not reach the same height and falls more rapidly again, suggesting that the glycogen reserve is so depleted that there is only a mild response to the factors calling forth glucose.

An interesting relationship was observed between the degree of hyperglycæmia and the occurrence of acetone and acidosis. It was found that in those cases of marked hyperthyroidism in which the blood sugar curve was low and tended to fall promptly to the normal or below, the acidosis was more severe, suggesting that in these individuals in whom the glycogen reserve is low, the factors upon which the apparent defense against acidosis depends are depleted, thus allowing for the appearance of clinical symptoms and acetone in the urine. When the hyperglycæmia curve is high and sustained following operation there is little acetone in the urine and practically no acidosis. This suggests that there may well be a relationship between the sugar content of the blood and the appearance of acidosis. In those cases in which we believe the reserve of carbohydrates in the form of glycogen to be large, it is possible that fats and proteins are spared, the glycogen is used and acidosis fails to appear. This suggested to us that the occurrence of the hyperglycæmia was a possible protective measure against the development of acidosis and it was upon this basis we were led to administer intravenous glucose solution in the more severe cases of hyperthyroidism with a low hyperglycæmia curve and have obtained some very favorable results as shown by the study of ten cases. Thus among these there were five cases of exophthalmic goitre and one of adenomatous goitre which developed a post-operative acidosis to such a degree and accompanied by such definite clinical symptoms that it was thought advisable to give glucose intravenously. 300 to 500 cc. of 5 per cent glucose solution were given and the symptoms of acidosis, such as nausea, vomiting, headache, extreme restlessness and anorexia, disappeared within a period of twelve hours and the urine was acetone free in twenty-four hours following this intravenous medication. It was very satisfactory and striking to see the prompt and

definite improvement both physically and mentally on the part of the patient from the picture of one looking ill with an aversion to food and drink and full of complaints to one cheerful, taking food and with very few complaints. We believe that when it is possible for these patients to take food freely, the problem of acidosis is already much simplified since in this case there is a normal transport to the blood of glucose obtained from the food intake itself. This is the great advantage of the early disappearance of acidosis, for thereupon the patient will begin to take food at once and the additional factors of starvation acidosis are avoided.

In several more recent cases in our series in whom from our previous experience we had every reason to anticipate a marked acidosis with acetonuria, a prophylactic intravenous injection of glucose was given immediately at the close of the operation, and it was striking to see the very slight acidosis, the very small amount of acetone in the urine and the very much more satisfactory appearance and condition of the patient. This has suggested to us the advisability of giving glucose immediately after operation in all cases of moderate to marked hyperthyroidism. It is now our practice to do so in these cases and we feel that the post-operative course is rendered much more satisfactory.

In summarizing then we should like to emphasize the following points: There is an increase in the blood sugar during operation and this is true whether a general or local anesthetic is used. In the control individual with apparently normal metabolism there is a progressive increase in the blood sugar over a period of sixty to eighty minutes and may reach as high as 200 mgm. of sugar per 100 cc. of blood. Following this there is a gradual fall over the subsequent two to four or five days before the normal pre-operative sugar level is again reached. In the common surgical cases acetone does not appear in the urine before operation but often the first post-operative specimen and sometimes those voided during the following twenty-four hours will contain a trace or a one + acetone. There are usually very few if any signs of acidosis and the occurrence of this amount of acetone is ordinarily negligible. The patients have also the distinct advantage of taking food early which counteracts any possible acidosis. In cases of hyperthyroidism, however, there is a very different behavior of the blood sugar and acetone in that the blood sugar increase is less and continues only over twenty minutes when it reaches its height following which there

is usually a rapid fall to the pre-operative level or even below within an hour. The higher the degree of hyperthyroidism the less, we have found, is this development of hyperglycæmia. On the other hand, there is an early and progressive development of acetone beginning immediately after operation and extending sometimes over the following two or three days and then only gradually disappearing at the end of five to ten days when the urine becomes acetone free. Along with this acetonuria there are rather disturbing symptoms, such as headache, dry tongue, acetone odor to the breath, distressing nausea and vomiting, restlessness and often diarrhœa. These symptoms may be sufficient to cause considerable anxiety to the surgeon and a great deal of distress to the patient. We have felt that some therapeutic measure which would avoid this post-operative acidosis would be of the greatest value in saving certain serious cases and in making the convalescence in all such cases much more satisfactory to both patient and surgeon. On account of the absence of acetonuria in the normal case and its almost constant appearance in fairly large amounts after goitre operations in the presence of hyperthyroidism, and on account of the behavior of the blood sugar, being high and sustained in the normal and lower, transient and brief in hyperthyroidism, we felt that the occurrence of hyperglycæmia is a protective measure against the development of acidosis by sparing possibly the combustion of proteins and fats with their resultant liberation of the toxic acid bodies. It is true that acetone and acidosis develop inversely to the degree of hyperglycæmia developed. We, therefore, have used glucose intravenously in 5 per cent solutions, giving amounts varying from 300 to 750 cc. upon the first development of acidosis. We now give it prophylactically in all cases of acute hyperthyroidism immediately after operation, and it has been very gratifying to us to be able to greatly diminish or prevent the development of acidosis. It is a great satisfaction to be able to control the symptoms and signs of acidosis since the convalescence is made much more comfortable and indeed also more safe. We can control the nausea and vomiting, the restlessness and diarrhœa, thus making it possible for us to administer saline or bicarbonate solution by rectum and, what is more important, to give food by mouth. The patient is thus supplied with a normal carbohydrate intake which of itself combats the acidosis. We have in no instance seen any harmful effect produced by glucose solutions of 5 per cent strength when given slowly. It is

our custom now to give this so-called prophylactic glucose immediately after operation in all cases of hyperthyroidism except the milder cases. Our series of cases thus far, is to be sure, not very large but the results have been so gratifying that we are encouraged to continue. A full report with the case studies themselves will be reserved for a later publication.

In conclusion we wish to say in brief that acidosis is very prone to occur after operations upon the thyroid gland, particularly in the higher degrees of hyperthyroidism; that this acidosis appears to develop as a consequence of the inability of the body with its depleted glycogen reserve to produce and maintain sufficient hyperglycemia to ward off the development of acidosis; that glucose intravenously administered is utilized by the body, thus apparently sparing the combustion of fats and proteins and thus eliminating the annoying and often distressing and possibly dangerous symptoms of acidosis in the post-operative phase of goitre operations. The operation, as such, is thus rendered certainly much more comfortable and also, we think, more safe.

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Discussion.

DR. C. W. WEBB, Clifton Springs: Our chemist, Dr. Hubbard, has worked out a quantitative method for measuring the Keotone output. We have followed thyroid cases through with this determination and the output of the keotone bodies on the day of operation and following days would rise to enormous quantities as compared with the output on the days preceding the operation.

Quantitative determinations were also made on patients operated on for abdominal conditions

and the increased output of acetone was very small on the days following operation.

We were able to definitely decrease the time of increased output of the keotone bodies by administration of carbo-hydrates. It has been our custom to give 10 per cent solution of glucose by bowel for two or three days following operation. Where the symptoms are severer we have employed glucose intravenously. In our experience this has made a marked difference in the after effects of operations on hyperthyroid cases. These determinations tend to show in thyroid cases a lowered glycogen storage, and Dr. Thomas has suggested forcing carbo-hydrates previous to operation, which course we are now following with benefit.

We find the metabolic determinations a great factor in handling these cases. A determination is made on the day following admission, and, where the metabolic rate is increased the patients are kept in bed with ice to heart and neck for three or four days, when another determination is made. If the rate has decreased under this treatment we feel that it is safe to do an excision. If the rate, in very toxic cases, remains fairly fixed, after this treatment, we then ligate one superior artery, and another determination is made the week following. If there is a decrease in the metabolism or it is not increased, we feel that an excision can be done in a short time. If the patient has had reaction following the ligation and the metabolic rate is found increased the following week, we then ligate the other superior thyroid artery and let the patient undergo treatment for five or six weeks before excision.

These factors and the precautions mentioned in Dr. Goetsch's paper have certainly added greatly to the safety of thyroid surgery, and we feel that it is now on a par with abdominal operations so far as operative risk goes.

DR. EUGENE H. POOL, New York City: We should be grateful to Dr. Goetsch for this contribution, although it was hard to grasp in so short a time all the physiological premises upon which the paper was based. Arguments have been advanced as to whether these cases are medical or surgical; they are both. Each case should receive prolonged attention from a competent medical man, in regard to rest, diet, removal of septic foci, etc., a man who will also bring in the accessory measures (X-ray therapy, surgery) at the proper time. In regard to when to bring them in—we have various methods of determining, including the clinical impression, which is valuable, but falls short of what we need. If the

Goetsch test is done exactly as Goetsch recommends, it is very reliable. Basal metabolism, however, is the most valuable aid. In cases with high metabolism operation should be delayed. Three-fourths of the cases should receive surgical intervention. In severe cases ligation is done, and later partial thyroidectomy when the patient can stand it. The thyroid is not the only gland involved, but it is the only one we have sufficient knowledge about in this disease to warrant attacking the disease through it. Dr. Goetsch says he can make these cases as safe as any other surgical cases. That is a dream I hope he will realize. I have looked up the records of the post-operative course in 100 thyroid cases, but did not find acetonuria. Acetonuria is presumptive evidence that there is acidosis, but there may be compensation for the increased production of acetone bodies which are freed by oxidation of the fats. To demonstrate positively that there is clinical acidosis, it would be necessary to examine the hydrogenion content of the blood or the combining power of the carbon dioxide. In regard to blood sugar, I cannot refute, nor yet confirm Dr. Goetsch's chemical findings. I know that fluid administered to these patients benefits them. In one case, a serious risk, we administered glucose preliminary to operation, and had excellent post-operative course. I have rarely seen a case do so well. I am convinced that it is a valuable aid, and shall adopt the method in my own practice.

DR. GEORGE E. BEILBY, Albany: I believe that the time has come when we can say that the operative mortality in thyroid surgery is exactly what the operator makes it. At any rate, this is nearly true. Sometimes we misjudge the resistance of a case and carry our operative procedure further than we should at any given time. Statistics show that with better technic, better preparation of cases for operation and the selection of the time, and by the use of stage operation, when necessary, the operative mortality in thyroid work can be reduced to almost nothing.

I have recently had a series of eighty (80) consecutive thyroid operations without a mortality, and a very small percentage included in this number were ligations.

The work of Dr. Goetsch opens up a new field. I, personally, have not seen in my work a case of acidosis following an operation upon the thyroid. It is true that following all operations upon the thyroid gland, even in the adenomata or simple hypertrophies, there is a reaction in which all of the symptoms, from which the patient may have complained previous to opera-

tion, are greatly increased. This period lasts from 36 to 48 hours, and, in my opinion, it is due to the increased amount of thyroid secretion being taken up by the circulation. I think this reaction could at least be partially avoided or made less by careful preliminary treatment and preparation of the patient for operation. I believe that the regular routine of the patient's life should be disturbed as little as possible, and their mental state should receive particular attention, because there is no question but that fear adds greatly to the reaction which follows operation.

DR. HOWARD L. PRINCE, Rochester: When all the rest of the body is in good shape we can do a million of these operations. We have an occasional accident which we lay to the Lord. What about the cases that need something done, in which we can't operate? We listen to what the other man says. He says the X-ray is no use. we ask him what he does in inoperable cases. He says he uses the X-ray! Let us learn something about these cases; about the kidney condition; about the factors that kill them; then let us talk about operation. Let us see how many bad cases we can make safe for operation. We can bring about normal metabolism, gain in weight, with preliminary X-ray usage. With a plus 75 metabolism, and loss of sixty pounds in weight, we can't do anything then and we don't talk about results. I know one thyroid case diagnosed carcinoma of the pylorus, who could not even retain fluid on the stomach. We thought the X-ray might be a new way of killing her. The vomiting stopped 48 hours after the first X-ray dosage; she never vomited again. Her metabolism is normal, and she is fit for operation, but feels so well she doesn't want to be operated upon. These cases are worth thinking about. As to acetonuria being an index of acidosis, I don't think that is worth a continental!

DR. TENNYSON L. DEAVOR, Syracuse: This paper is diagnostic and therapeutic at the same time. We don't appreciate the gravity of hyperthyroidism. Whatever is beneficial should be utilized. Why not add anything of value in Dr. Goetsch's theory to our present line of treatment. Not that we should discard any of the things that have already helped us. We need them all. I would prefer to use rectal administration of glucose, but, if the intravenous method is safe and better, let us use that. We dare not forget the administration of fluids, rest, separation from friends, etc. But we must put a check on too early operation. Physicians from the country bring in patients during the day, and want them

operated on the next morning. This is very dangerous. The patient must first be rendered able to stand the knife, or she is more likely to go home in a casket. We as surgeons should use more cerebration in the matter of treatment; act wisely and think deeply.

DR. GOETSCH (closing): I have learned much from this discussion. Dr. Webb tells me that a chemist has worked out acetone determinations quantitatively. Clinically, we have no such tests. Occasionally we give glucose by rectum, but often the bowel is so irritable that it will not hold the solution and the patient simply floods the bed. We encourage patients to eat all they can. Candy is good for them. Any means of combating acidosis is just an additional safeguard. We determine metabolic rates in all cases and find them very helpful. Extreme hyperthyroidism is a difficult problem. I suggested that acetone is an index of acidosis. Acidosis is a very complex problem. The best chemists are working on it. Acidosis may not be an absolute index, but it is certainly an accompaniment of severe hyperthyroidism and acidosis can be relieved by carbohydrates. Dr. Webb says that the alkali reserve of the blood is low in post operative hyperthyroidism. This suggests a disturbance of the hydrogen-ion concentration. Our glucose is chemically pure (not commercial glucose) and is free from sulphuric acid. We have never seen reactions from the use of fresh solutions. However, I believe that acid may develop on standing for a day or two. Forcing of fluids is of course, useful after operation. When we talk about safety, it is largely a matter of the type of case. Some cases will give 100 per cent mortality; some cases are absolutely safe. The first factor is the severity of the case; the second factor is the surgeon.

The X-ray should not be used in adenoma cases for two reasons. Adenoma is a tumor in the thyroid gland, not thyroid disease *per se*. Adenomas are encapsulated, benign tumors, which can easily be shelled out. Operation is curative. Adenoma is one form of thyroid pathology in which a cure is certain after radical surgical operation. In the hyperplastic conditions of Graves' disease of which we do not know the etiology, the X-ray is of benefit; it inhibits the activity of the cells. The difficulty is that a standardized X-ray treatment has not been worked out. Each worker has his own methods and dosage. There is too much empiricism. The X-ray men ought to work out a correct gauge of depth of penetration and dosage, which will help to solve the problem.

REPORT OF A CASE OF PHOSPHORUS POISONING FROM SUCKING A SPIT-DEVIL.*

By A. S. CORWIN, M.D.,
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GRACE K., aged three years, sat on the steps with her mother at about 11 o'clock last Fourth of July, watching her brother set off his firecrackers. Her mother's attention was diverted for a moment—less than a minute—and when she turned back Grace's mouth and hands were stained red, and she had a "spit-devil" in her hands, which she had evidently had in her mouth. Her mother immediately rinsed her mouth and hands and freed her of all traces of the toy, so far as she could tell. In less than forty-eight hours the child was dead from acute phosphorous poisoning.

The child did not express any distaste for the article and shortly afterward, ate a lunch of carrots and potatoes. She played about normally until about three-thirty, without noticeable discomfort, when she walked a mile or so. On her return home she vomited, at first the lunch, undigested, and then clear fluid. She continued to vomit frequently all night, the vomitus becoming brownish fluid. At 4 A. M. the vomiting ceased. No physician was called as the mother thought it nothing more than an ordinary upset stomach.

July 5, 1922—She was quiet all the morning and had nothing to eat and no movement. At eleven she had an S. S. E., which was followed by a normal formed stool. She was given castor oil and castoria which she retained. She was thirsty but ate nothing all day, and felt well enough to play and talk and get out of bed at times.

At five o'clock she had a convulsion which lasted fifteen minutes, and which was followed by coma, from which she never came out. A physician was called and he made her vomit, by tickling her pharynx, and gave enemata, which were retained, even one containing turpentine. The vomitus was brownish fluid, but no food.

At 7 P. M. she was in coma; had no reflexes; the abdomen was not unduly distended nor hard and no masses, such as might be caused by a volvulus or intussusception, could be felt; the liver palpated about half-way between the free border of the ribs and the umbilicus.

At 8 P. M. the coma was apparently less marked. She had corneal reflex and stirred if

* Read at the meeting of the Medical Society of the County of Westchester at East View, September 19, 1922.

disturbed. She was vomiting occasionally and did so all through the night. Before one o'clock the next morning she had a good normal movement and at two o'clock she had an enema with ox-gall which brought away some of the same brownish fluid which she had been vomiting. The fluid was not typical coffee-ground material but was undoubtedly altered blood. Her temperature, pulse and respiration, up to this time had not been increased.

July 6, 1922—Between 12 and 5 A. M. she had five more convulsions. At five o'clock she vomited a large quantity of the same brown fluid.

At 6.30 she was cyanotic, especially over her abdomen. Her temperature was 103 and pulse 130. Her stomach was washed out and she was stimulated. Her coma was profound, although she was a pink color except as mentioned above. The abdomen was soft; the liver was palpable at the level of the umbilicus (a marked enlargement over night); no spleen or masses could be felt; heart action was weak and pulse feeble; respiration was occasionally sighing; there were no rales; the arms were relaxed, except for occasional spasmodic flexion of the wrists and hands; there was no exaggeration of reflexes, although the legs were spastic and there was continuous carpo-pedal spasm; pupils did not react; there was continual lateral nystagmus. There was no jaundice.

Her condition grew steadily worse and she died with respiratory paralysis at 9.15 A. M., about forty-six hours after getting the spit-devil in her hands.

Autopsy showed a huge yellow liver, greasy on section, and fatty degeneration of kidneys, heart and intestinal wall. Peyer's patches were enlarged.

On investigating the nature of the spit-devil it was found to smell strongly of phosphorous. A chemist reported phosphorous present. When this was discovered the father remembered that the vomitus on the first afternoon had smelled of phosphorus, but had not grasped the significance and called in a physician.

I have since learned of four other cases in New York City, three of them immediately after the Fourth of July and one recently, all from eating firecrackers. Undoubtedly there must have been many scattered over the country.

The spit-devil consists of a cartridge of folded paper in which is a mixture of magnesium carbonate, potassium chlorate, glue and phosphorous (10 per cent). It must be broken or ground under the heel to make it explode.

ASPECTS OF PRESENT TENDENCIES IN MEDICAL LEGISLATION.*

By JAMES N. VANDER VEER, M.D.,

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1. MEDICAL EDUCATION, PREPARATORY TO PRACTICE

IN the olden days history records that the physician received his training in the practical or clinical way accompanying his teacher in the rounds made while visiting his patients.

As the science of medicine has progressed through the ages there has naturally been an ever increasing contact of the various methods of training and clinical deductions, together with the correlation and inclusion of other sciences to bring about a group eventually designated as physicians. Many factors entering in on the part of these individual groups, by impressing their success in treatment, brought about the formation of groups at first in local circumscribed bodies such as the City Society, then the County Society and finally State and National bodies.

Education was disseminated only within certain lines, and wide variations in all professions were allowed until the groupings were enabled to formulate standards relative to the management of disease and the prolongation of health. Hence we had the County Board of Censors to be followed by qualification for admittance to the State organizations, and this in turn to be followed by the organization of the police and educational powers of the State in exercising jurisdiction over the unscrupulous in the defense of the public.

This has now come to the point when last year we saw introduced in the Legislature the Lockwood Degree Bill which sought to place under the jurisdiction of the State Education Department, the limitation in giving of degrees for any and all professions.

Present-day pressure from all sources now shows the attempt on the part of medical men through journals and meetings, with discussions and arguments and the desire to formulate standards of increasing severity, that the public health may be protected and that the knowledge of disease may be made as accurate as the present sciences can be correlated.

This is the demand in which the doctors should join hands, for the physicians of the future must have advanced over those of the past, if such a profession is to continue for the good of humanity. This is an axiom and needs no proof.

How high the standards can be jumped at each step is the only question which we have at issue.

* Read at the Annual Meeting of the Seventh District Branch, at Newark, N. Y., October 4, 1922.

We believe that proof exists to show "the medical profession is constantly on the alert and always strenuously working to discover new sources of disease and added methods of prevention and new methods and means of alleviation of the great scourge of humanity." But the increasing scientific knowledge which is being piled up on all sides and the inability of one human mind to grasp and retain this enormous amount of knowledge has produced, and tends to increase specialties, which must have the roots of their birth in the parent medicine, and must thrive as individual, large or small, branches of this parent, and in turn give forth their own branches of thought and endeavor, thus becoming a vine, as it were, of scientific deductions in the care of the sick.

If carried on as the present aspects of scientific progress would seem to show, the ultimate deduction can only be that we will have an increasing number of specialists in an ever widening group, and new specialties will spring up, all of them however, having to trace their source back to the parent root of medicine.

Witness in the last session of the Legislature, the Dick Optometry Bill, the Bloomfield Bill for licensing midwives, and kindred bills attempting to limit and to define these special groups for their control within sane limits for the protection of the public health and the proper standardization of special practitioners.

It would seem that the doctor of medicine must be on the alert, therefore, to prevent the entrance into the field of medicine of those who attempt the care and treatment of the sick, and should demand that all who professed to treat the human ills should be grounded in the basic sciences to such a degree as would give a thorough correlation in deduction and reasoning, concerning disease; and demand examination in this basic knowledge to be followed by thorough examination in the specialty to be pursued.

To this end the tendency seems to be, in some countries, as in Germany by law, and in this country by whim, to affix after one's name, a title, designating the specialty which one has chosen to follow, thereby conveying to the professional minds exactly the specialty followed by the person, and to the lay minds the same information, and thus giving to both doctor and layman a common ground on which to erect a new thought in the relation of doctor and patient, from a logical standpoint.

In Germany, we find the degrees "Dr. Med." or "Dr. Chir." (surgery) and so forth, this country having sought to instruct its people where they would exhibit their right of choice to the selection of a physician and to guide them by law to those who are qualified to practise some special branch.

All physicians as well as laymen are now

experiencing difficulty in differentiating the "Dr." of foot culture or corn removal, from the "Dr." of ablution or the "Dr." of rejuvenation by adjustments, from the "Dr." of phrenology. It has become quite the proper thing for any Tom, Dick or Harry to annex unto himself the academic title of "Dr." the only requirements in most cases being a mail order course and the price of a diploma.

The assuming and conferring of this title has become a vicious and obnoxious affair. Something should be done by us, not by the other fellows, to inform the public of what's what.

It is very discouraging for a young man to go through elementary schools, high school, college and medical school or university, and then have his cherished Doctor's diploma resemble the degree of an osteopath, chiropractor or chiropractor.

Osteopath, chiropractor, chiropodist and heaven knows who, call themselves "Dr." In fact a great many patients, especially foreigners, in relating their case histories, state that they have been to "Dr. So-and-So," who is a specialist on this or that, and on investigation, we find that this so-called "Dr." is a chiropractor or an osteopath, or a member of some cult.

With the continuous upward trend in regard to preliminary as well as to medical education of physicians, protection should be given him (the patient) by the same powers that raise the standards of medical education.

Legislation should be passed whenever and wherever possible that the use of a degree of doctor, for a physician or surgeon, or any degree that could possibly be construed as such, be prohibited by anyone except he be a duly graduated physician.

All modern advances in medicine and surgery have come through the medical profession. That these advances have been of value to the world will not be disputed.

All advances in the future must come through the same channels.

By the same token the physicians, however, must broaden their scientific knowledge to study from henceforth the science of legislation that they may be prepared to meet the demands made upon them by society for its protection and for their own benefit.

Strange indeed would it be if a well educated doctor of medicine following his thorough courses in the various subjects were more ignorant of the spine and its relation to disease than the cult which now essays blatantly to cure all human ills by the manipulation of the vertebral column, and with neither preliminary education nor training in the present accredited group of sciences, fixes the origin and course of disease upon the poor back-bone.

Because of our apathy in disregarding the

trend of the times as to medical education, various cults are thriving; since they are without the pale of the law and the doctor has, up to the present, confined himself to his practice to such a degree as to forget his duties to the community; and so has allowed these cults to appeal to the mysterious reasonings of the middle ages which the medical profession has long since abandoned.

2. LICENSING OF MEDICAL PRACTITIONERS

As shown before, the tendency of present medical legislation, is to hedge about practicing physicians with restrictions and regulations and even as in State Medicine to cause the practice to become mechanical, thus ultimately doing away with initiative of the individual and the substitution of the whole group under one set of rules.

This is in a measure, logical, since we find that our various sciences have progressed to such a degree as to interweave and in many places overlap, thus causing the inherent human jealousies to arise through commercial competition.

This commercialism has entered the profession and we find a weakening morale on the part of the poorer members of the group who would place medicine on a strictly commercial basis with all of the evils attendant thereon, such as advertising, fee-splitting, increasing operations unnecessarily performed, as so widely claimed by those ignorant of facts, and the like.

There is therefore a greater pressure from without the group for the licensing of other cults in the belief that they are the only ones in many instances inspired by Divine Providence to cure the human ills, and the tendency of legislation is to grant to these cults the privileges and rights of practice without investigation of proper qualifications for the protection of the body politic.

Physicians therefore, should not, and cannot demand other than increasing stringency in the matter of licensure.

But it must be remembered that the advance of medicine shall discard those thoughts and practices which have been proven to be harmful or innocuous, that the professional mind may not be burdened with useless knowledge.

This part relating to the licensure has more to do with the legislation of education and hence belongs to that governing group as it exists in this State through the State Department of Education.

The various cults seek to practice from a commercial standpoint, pure and simple, and hence are not willing to enter the field of the healing art on the basis of the present day, to which Medicine has been elevated through the thousands of years.

We cannot therefore, and must not let our standard of licensure be lowered despite this ever increasing tendency and this should be the

basis on which any future entrants into the field of healing may seek for admission.

As an example of this we have but to look back through the years and note the desire on the part of certain cults to enter the field, but with such low standards as to be absolutely ridiculous. Under this heading there might come up also the question of re-registration, wherein we ourselves attempt to aid the body politic by practically guaranteeing a supervision of our profession through some proper State agency. Many of us firmly believe, while some may rightfully disagree that it is time for the medical profession to advance to the point of the other professions where re-registration is now in force.

Practically with the entrance of the specialties there has come the desire on the part of groups of physicians, surgeons, and kindred specialists to re-register from year to year in their Societies, and we now find the American College of Surgeons undertaking its own examinations for applicants who covet the degree of F.A.C.S., thus obtaining the stamp of approval from a recognized body that they who are members are qualified as surgeons.

And we see the same illustrated in the American College of Physicians; while agitation in national bodies has already been started for similar moves in relation to the specialties.

The question then in this type of legislation depends solely upon whether we shall be as physicians, participants in such a measure; or with the onward march of progress tending ever toward a higher goal, shall have this forced upon us by outside influences.

3. PUBLIC HEALTH IN ITS RELATION TO THE PROFESSION.

In the early days of humanity, the head of the family ruled within his immediate circle. As families became amalgamated into tribes, certain officials were designated to perform certain duties for the group, and among these there sprang up the medicine man or healer if you would call him so, whose duty it was to care for the health of the group. Following this down through to the national groups of peoples, it is but logical that as the duties of the medicine man became more onerous and complex, there were formed public health councils within the tribe or nation, for the purpose of protecting the tribe against inroad of disease from without and the limitation of disease originating from within. Hence has arisen the creation of the Health Officer, the Health Board, and the larger Health Department, and the still greater National Health Council.

As life has become more complex, and as the divisions of work in the business world have become greater and greater, just so to a

greater degree has the public demanded a higher type of medical practitioner; for the practitioner enters into the health group now as one of a number who supervise and balance the relationships of the various interdependent groups in our life of today.

Not yet, however, has the group known as the Public come to concerted action in demanding this higher type of practitioner save in spasmodic instances, and thus it allows itself now and again to be preyed upon by charlatans in the licensing of the same by the body politic.

Only is the Public awakened when specific instances of wrong doing are sounded from the hilltops and these instances are mainly glaring individual ones standing out as exceptions to the rule, and are given wide publicity by these charlatans who make claims that are preposterous.

Legislation has seemed to tend the more on the part of the Public Group to demand greater supervision through its representative, the State, because of the shortcomings or idiosyncrasies of individual practitioners within the medical group and again fostered in some instances by the commercial spirit within the health group who seek political position or supposed political power.

This tendency it behooves the professional to guard itself against that there may be no encroachment on the function of the Medical Group as the purely professional part, but it cannot be said that the physician should attempt to legislate for the other groups of the public save in correlation with their representatives.

Thus is brought a unification of ideas without detriment to any one of the groups represented.

In many instances the Public Group is unacquainted with the practitioners who appoint themselves as the consultants, and is unable or unwilling to ascertain the reputation and standing of these self-appointed consultants.

The Medical Group therefor through its accredited representatives of standing, must impress upon the Public Group its sincerity in every moral, legal and legislative way.

This demands co-operation in all branches of the Medical Group and here enters in one of the main questions concerning the relation between the Medical Society of the State and the State Department of Health of our commonwealth.

So long as sound thinking men represent the Medical Group in its dealings with legislative matters relating to the State Department of Health, and there exists a similar feeling on the part of the officials of the State, then just so long can the Medical Group enter heartily into the question of public health.

Statistics show that 60 per cent of people

examined are in need of treatment and not more than 20 per cent of those needing treatment are receiving it. This great surplusage of disease makes the interest of the profession and the public one, binding the citizen and physician in a common purpose, coupling the determination of the public to remove disease surplusage with the ability of the profession to bring about its removal.

Let those shallow minds and timid souls among the brethren who fear or feign to fear a curtailment of professional opportunities and rewards, both material and immaterial, remember that only through the use of medical science, only by making the field of medicine larger and more attractive, can this waiting, unoccupied field of medicine be reclaimed from the domain of ignorance and need.

Many of the difficulties we now encounter are due, no doubt, to the fact that most of the members of the profession have far too little time to follow the new developments in medical work of today and the modern demands that society is making of us.

The medical profession has nothing to back them politically; why can we not be politicians? If we are right in the work we are doing for public health, why can we not have medical men to represent us in the legislature and not politicians who think a physician has no political standing?

This is a question we should meet.

4. THE NECESSITY OF PHYSICIANS PROTECTING THEMSELVES WITHIN THEIR OWN GROUP.

As the physician must needs protect himself, in a group from without, so must protection be afforded to the individual and to the group within itself, and hence we find legislation of a moral type construed in these later days as medical ethics originated in the past and brought down to the present where we now see it promulgated as a so-called code of ethics.

With the increase, however, of the number within the group there naturally enter those who force their individual ideas upon the group for good or for evil, some of whom would wreck the standing of the group for their personal aggrandizement.

Many are the reasons therefor, such as political preferment within the group, a self-seeking for place in order to satisfy ambition or pocketbook; or deliberate perversion of our ethical and moral concepts.

Hence we are compelled to legislate, and should freely do so within our own group to a more stringent degree for the betterment of the group as a whole, and thus show our sincerity in relation to the Public Group.

We demand from the latter that they fulfill their commercial obligations; that they notify us when they choose another practitioner; that they follow our advice and counsel as a group.

But what can we say as a group as to our own legislative efforts to purge ourselves of the unfit, the immoral, and the parasite who in nowise contributes to our advancement, but is rather a brake upon our efforts.

Our laws concerning our own conduct within the group are archaic. We still see illegal practitioners, known to us so to be, continue their nefarious work and through the moralistic term "ethics" we refuse to institute such changes in the laws as would substantially limit these practices, or positively do away with them.

A man is not in competition with other men, so much as he is in conflict with himself. Competition in business often saves us from slumping, while a conflict with our own conscience and a conference with our own brain, indicates the way.

Since how long, may I ask, have we really attempted to curb the abuses that have been brought to my attention, such as some of the following:

First. Promising to cure for monetary consideration, incurable diseases.

Second. Having professional business relations with persons who are unfavorable, or willfully dishonest in their commercial methods.

Third. Unfair medical practices, such as certifying for food handlers, persons who have not been carefully or properly examined; or issuing improper certificates regarding health or sequellae of injuries in Workmen's Compensation Reports; signing the findings of non-medical technicians (such as X-ray, chemical and laboratory reports); and issuing without examination or proper medical attendance certificates for excuse from public duties.

Fourth. Willfully or habitually omitting public health duties; as examples, failure to report births, still births, cases of contagious disease, cases of food poison, cases of industrial disease.

Fifth. Maintaining institutions for care of the sick, without the required permits, or for illegal purposes.

Sixth. Issuing false certificates regarding physical condition of person, with intent to deceive or defraud.

Seventh. False diagnosis, made with intent to deceive or defraud.

Eighth. Making or taking rebates in fees in any form without patient's knowledge.

Ninth. Unfairly soliciting professional business; stealing cases from professional brethren;

from hospital or from institution, through misrepresentation, direct or implied.

Tenth. Working for or with irregular persons, firms or corporations.

These are but a few of the things which happen in a large city and have come to the attention of the Legislative Bureau in a communication from Dr. S. D. Hubbard.

Is it not time that we legislate within our own body before we are called upon by the Public Group so to do?

The Legal Group known as the Bar, have no hesitancy in disqualifying their own for moral turpitude or acts performed in contravention to their code of ethics, which is ever undergoing change. And in the face of the tendency of the Public Group to legislate against the medical profession is it not our duty now to show good faith and legislate within our own group?

This might also be reasoned to include the examining of our own members from time to time to see that as individuals within the group they are keeping abreast of the times and while this may seem reactionary to some, and perhaps too radical, yet only by so doing could we prove our good intentions toward the Public Group.

Indeed only recently in a journal of a certain cult is there a hint suggesting that this cult would introduce certain bills in the legislature as an offset in medical legislation to whatsoever attacks might be brought upon this cult in the legislative halls.

Hence from the Public Group would come the inception on this legislation opening the profession to an attack and our tendency should be to avert the attack by striking the preliminary blow.

5. PRACTICAL EDUCATION OF THE LEGISLATOR AS THE MEDIATOR BETWEEN THE PUBLIC GROUP AND THE MEDICAL GROUP.

Lastly, there occurs the thought that in the aspects of legislation there must enter in the relation of the education or enlightenment of the legislator as to his duties as mediator between the public and the physician. This is not an individual professional proposition when viewed from its broader aspect. In the body politic the legislator represents a small section as ourselves, as well as others in the Public Group, therefore he must be kept informed by the Medical Group of his district as to the desires which that group seeks for the betterment of the public health, and the protection of its constituents from the inroads of unscrupulous charlatans.

County Medical Societies and other like groups must become better organized for other purposes than that of meeting once a month, of discussing differences of opinion,

with respect to scientific problems and occasionally construing the code of ethics. They must become better organized to meet their social and collective and larger opportunities and obligations.

The time is here when those who work should rise and talk and furnish the profession with leadership of proper calibre, right thinking and aggressive acting, if there is to be progress within the Medical Group, in its correlation with the other groups.

Too long have we seen the burden shouldered by the few who have set themselves to righting the problems of their fellowmen.

In treating the public as human beings, we find the various cults reviving the mysteries that we as a medical profession have abandoned through lack of scientific proof, and that is why these cults are enjoying the vogue of today.

We are appealing to the intelligence of the public and these various cults appeal to the mysterious.

It hence is our duty as a group to bestir ourselves and by education to raise the intelligence of the Public Group, by preachment and by writings, placed within their hands for reading and perusal.

A little common sense utilized now and then would prevent the unsophisticated from being duped into the idea that a thrust in the back will cure a typhoid infection, tuberculosis or kidney or bladder trouble.

One cult even has the temerity to claim that all sickness comes from misplacements of the spine and can be cured only by adjustments of the same; but most of the public at one time or another have recovered from all sorts of diseases without even knowing what an adjustment is.

This cult is continually presenting "testimonials" which are not only ridiculous, but in most instances untrue, and the medical profession rightly consider it beneath their dignity to explain or deny.

And yet education of this type is being forced through commercial channels upon our legislators and the Public Group for the purpose of warping opinion against the recognized sciences and their deductions and correlations of the present day.

In this the Medical Group sits idly by and because of the lack of initiative on the part of the individual members desiring to enter into the progression of the whole, stagnation ensues, and he who proclaims the loudest, apparently receives the credit for some new thought.

It is for the Medical Group to reverse the tendency of the time and become aggressive and collectively in a campaign of civic and professional educational thought in each community, by this means to so impress upon

those who represent us, members of the Public Group as we are, that we are deeply concerned in the welfare of those distant from us as well as in our immediate community.

The tendency of legislation this past year on the part of the Medical Society of the State of New York as represented by its Legislative Bureau, has been one of education and the fruits of our labors remain to be seen in the forthcoming session of the legislature; and how well the work has been done through our own members within our own group in the communities back home, will be charted this winter.

Deaths

BANTA, CHARLES WOODBURY, Buffalo; Buffalo Medical College, 1901; Fellow American Medical Association; Member State Society; Surgeon Buffalo City Hospital. Died September 22, 1922.

DUNHAM, CARROLL, Irvington-on-Hudson; Harvard, 1887; Member State Society. Died September 5, 1922.

FORMAN, ANDREW J., Auburn; New York University, 1897; Member State Society. Died September 23, 1922.

HATZEL, GEORGE GROVER, New York City; Long Island College Hospital, 1907; Member State Society; Consulting Physician Fordham and Seton Hospitals. Died October 5, 1922.

INGALLS, JAMES WARREN, Brooklyn; College of Physicians and Surgeons of New York, 1884; Fellow American Medical Association; Fellow American College of Surgeons; Member State Society; Consulting Ophthalmological Surgeon, Wyckoff Heights and Bushwick Hospitals. Died September 27, 1922.

LOCKE, HERSEY GOODWIN, Syracuse; College of Physicians and Surgeons of New York, 1887; Fellow American Medical Association; Member American Psychiatric Society; State Society; Academy of Medicine; Neurologist Memorial Hospital; Consulting Physician St. Lawrence State Hospital. Died October 6, 1922.

RAUTENBERG, GODFREY W., New Dorp; New York University, 1886; Member State Society. Died August 21, 1922.

ROSS, WALTER H., Brooklyn; Bellevue Medical College, 1898; Member State Society; Brooklyn Pathological Society; Obstetrician Harbor Hospital. Died August 15, 1922.

WINTERS, JOSEPH E., New York City; New York University, 1875; Member American Pediatric Society; Fellow New York Academy of Medicine; Professor Emeritus Cornell University Medical College. Died October 4, 1922.

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Editorials

THE OPPORTUNITY OF OCTOBER, 1922.

Opportunity knocks once more for those physicians of our State who are interested in worth while legislation affecting the public health, and the continued effective work of the Medical Profession.

A very few have realized the value of working through party organization. A few, having arrived at peaks which they deem successful stopping places, have cloaked themselves in dignified fatalistic isolation. While the great majority, living only for what they esteem immediate necessities, idly float upon waves of indifference and indecision.

In this pre-election month much may be done in developing the character of the next legislature. The records of candidates who are standing for re-election having been sent to every member, the County Societies should get down to fundamentals. The candidates should be examined and should declare their position upon questions affecting the medical profession and their attitude toward every sort of sub-standard practice. If they do not stand for what we think is right, we should hold to the courage of our convictions and bend every energy to defeat them. There is successful precedent for this effort, notably in Kings County, and it should be valiantly attempted in every county where the assurances of the candidates are unsatisfactory.

This is a good time to campaign for new members. The value of organization must be demonstrated to all physicians and every physician must be made to realize that he is an important element in developing an influential weight of opinion upon medico-political-social matters.

Every one admits the altruism of the Medical Profession and plays upon it. Is it not opportune to organize sharply and definitely for the causes that concern us and insist upon recognition of our strength? N. B. V. E.

CANCER.

The nation-wide cancer week, November 12 to November 18, of the American Society for the Control of Cancer should enlist the active support of every physician and he in turn should interest his patients and his general acquaintance in the work of this society.

Organic heart disease and cancer lead our mortality statistics. Reduction of these figures involves prevention and control. In heart disease, by a study of all children, and radical social changes, in cancer, by the earliest possible recognition and the earliest possible treatment.

N. B. V. E.

THE PHYSICIAN AS A PUBLICIST.

The need of physicians in public life is evident. The special knowledge possessed by a physician is essential, in the deliberations of Congress, as well as in the State Assembly and the State Senate. Especially will the physician be of use in matters of health, ever-present and of prime importance, as well as in the consideration of amendments to Medical Practice Acts, and in the discussion of the claims for exemption from ability and from education made by the Vitapath, the Naturopath, the Somatopath, the Chiropractical person, and perhaps (God knows) the Pathopath, next year.

Moreover, were there thoughtful and forceful physicians in the State Assembly and the State Senate, men who would hold their heads above the mists of petty party politics, public health service would be so elevated and guarded by legislation of their initiation as to offer attraction to the highest type of trained, competent men. Such men would gladly embrace this service as a life work, were the service properly protected, were the compensation adequate, and were the tenure of office certain for the valuable man. Who can measure the benefit to the community of such a conditioning of public health service?

The qualified physician says, of course, that he has no time for public service. True, he has none. But the sacrifice must be made by some one, for the public need is great. And who is accustomed to self-sacrifice if not the medical man, whose life is one of service to others at any cost of his own comfort, his health, his strength, his possible fortune, his family life and his longevity? Such sacrifices are made deliberately, with full knowledge, devotedly, and even passionately by those who are really fitted temperamentally and by training for the life.

An Arab proverb runs as follows :

"The world is supported by four columns:
The justice of the great,
The prayer of the righteous,
The bravery of the valiant, and
The science of the physician."

We have read in history, and we have seen during the span of our lives, doctors of medicine who combined greatness and righteousness and valor and scientific knowledge. Their power for good and for civic advancement was greatly enhanced by their mental grasp of human nature gained from their unavoidable study of human suffering and the human need.

For many years in our New York State Legislature there were no physicians. Hence the chairmen of the very important committees on Public Health were of necessity laymen, and the very valuable advice of an educated physician was lacking in the councils of the committees on Finance, Cities, Public Education, Labor and In-

dustry, and Penal Institutions, in each instance of which the intimate knowledge of the family doctor would be of unusual and illuminating, and also of great economic, importance.

The great outstanding medical publicist in recent times is of course Rudolph Virchow, who died in 1902, aged 81 years, having achieved eminence as a pathologist, anthropologist and scholar. We all know of his great work in cellular pathology; his founding about 1847 and his editing till his death of "Virchow's Archives"; his genius for the equipment of hospital corps and ambulance squads, for management of hospital trains and for conduct of field sanitation in the German wars of 1866 and 1870-71; his success in the Sanitary Bureau in Berlin; his distinction as an archeologist of such learning as to be of advantage to the great Schliemann in this master's researches in Hissarlik and in the plains of ancient Troy; his fertility as a writer on various topics in medicine, natural history and biography.

But no less remarkable was this surprisingly industrious man in his work as a publicist and office holder. Most men would have been too busy, too involved in scientific medicine, too absorbed in professional duties to give the commonwealth a thought. Not so Virchow. At 27 he was distinguished as an orator, when, in 1848, he espoused the cause of democracy and established a democratic club. Ten years later he was a member of the Municipal Council of Berlin and distinguished himself as a reformer of the police system of that city. At 41 he was chosen Deputy to the Prussian Diet and rapidly rose to the position of leader of the opposition to royal encroachments. As a founder of the Progressist Party and a subsequent member of the *deutsche-freisinnige* party, he was one of the most prominent figures of the German Reichstag for a dozen years. Truly he was a superman and a shining example of the medical publicist.

A brilliant exponent of the value in public life of the medical man is Dr. Leonard Wood, major-general, U.S.A. This versatile physician, excellent surgeon, noted sanitarian and military genius came into prominence as the choice of Theodore Roosevelt for the colonelcy of the "Rough Riders" in 1898. Besides noteworthy military service (for some of which he received the Congressional Medal of Honor in 1898), besides his accomplishments as governor of Cuba; as governor of the Moro province in the Philippines; as commander of the Department of the East, etc.; as special ambassador to the Argentine Republic; as organizer of several Divisions of the regular army; as Commander of the Central Department Headquarters at Chicago; he is now of exceptional value as governor-general of the Philippine Islands, and will soon take his seat as Provost of the University of Pennsylvania.

Another notable figure in our medical ranks is that of Dr. George Fletcher Chandler, a practicing physician of Kingston, N. Y., for whose acceptance of the position of Superintendent of the New York State Troopers (the State constabulary) Governor Whitman waited till it was possible for the doctor to accept the post. Major Chandler received his commission May 2, 1917, and took four months to organize, equip and train his men. The department consists of four cavalry troops of fifty-eight men each, and a headquarters force of five, totalling 237 men who are provided with 245 horses. Four principal barracks with many sub-stations are scattered over the State. The department co-operates with the Health, Education and Excise Departments and the Secretary of State, as well as sheriffs, district attorneys, and societies for the prevention of cruelty to children or to animals, with automobile clubs and similar organizations. Dr. Chandler organized and directs it; and its efficiency and signal success are largely due to him.

The citizen who has had in youth the privilege of collegiate training (especially the mental gymnastics afforded by the conscientious study of mathematics), and who has made psychology a daily exercise during years of medical practice, is pre-eminently fitted to learn with celerity the ways and conditions of public life, and to become a valuable public servant. Naturally, to be of the most service, he should have some facility in the use of language, and have an engaging personality.

The farmer must have representation in the Halls of Congress, because of his inestimable services in raising food for us all. By equal reasoning the physician should have representation, because he keeps the farmer in sufficiently healthy condition to till the soil, and restores him after the ravages of patent medicines and quacks.

Not that the physician in Congress would demand or desire to form a bloc, to impede legislation or shackle the executive, or to oppose deflation or to "commit the government banking system to holding up artificially the prices of foodstuffs" or anything else. But the medicomember of the House of Representatives would certainly prevent a continuance of or a repetition of such a piece of injustice and of folly as to put wounded, disabled and crippled soldiers in the hands of chiropractics for care and treatment and rehabilitation, as has been done by the War Department of the United States in the State of Missouri. This disposition of our country's defenders is a revolting blot on the record of that Department, and a lasting disgrace to all concerned in its perpetration.

The country demands the immediate entrance into public life of mature, broadly educated physicians.

A. W. F.

NEWSPAPER MEDICINE.

Deplorable and dangerous is the trend of the day, which leads people to seek to learn medicine from the newspapers.

The great showman of a generation ago, Phineas T. Barnum, declared "The American people loves to be humbugged."

Prof. Albert B. Hart uses the happy phrase, "The criminal good nature of the American people."

Upon the convening of a special session of Congress one December some 20 years ago, when new members elected the previous month took their seats, and Thomas B. Reed was re-elected Speaker of the House of Representatives, a friend asked him, "How does the new House size up, Mr. Reed? Are the new members promising material?" "Well," deliberately answered Mr. Reed, "the personnel of the damn fool changes, but the percentage is constant."

Here, then, are suggested three of the classes with whom we must reckon: the simpletons, the indolent and the damn fools.

Each one of them is easily impressed, easily convinced, easily hoodwinked. Is any of them equipped to transmit a capable posterity? Statements in print reeking with utter absurdity, and miasmatic with complacent mendacity are accepted as gospel truth by a large proportion of our people.

Most physicians are too busy to teach the elementary truths regarding disease, or to inculcate caution against swallowing medical assertions merely because they are startling or because they tickle the mental palate. One goes to a lawyer for law; but one is apt to accept pseudo-medicine casually from the man in the street or the charlatans, or from any of their printed utterances.

It is amazing that reputable metropolitan dailies should print, uncensored by easily secured medical supervision, tales and statements that would be screamingly funny were they not damaging to the average unthinking reader. Very recently a case in point was presented by a New York daily which incorporated in an article said to be quoted largely from a London lay periodical such statements as: "Appetite is, generally speaking, a safe guide"; and "The great anti-diabetic diet, which has had for nearly a century unchallenged sway, is now tottering to a fall." What is this monster, "the great anti-diabetic diet"? If there be one, only one, let him totter. In this article the expression "to go on a diet" is considered equivalent to saying "to reduce the weight by dieting." There is no equivalency; for all persons who care for present health and for the preservation of youth, together with the securing of longevity, go on a proper diet, for upbuilding, or for reducing or

for maintaining. They are foolish if they do not.

We read also in this article, "Diet is for nourishment." What profundity! What a discovery! What a startling proposition to defend! We are led to recall the old "bromide" excerpted from a witty drama, "It is to laugh."

Seriously, how can these very frequent instances of banal and childish or really unsettling and damaging publications be prevented? Obviously by immediate remonstrance to the editor-in-chief of the periodical, with the suggestion that subscribers prefer that the newspaper restrict its presentations in the news columns to real news, relegating fiction and imagination strictly to the supplement.

The elder James Gordon Bennett once defined news as "An unpublished event of present interest."
A. W. F.

Correspondence

The Council at a meeting held in Albany, April 20, 1922, moved, seconded and carried

That the Journal be not used in any way suppress any expression of opinion; and that its correspondence columns be open for all proper communications; and that "proper" communications will be deemed those which are not slanderous or libelous in their nature.

Editor of the NEW YORK STATE JOURNAL OF MEDICINE:

DEAR DOCTOR: The American Society for the Control of Cancer will undertake a National Cancer Week from November 12 to November 18. In every State in the United States an effort will be made to bring the facts about cancer to the attention of the public, with the hope that publicity will send persons with lesions and symptoms that may be malignant to the physicians as soon as they are discovered, with the possibility of suitable early treatment. By this means it is hoped that the death rate from cancer in the United States will be reduced by at least thirty per cent.

New York State is divided for the purposes of this work into a metropolitan district, which includes Westchester County and the remainder of the State. Dr. John M. Swan, of Rochester, is the Chairman of the Up-State Committee. The State has been divided into Districts corresponding to the District Branches of the State Medical Society. In each District a member of the State Committee is in control of the activities as District Chairman.

These District Chairmen are: Dr. Helen L. Palliser, Poughkeepsie; Dr. Clinton B. Hawn, Albany; Dr. Willis Van Der Wart, Schenectady; Dr. Thomas P. Farmer, Syracuse; Dr. Arthur W. Booth, Elmira; Dr. William I. Dean, Rochester; and Dr. Marshall Clinton, Buffalo.

During Cancer Week, the District Chairman will need assistance from those members of the profession who are interested in Public Health movements. It is hoped that we shall be able to bring the facts about cancer to the attention of every person in the State who is willing to hear them. Any physician who is willing to help in this task or who has constructive suggestions to offer is requested to communicate with his district chairman and offer his services without waiting to be asked to do so.

Last year New York State gave 143 lectures to 19,105 persons and distributed 60,500 pieces of literature. We hope to increase these figures this year.

The work of the American Society for the Control

of Cancer was endorsed by the House of Delegates of the Medical Society of the State of New York at its Brooklyn meeting in 1921.

Rochester, N. Y.

JOHN M. SWAN.

September 28, 1922.

The Editor, NEW YORK STATE JOURNAL OF MEDICINE:

DEAR DOCTOR: A 200-word challenge, by a mere member, of Annual Reregistration propaganda by the State Society Legislative Committee Chairman (page 432, September issue), is difficult.

Section 169 will make Twenty-Seven Years' active practice a condition-precedent to establishing a Clear Right to exercise of discretion in one's favor, which is the *sine qua non* of granting Relief by Mandamus, if discretion be exercised Against a doctor in fulfilment of the threat of Compulsory Health Insurance Campaigners (1919) to "take away your license under the Police Power of the State if you refuse to become panelized." Result: Panelization or cessation from practice.

Those graduated After 1895, having No Clear Right, would be denied Relief by Mandamus.

The Chiropractors, this year, making Virtue of Necessity, protected us while saving themselves, and defeated that bill.

We need an annual census of doctors as much as fish need bathing suits.

Already existing law can eliminate illegal practitioners if enforced.

Decent medicine can not exist half paralyzed and half panelized, to paraphrase Lincoln.

You have a right to my reason for this warning. As the flappers say: "Try and get it."

An ounce of prevention is worth a pound of regret. Wake up!

JOHN J. A. O'REILLY, M.D.

405 Union Street, Brooklyn, N. Y.

NOTES FROM THE STATE DEPARTMENT.

COURT SUSTAINS POWER TO REGULATE MIDWIFERY.

At the September term of the Appellate Division of the Supreme Court a decision was handed down which sweepingly sustains the power of the State Commissioner of Health to grant or withhold licenses to practise midwifery, as provided for by the Public Health Law and the State Sanitary Code. A midwife practising in Utica, who had been refused a renewal of her license because of evidence that she had performed an abortion, obtained in March of this year a court order directing the issue of a license. The Department appealed the case and the Appellate Division has now reversed the order of the lower court, upholding, in a vigorous opinion by Justice Kellogg, the discretionary powers of the Commissioner to issue or not to issue annual licenses to midwives as provided for by law. The opinion states that even if the midwife had not committed an abortion she would not thereby have established an absolute right to the license applied for. The Court instances a long line of precedents sustaining the absolute discretion of administrative officers to grant or withhold licenses and similar privileges, which they have been empowered, but not expressly required by statute to grant. "Certainly if the public good demands," says the opinion, referring to these precedents, "that administrative officers be vested with plenary powers to determine the fitness of applicants to conduct taverns, to give theatrical entertainments, to conduct auctions, to practise osteopathy, to become policemen and superintendents of public works, then the discretion of the State Commissioner of Health to reject as unfit an applicant for a license to practise midwifery—a profession which offers convenient opportunity for criminal practices, ought to be plenary and free from judicial review

or compulsion. We think that the Commissioner of Health, having in his possession information to the effect that the relator, while previously a licensee, had performed criminal abortions, was wholly within his rights in refusing to her a license to practise midwifery."

The decision was also accompanied by an illuminating review of the case, written by Justice Hinman, who pointed out that this midwife had made no attempt to disprove before the Court the specific charges brought against her by the State Commissioner of Health, but had rested her case on a general denial of knowledge of the grounds of the refusal of license, and on an alleged right to a hearing which her counsel had never asked for. "Her sole authority to practise as a midwife," said Justice Hinman, "must be based on full compliance with the law." Since that law requires evidence of moral character which shall be satisfactory to the Commissioner of Health it involves the exercise of judgment and discretion in the granting of such licenses.

The position of the State Department of Health in relation to the control of midwives is greatly strengthened by this decision and by new statutory provisions enacted by the Legislature last winter.

SMALLPOX AMONG THE INDIANS OF NORTHERN NEW YORK.

On September 5th, Dr. Sayer, district sanitary supervisor, reported ten cases of smallpox among the Indians of the St. Regis Reservation, which lies partly in Franklin County and partly in Canada. The disease has broken out several times on this and other Indian reservations during the last few years. In 1917 ninety-six cases occurred on the Cattaraugus Reservation, an epidemic had to be declared by the State Commissioner of Health, and the measures required to control the outbreak cost the State thousands of dollars. Hoping by quick action to avoid a repetition of that experience this year, the Department immediately detailed an epidemiologist to assist Dr. Sayer and two local physicians in conducting a wholesale campaign of voluntary vaccination. Securing the co-operation of the Indian chiefs, the clergymen, and other leaders, the four physicians succeeded in vaccinating in three days about eight hundred Indians and one hundred white residents of Hogansburg, the village at the center of the reservation. There are about thirteen hundred Indians on the American side of the reservation, and seventeen hundred on the Canadian side. Having reached practically all the non-immune Indians on this side, the Department took up the matter with the Canadian authorities, and hopes that they will carry out similar measures across the border.

THE INFECTION SPREADS.

Two cases escaped from the reservation, however, and before they could be put under sanitary control the patients came in contact with enough people to start further outbreaks in Northern New York, and the local authorities are on the watch for developments. Two Indian girls recently left the reservation and went to work in a hotel in Carthage, where they developed an eruption which caused the other employees to avoid them. The disease was not diagnosed, however, and when the proprietor finally discharged the two girls they took a public bus to Watertown, where they were discovered by the health officer, Dr. Barnette, and sent to hospital. The sanitary supervisor, Dr. Hervey, quickly investigated all contacts both at Carthage and Watertown, ordered vaccinations, endeavored to trace the other passengers on the bus, and issued warnings through the press. It is believed that at least one of the girls had the disease when she left the reservation, but with the lack of health officers and medical service among the Indians it is difficult to prevent such occurrences.

SMALLPOX IN WESTERN NEW YORK.

Meanwhile another focus of the disease has appeared in Jamestown, where a young woman returning from a visit in Ohio developed smallpox and infected several members of her family and their friends. The local situation appears now to be under control, but with smallpox constantly threatening the State from one side or another, the State Commissioner of Health has repeated his warnings to the public through the newspapers that vaccination must not be neglected, if we wish to avoid serious outbreaks of the disease. Fortunately the epidemic in Connecticut has subsided, but smallpox seems to be endemic along the Canadian border, and is constantly breaking through into New York. A total of 146 cases has been reported in the State outside of New York so far this year. Forty-six of these were recorded in the one week ending September 23. The Department's campaign of education regarding vaccination will include the renewed use of educational posters in railway stations and other public places.

MEETING OF REGIONAL CONSULTANTS IN MATERNITY AND CHILD HYGIENE.

The State Department of Health has recently asked eighteen prominent obstetricians and pediatricians of the State to serve as an advisory board in connection with the campaign for the reduction of maternal and infant mortality, which the Department has organized under the provisions of the Davenport-Moore Act. On September 20 the first meeting of these consultants was held at Albany. The Commissioner of Health, Dr. Biggs, and Dr. Florence McKay, Director of the Division of Maternity, Infancy and Child Hygiene, outlined the program and asked the several consultants, fifteen of whom were present, to take the lead in enlisting the co-operation of the medical profession in their respective districts, by appearing before county societies and other professional gatherings to explain the purposes of the Act, and to describe the methods relied upon to advance the general object of saving the lives of mothers and babies which are now needlessly sacrificed. Following is the list of those who have so far accepted the Department's invitation to serve as consultants:

REGIONAL CONSULTANTS IN PEDIATRICS.

Dr. Henry L. K. Shaw, Albany, N. Y.
 Dr. Albert D. Kaiser, Rochester, N. Y.
 Dr. Charles H. Smith, New York City.
 Dr. Edward J. Wynkoop, Syracuse, N. Y.
 Dr. DeWitt H. Sherman, Buffalo, N. Y.
 Dr. Norman, L. Hawkins, Watertown, N. Y.
 Dr. Royal S. Haynes, New York City.

REGIONAL CONSULTANTS IN OBSTETRICS.

Dr. James K. Quigley, Rochester, N. Y.
 Dr. Harold C. Bailey, New York City.
 Dr. Arthur C. Martin, Rockville Ctr., N. Y.
 Dr. Francis C. Goldsborough, Buffalo, N. Y.
 Dr. Reeve B. Howland, Elmira, N. Y.
 Dr. Paul T. Harper, Albany, N. Y.
 Dr. Page E. Thornhill, Watertown, N. Y.
 Dr. Stuart B. Blakely, Binghamton, N. Y.
 Dr. Henry W. Schoeneck, Syracuse, N. Y.
 Dr. Ralph W. Lobenstine, New York City.
 Dr. Frank H. Richardson, Brooklyn, N. Y.

NURSES ENROLL FOR CORRESPONDENCE COURSE.

The growth of public health nursing in New York State has been so rapid in recent years that to fill positions in this field communities have been forced to employ nurses without particular training in public health. Heretofore the only courses of instruction available have been residence courses of not less than several weeks' duration, and nurses already in the field could

not well devote the time necessary for the completion of one of these. In view of this fact Commissioner Biggs has obtained the co-operation of the University and Bellevue Hospital Medical College in inaugurating an extramural course in public health nursing.

This course will require one year for its completion and will include a week of resident instruction at one of several points in the State. It is hoped that in this way an opportunity which otherwise would be lacking may be afforded for public health nurses to become familiar with the newer facts relating to public health.

The response to the announcement of this course has been much greater than was anticipated, and it has become necessary to refuse more than two hundred applicants for the present class; subsequent classes will be organized to take care of these and future applicants. The course began on September 5th with 250 students enrolled.

POLIOMYELITIS.

From January 1 to September 18 of this year a total of 157 cases of poliomyelitis has been reported in the State outside of New York City. The distribution of these cases by counties is as follows:

Albany	2	Oneida	21
Broome	1	Onondaga	30
Cattaraugus	5	Orange	3
Cayuga	27	Oswego	1
Chautauqua	2	Otsego	1
Chemung	1	Rensselaer	2
Cortland	6	Rockland	1
Dutchess	3	St. Lawrence	14
Erie	5	Schoharie	1
Essex	2	Steuben	1
Franklin	3	Suffolk	6
Genesee	1	Sullivan	1
Herkimer	2	Tompkins	4
Lewis	1	Washington	1
Montgomery	2	Wayne	1
Nassau	5	Westchester	11

THE UNIVERSITY OF THE STATE OF NEW YORK.

The Regents of the University of the State of New York have determined that one session of the annual Convocation shall be devoted to the presentation and discussion of the problems of medical education and practice. Some of the most capable men in the profession, both within and without New York State, will address the Convocation and the leaders of medical education in this State will discuss their papers. All members of the State Society are cordially invited to be present. Two o'clock on Thursday, October 19, is the time, and Chancellors Hall, Education Building, Albany, is the place. Bear this in mind.

THE NEW YORK SOCIETY OF ANESTHETISTS.

Physicians interested in anesthesia and desirous of receiving notice of the meetings of the New York Society of Anesthetists will please so inform the secretary, Dr. A. F. Erdmann, 458 Ninth Street, Brooklyn, N. Y.

AMERICAN ASSOCIATION OF ORAL AND PLASTIC SURGEONS.

The second annual meeting of the American Association of Oral and Plastic Surgeons will be held in Boston at the Boston Medical Library, Friday and Saturday, October 20 and 21.

An interesting program has been arranged and those interested in this field of surgery are cordially invited to be present.

ARMENIANS HONOR AMERICAN PHYSICIANS.

Four American physicians have just been made honorary members of the Medical Society of Armenia, in recognition of the fact that their "work in connection with the Near East Relief has been of great importance in the work of saving the Armenian nation from the ravages of post-war diseases."

Of the four Americans, two are women, sent by the American Women's Hospital Association. These are Dr. Elfie Graff of Vassar College, now serving at Karaklis in Armenia, under whose direction the Near East Relief started child welfare clinics and other medical social work in Constantinople; and Dr. Mabel Elliott of Benton Harbor, Michigan, stationed at Alexandropol in Russian Armenia, and head of the largest medical unit in the Near East, which cares for over 20,000 children and thousands of refugees. She has served in the Near East for several years, passing through the siege of Marash and massacre of 12,000 Armenians, and refusing to leave her patients in Ismid during the Turkish occupation of that city.

The other physicians honored are Dr. R. P. Blythe of Cranford, New Jersey, district physician of Kazachi Post, the boys' orphanage accommodating 7,000 at Alexandropol; and Dr. Russell T. Uhls of Kansas City, in charge of the medical work at Seversky Post, Alexandropol, the trachoma hospital for Near East Relief orphans, which is caring for and gradually curing over 3,000 child patients, and is known as "The Largest Children's Hospital in the World."

NOTES.

The cornerstone of the new unit of the Union Hospital at Valentine Avenue and 188th Street, Bronx, will be laid on Sunday, October 8. The building nears completion and will add about sixty beds to the present hospital.

The Sisters' Hospital of Buffalo will celebrate their Diamond Jubilee the latter part of October. This affair will be about the biggest Buffalo has entertained in years, inasmuch as noted surgeons from all parts of the world will give a three-day clinic. An elaborate illustrated souvenir program will be issued, containing a history of the hospital and other valuable data for future reference.

Foundation Day Exercises commemorating the Founding of the Medical Society of the County of Kings were held at the MacNaughton Auditorium, Library Building, Brooklyn, on Saturday evening, October 7th. One of the interesting events of this meeting was the reading by Dr. Lewis P. Addoms of the minutes of the first meeting of the Society.

Dr. Thomas W. Jenkins, President of the Albany County Medical Society, delivered the address of welcome at the 1922 session of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, held in Albany, N. Y.

Dr. Albert Vander Veer of Albany was given a rousing and enthusiastic greeting at the above meeting. Dr. Vander Veer is one of the original founders of this society.

The United States Civil Service Commission announces an open competitive examination for laboratory aid in bacteriology on November 8, 1922. Vacancies in the Bureau of Animal Industry, Department of Agriculture, for duty at Denver, Colo., and in positions requiring similar qualifications in Washington, D. C., or elsewhere will be filled from this examination. Applicants should apply for Form 1312, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C.

PRUNES.

*Contributions Solicited***Diurnal Amelioration.**

[The formula of the Coué method of auto-suggestion is: Day by day in every way I am getting better and better. I think this might prove more effective if put into verse, and I submit the following to those Conning Towerites who may be using the Coué method. There are incidental acknowledgments to be made to the author of "Ruddigore."]

I have eighty separate ailments by the newest diagnosis,
Ranging all the way from fever to arterio-sclerosis;
There are pains around my kidneys more severe than
tongue can utter;
My digestion simply isn't and my heart has quite a
flutter;
There is something bent or missing in the strongest of
my vitals,
And the finest organ in me's off the key in its recitals;
Yet my mind is all unconquered and acknowledges no
fetter,
For in spite of all my aches and pains, I know I'm
getting better.
Oh! I'm really getting better, better, better, better,
better;
Yes, I'm really getting better, better, better, better,
better;
Yea, I'm really getting better, nay I'm really getting
better;
So I'm really getting better, better, better, better, better.
TAPESTRY, *N. Y. World.*

Cou-Coué.

A good Coué story has been told:

A certain man suffered acutely from bow legs. He was advised by a friend to repeat the Coué formula every night thirty times: "Every day and in every way my legs are getting straighter and straighter."

Unfortunately he miscalculated the number and repeated the magic words sixty times every night. As a result he is now knockkneed.—*London Morning Post.*

Repeated History.

"That is rather an extreme gown Miss Golden is wearing. Do you notice how it is held up by a single strap over one shoulder?"

"Yes, and it reminds me of old times. I knew her grandfather when he had but one suspender and wore it just the same way."—*The Christian-Evangelist (St. Louis).*

King Richard, absent-minded ass,
Forgot to fill his car with gas.
He therefore shouted, until hoarse,
"A horse, my kingdom for a horse!"

—*Illinois Siren.*

A village newspaper contains this reference to the local hospital achievements: "Our esteemed fellow citizen Abner Brown will go to the hospital tomorrow to be operated on for appendicitis. He will leave a wife and two children."

He was a milkman with a sense of humor. "Why are you so late with our milk this morning?" asked one old lady. "Well, you see, mum," he answered, "it's like this. The law allows us 25,000 bacteria to the gallon, and you wouldn't believe how long it takes to count the little beggars."—*Tit Bits (London).*

An eminent physician, attended by a number of medical students, was making the round of a hospital ward, and stopped beside a bed whereon lay a man with a very prominent chest.

The physician, having elicited from the sick man the fact that he was in the habit of playing a wind instrument, went on:

"Yes, yes; all the puffing and straining is most prejudicial to the lungs, most prejudicial.

"What wind instrument used you to play?" he asked, addressing the patient.

To the huge delight of the students the patient replied:

"The concertina, sir."—*Detroit News.*

My Headstone.

At last, I have found it, the ideal elegiac, terse, modest, and with just the requisite quality of dignified regret. It runs:

"Here lies a man who would have laughed
To read how he was epitaphed."

BEACHCOMBER, in *London Express.*

Not Equal to Father.

The King of Siam, whose father has 300 wives, has just married his first. It looks as though he would never be the husband his father was.—*St. Paul Pioneer Press.*

Jack: Why, Bernice, I thought you had gone with Archie to learn golf.

Bernice: I did, but the fresh old thing told me I'd forgotten my brassie.—*Cornell Widow.*

The perfectly healthy man, in our humble opinion, is the person who can read one of these syndicated advice to the ailing columns without discovering that he is host to a couple of hitherto unsuspected diseases.

The *Cornell Widow* thus out-Herrickicks Herrick:

Whenas in knickers Julia goes,
Till then, methinks, one scarcely knows
The purpose served by common clothes.

For when I drop my eyes and see
Parentheses from foot to knee,
Oh, how her rashness shocketh me!

Mrs. Stanton Coit, wife of the well-known ethical culturist, stood engrossed in conversation with Bernard Shaw, when suddenly she exclaimed: "Oh, look! There is my husband dancing; he has not done so for years." "Don't be alarmed," said Shaw, "he isn't dancing; that's the ethical culture movement."—*Survey.*

"Now, Fretty," feebly began an Ozark invalid, "I'm feeling considerable better this morning, and if you'll hand me my pants I reckon I'll get up for a spell."

"Land o' Gideon, no!" ejaculated his wife. "There's mighty nigh half of that bottle of medicine left that I paid a dollar for. You stay right there in bed till you've took it all!"—*Kansas City Star.*

Shopper: "I want to get a fashionable skirt."

Saleslady: "Yes, madam; do you want it too tight or too short?"—*Life.*

District Branches

FOURTH DISTRICT BRANCH

ANNUAL MEETING, SCHENECTADY, N. Y.

TUESDAY, SEPTEMBER 26, 1922

The Annual Meeting of the Fourth District Branch was called to order in the Health Center Building by the President, Dr. Edwin Stanton, at 11:15 A.M.

There was an attendance of over one hundred.

Due to the lateness of the hour, the regular business session was postponed until the afternoon and the scientific program taken up at once. The first paper was by Dr. William L. Wallace of Syracuse, the subject being, "The Chiropractic Menace." This was followed by a paper by Dr. John M. Swan of Rochester: "Can Anything Be Done to Control Cancer?" The third paper of the morning was by Dr. Edward Livingston Hunt, Secretary of the State Society on "Common Forms of Nervous Diseases." This was accompanied by a motion picture, illustrating the various pathological gaits and other objective symptoms seen in the Common Neurological diseases as mentioned in Dr. Hunt's paper. A recess was declared until 2:30, during which time the members of the Branch were guests of the President at luncheon.

The afternoon session was opened at 2:30 and the regular order of business taken up. The following officers were elected for two years: President, Dr. Charles C. Trembley of Saranac Lake; First Vice-President, Dr. H. M. Hicks of Amsterdam; Second Vice-President, Dr. L. G. Barton, Sr., of Plattsburg; Secretary, Dr. John E. Free of Ogdensburg; Treasurer, Dr. Frank J. Sherman of Ballston, Spa.

There were no reports of Committees, unfinished or new business so the Scientific program was then resumed.

The first paper of the afternoon was by Dr. E. MacD. Stanton of Schenectady, the subject being: "The Problem of Hospital Costs and the Training School Problem from the View Point of a Surgeon."

This paper evoked an extended discussion by Dr. Schiff and Dr. Rogers of Plattsburg, Dr. Hicks, Conant and Canna of Amsterdam, Dr. Towne of Saratoga and Dr. Robert T. Morris of New York. The second paper of the afternoon was read by Dr. Don Hutchins of Cambridge on the "Clinical Importance of Estimating Blood Sugar." The final paper of the afternoon was an address by Dr. R. T. Morris of New York, "The Four Eras of Surgery."

County Societies

COLUMBIA COUNTY MEDICAL SOCIETY

ANNUAL MEETING, HUDSON, TUESDAY, OCTOBER 3, 1922

The meeting was called to order at the "Worth" with the following members present: Drs. Bradley, Collins, Edwards, Galster, Garnsey, King, Mambert, Maxon, Niver, Oliver, C. G. Rossman, G. W. Rossman, J. B. Southworth, Van Hoesen, Waterbury, Whitbeck, Wilson and Skinner. Guests: Drs. Gorham and Early of Albany.

The minutes of the last regular meeting were read and approved as read.

The following officers were elected: President, John L. Edwards, Hudson; Vice-President, Frank B. Wheeler, Hudson; Secretary and Treasurer, Charles R. Skinner, Hudson; Censors, Drs. Van Hoesen and C. G. Rossman of Hudson, Waterbury of Kinderhook, Maxon of Chatham, and Nichol of Philmont.

The Treasurer's report showing a membership of 41 and a balance in the treasury of \$196.98 was read and approved.

The following resolutions were adopted.

WHEREAS, The Silent Reaper of Death has severed the ripened years of life and gathered to the feast above, one of our members; be it

RESOLVED, That one of the pages of our records be inscribed to the memory of Dr. Nelson H. Mesick, who gave his services alike to the poor and well to do; who, while yet active, though he had reached the allotted span of life, was suddenly taken from the family circle and friends. His presence at our meetings was always a pleasure and will remain a pleasant memory of one of whom, in passing, it can be said, "the good old family doctor."

BE IT FURTHER RESOLVED, That the society send a copy of this resolution to the widow, expressing our sympathy in the death of her husband.

The committee appointed to present a schedule of fees for surgical work was, upon request, granted further time.

Other resolutions adopted were:

WHEREAS, There have appeared in the newspapers and drug store windows signs which read "Try the drug store first," and

WHEREAS, The adoption of such advice will lead to serious results in many cases of human ailments, and to the illegitimate practice of medicine by druggists,

BE IT RESOLVED, That the Columbia County Medical Society condemn the use of such signs and that copies of this resolution be sent to all druggists in the county.

RESOLVED, That it is the sense of this society that the practice of having the names of physicians appear in the press as associated with their professional work and care of patients is unethical and unprofessional and that we disapprove of the same.

RESOLVED, That this society disapproves the practice of "fee splitting" on the ground that it is unethical and unprofessional.

Copies of the last two resolutions were ordered published in the local papers and mailed to the members of the society.

After an hour's intermission for lunch the meeting was resumed with the following program:

President's Address, Dr. Henry C. Galster.

"Importance of Protein Hypersensitiveness in Hay Fever and Asthma," Dr. L. W. Gorham.

Demonstration of Schick Test and talk on "Immunization Against Diphtheria," Dr. Lawrence Early.

MEDICAL SOCIETY OF THE COUNTY OF QUEENS

REGULAR MEETING, JAMAICA,

TUESDAY, SEPTEMBER 26, 1922.

The meeting was called to order in the Grace Memorial Chapel.

Preceding the scientific session, the president, Dr. Thomas C. Chalmers, presented a report on the annual meeting of the American Medical Association in St. Louis, which he attended as a delegate from the State Society.

The scientific session consisted of a symposium on tuberculosis.

"Epidemiology of Tuberculosis," H. R. M. Landis, M.D., Director Clinical and Surgical Department, Henry

Phipps Institute for the Study, Treatment and Prevention of Tuberculosis, University of Pennsylvania.

"Diagnosis of Early Pulmonary Tuberculosis," Lawson Brown, M.D., Saranac Lake, President National Tuberculosis Association.

"Treatment of Surgical Tuberculosis by Use of Light in the Home and Office," Edgar Mayer, M.D., Saranac Lake.

"Purpose of Queens County Tuberculosis Association," Thomas J. Riley, Ph.D., General Secretary Brooklyn Bureau of Charities and member of Board of Managers Queens County Tuberculosis Association.

A discussion followed by Charles B. Slade, M.D., Harmon Smith, M.D., T. A. McGoldrick, M.D., George Ornstein, M.D., E. E. Keet, M.D., C. B. Story, M.D., H. C. Courten, M.D.

There was a large attendance

After adjournment the members partook of a collation.

MEDICAL SOCIETY OF THE COUNTY OF ALBANY

REGULAR MEETING, ALBANY, SEPTEMBER, 1922

The society was called to order by the president. Resolutions were passed on the death of Dr. Eli S. Persons of Slingerlands.

The following scientific program was presented:

"The Duodenal Tube," by Dr. Nelson K. Fromm. Discussed by Drs. Neuman and Fromm.

"Acute Intestinal Obstruction," by Dr. Stanley E. Alderson. Discussed by Drs. Dickinson, Jenkins, Gutmann, Kellert, Barrett and Alderson.

MEDICAL SOCIETY OF THE COUNTY OF WESTCHESTER

STATED MEETING, EASTVIEW,
TUESDAY, SEPTEMBER 19, 1922

The meeting which was called to order at the Grasslands Hospital. After a short business session and the election of new members the following was presented.

SCIENTIFIC SESSION

"Phosphorus Poisoning," with report of a case, Arthur S. Corwin, M.D., Rye.

"Report on Miscellaneous Fracture Cases," illustrated with lantern slides, Jason S. Parker, M.D., White Plains.

"Discussion of the County Health Officer," Matthias Nicoll, M.D., New York State Health Department.

MEDICAL SOCIETY OF THE COUNTY OF ST. LAWRENCE

ANNUAL MEETING, OGDENSBURG, N. Y.
TUESDAY, OCTOBER 3, 1922

The meeting was called to order in Curtis Hall, St. Lawrence State Hospital.

The minutes of the last meeting were read and approved as read.

President's Address, Melvin J. Stearns, M.D.

The following officers were elected for the year 1923:

President, Frederic C. Mason, Massena.

Vice-President, Charles T. Adams, Edwards.

Secretary, Samuel W. Close, Gouverneur.

Treasurer, Charles T. Henderson, Gouverneur.

SCIENTIFIC PROGRAM

"The Intravenous Administration of a Foreign Protein in Arthritis," F. B. Sanford, M.D., Morley.

"Treatment of Patients in the State Hospital," J. B. Pritchard, M.D., Ogdensburg.

"Discussion of Some Modern Problems Confronting the Medical Profession." Report of two cases, H. A. McIlmoyle, M.D., Ogdensburg.

"Preventive Medicine," C. C. Van Waters, M.D., Ogdensburg.

"Gall Stones, with citation of case associated with Epidermoid Carcinoma of Gall Bladder," C. G. Andrews, M.D., Canton.

MEDICAL SOCIETY OF THE COUNTY OF WASHINGTON

ANNUAL MEETING, HUDSON FALLS

TUESDAY, OCTOBER 3, 1922

Meeting was called at 11 A. M. Members present: Drs. Stillman, Byrnes, Prescott, Pashley, Paris, Lee, Banker, Munson, Sumner, Fortune, Park, Blackfan, Ketchum, Davies, Casey, LaGrange, Orton, Madison. Visitor: Dr. H. L. K. Shaw from the State Department of Health.

The following officers were elected for 1923: President, Harry Blackfan; Vice-President, R. H. Lee; Secretary, S. J. Banker; Treasurer, R. C. Paris; Censors, J. L. Byrnes, Z. V. D. Orton, R. E. Plunkett.

President appointed R. A. Heenan, G. M. Stillman, G. D. Wilde, Committee on Legislation.

Dr. Byron C. Tillotson was elected to membership.

Treasurer reported a balance of \$61.75 in treasury and two members still to pay.

AFTERNOON SESSION

The following resolutions on the death of Dr. Hughes were adopted:

WHEREAS, Dr. Herbert G. Hughes, a member of our Society, died on May 17th after a very brief illness, and

WHEREAS, Dr. Hughes was 28 years of age and was graduated from the University of Indiana; in 1918 he served two years in the U. S. Navy during the world war and was discharged with the rank of First Lieutenant, and

WHEREAS, Dr. Hughes was a man of pleasing manner, kind and conscientious, of exceptional ability and skill for a man of his age and his death is a distinct loss to the community and our society.

Therefore Be It Resolved, That the Medical Society of the County of Washington, express to the widow of our deceased brother our profound sympathy in her bereavement, and,

Be It Further Resolved, That a copy of these resolutions be sent to Mrs. Gertrude Hughes, and be also spread on the minutes of this society.

Committee: H. H. BLACKFAN,
W. A. LEONARD,
F. G. KETCHUM,
S. T. FORTUINE.

The president gave a very instructive address on Chemistry to the rescue, and explained the wonderful results obtained in the chemical preparation of some of our drugs.

Dr. Banker gave his experience of forty years in obstetrics.

Dr. Shaw explained the object of the new maternity law and appealed to the physicians to aid in carrying it on.

The meeting adjourned to meet in Hartford in May.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

ASHBY AND WRIGHT'S DISEASES OF CHILDREN, MEDICAL AND SURGICAL. Revised by H. T. ASHBY, B.A., M.D. (Camb.), M.R.C.P. (Lond.), Honorary Physician Manchester Children's Hospital, Visiting Physician for Children to the Manchester Board of Guardians, Physician to the Salford Royal Hospital, and CHARLES ROBERTS, M.B., B.S. (Lond.), F.R.C.S., Consulting Honorary Surgeon Manchester Children's Hospital, Honorary Surgeon Manchester Royal Infirmary. Sixth Edition, thoroughly revised and re-written. Oxford Medical Publications, 1922. Price \$12.50.

THE HEART AS A POWER-CHAMBER, A CONTRIBUTION TO CARDIO-DYNAMICS. By HARRINGTON SAINSBURY, M.D., F.R.C.P., Fellow of the Physiological Society, Consulting Physician Royal Free Hospital and City of London Hospital for Diseases of the Chest, Examining Physician to the Royal National Hospital, Ventnor. Oxford Medical Publications, 1922. Price \$3.75.

A PRACTICAL MEDICAL DICTIONARY. By THOMAS LATHROP STEDMAN, A.M., M.D., Editor of the "Twentieth Century Practice of Medicine" and of the "Reference Handbook of the Medical Sciences"; formerly editor of the "Medical Record." Seventh Revised Edition. Illustrated. William Wood & Company, New York, 1922. Price \$7.00 net.

Book Reviews

PSYCHOANALYSIS: ITS THEORIES AND PRACTICAL APPLICATION, by A. A. BRILL, Ph.B., M.D., Lecturer, Psychoanalysis and Abnormal Psychology, New York University. Third Edition, thoroughly revised. Octavo 468 pages. Phila. and London: W. B. Saunders Co., 1922. Cloth, \$5.00 net.

This book of Brill's is one that can be highly recommended to anyone wishing to learn something of the essentials of Psychoanalysis. In fact, read in conjunction with the "Papers on Psychoanalysis" by Ernest Jones, the distinguished British analyst, it will give the average general practitioner a very excellent idea of the theory and technique of Psychoanalysis.

Psychoanalysis has had a rather hard road to travel, but for the past few years, nearly all the well-known psychopathologists recognize it as a valuable method of studying the unconscious. Therefore the fact that Brill's book is now in its third edition is sufficient proof of its worth and popularity. It is the serious conservative student, like Brill, who has elevated Psychoanalysis to its proper place in medicine. The general reader must not confound works like his with the writings of half-trained "analysts" who write for lay journals, which rather tend to discredit the theory.

In fact, the support of men like Brill, Jelliffe, White, etc., has induced a large part of the thinking members of the profession to study this theory.

It is unnecessary to go into details in reviewing this book. His chapter on Paraphrenia is very interesting. However it does not remove the doubt as to whether we yet have any such definite symptom-complex as Paraphrenia. Some writers in their books do not even mention the term,—e. g., Rosanoff. Others include under this heading all sorts of Dementia Praecox reaction-types; and others include almost any inaccessible type, and many types suffering from compulsions.

We highly recommend the book. One might in fact say that if a man feels the need of only one book on this subject, he could not do better than to secure this one for his library.

J. F. W. MEAGHER.

THE HEALTHY CHILD FROM TWO TO SEVEN, A Handbook for Parents, Nurses and Workers for Child Welfare, containing the "fundamental principles of nutrition and physical care." By FRANCIS HAMILTON MACCARTHY, M.D., Assistant Professor Diseases Children, Boston University. The Macmillan Co., New York, 1922. \$1.50.

A work of this kind is valuable from two standpoints. The first is that the ages of childhood covered by the author are those to which least attention has been given in the past. The second is that it is the healthy child who is the subject of the writer's attention; so little is to be found on the normal physiology of the child in the literature that the average physician is handicapped, in the treatment of abnormal conditions, by his lack of knowledge of the normal. Prevention of malnutrition, nervous strain, postural defects and faulty bodily mechanics and all the deficiencies found in later life must begin in early childhood if it is to be successful. Dr. MacCarthy's book is so written as to be quite as appropriate for the mother or nurse as for the physician, and has the following main divisions of the text.

There are chapters on The Home and Surroundings; Food for Body Building; Sleep and Rest; Play and Growth; Child-nature (Training and Education); Steady Nerves and Healthy Mind; Care of the Child's Body; Common Disorders and Diseases of Childhood.

The author is to be congratulated on making a really helpful contribution to the literature not only of pediatrics but also of general preventive medicine.

W. H. DONNELLY.

MEDICAL OPHTHALMOLOGY. By B. FOSTER MOORE, O.B.E., M.A., B.Ch. (Cantab.), F.R.C.S., Assistant Ophthalmic Surgeon, St. Bartholomew's Hospital, Surgeon, Moorfields Eye Hospital. With 80 illustrations. P. Blakiston's Son & Co., Phila., Pa. 1922.

This is an interesting and well written book on the relation of eye conditions to general diseases. There are 286 pages, divided into 10 chapters, and 80 pertinent illustrations. Of the latter, several graphically demonstrate the cortical representation of vision.

There is a good chapter on the relation to blood and vascular conditions, one on the diseases of the brain and nervous system, another on renal disease, gout, diabetes, etc., a chapter on syphilis, tuberculosis, etc., one on the toxemias, on parasites, and chapters on scattered subjects, such as oxycephaly, snow blindness, amaurotic family idiocy, and numerous others.

The bibliography is set down at the bottom of each page and is quite up to date. There is a complete index, as well as an index of authors.

The book covers the subject excellently, and will be valuable in any library as a work of reference.

E. CLIFFORD PLACE.

THE EVOLUTION OF MODERN MEDICINE. A series of Lectures Delivered at Yale University on the Silliman Foundation in April, 1913. By SIR WILLIAM OSLER, Bart, M.D., F.R.S. New Haven, Yale University Press, 1921.

Some years ago one of the great London daily newspapers instituted a crusade against what it called the ragtails and bobtails of literature—those backneyed phrases that are dragged in to fill out the deficiencies of the writer's invention. So when one says that Sir William Osler's is a name to conjure with, he reveals his own inaptitude for a task that calls for more than the ordinary reviewer of books can compass. Of all the names of modern medicine there are few, if any, that can justly be placed quite so high, for while many have achieved well deserved distinction in some branches of their art, there are few men who have approached Osler's well rounded versatility. When Yale University

invited him to deliver the Silliman lectures of 1913, they did so because they recognized that he would accomplish something more than a scholarly analysis. He chose for his subject, "The Evolution of Modern Medicine," and he presented not only a scholarly analysis of the growth of the healing art from the time when it first began to emerge from the early mists of savagery and superstition to its present widening morning brilliance, but he illuminated the whole fabric of his subject with that sense of just proportion, that delightfully delicate humor and that attractive something that we call personality, so that the dry bones of history are enlivened and inspired and his subject takes on the fascination of romance. He has accomplished what he set out to do; he has shown how the evolution of medicine is the evolution of the human mind striving to overcome what Kim's old llama called the discouragements of the silly body. To the thoughtless it may appear that problems of modern sanitation have little to do with the mysteries of pre-historic priesthood. Yet the early priest was physician and scientist and leader and priest. He was the embodiment of all the knowledge of the tribe and his problems were the problems of today. If he would glory in the calling which is his, let the Doctor sit down and read what Osler has presented with that clarity of vision and charm of narration which were so peculiarly his; and if he finds in this last volume to which Sir William could not give the finishing touch a little less than usual of Osler's felicity of expression, it is doubtless because the catastrophe of war had already brought him sorrow and bereavement. Much of the final arrangement, particularly as regards the illustrations which are unusually fine, is due to the care that has been bestowed upon it by Colonel Garrison, than whom there could be no more worthy editor. It is needless to add that the Yale University Press has done everything that art can do to make the volume worthy of the author.

H. G. W.

DISEASES OF THE DIGESTIVE ORGANS WITH SPECIAL REFERENCE TO THEIR DIAGNOSIS AND TREATMENT, by CHARLES D. AARON, ScD., M.D., F. A. C. P. Third Edition, thoroughly revised. Octavo 904 pages, 164 engravings, 48 roentgenograms, 13 colored plates. Phila. and New York: Lea & Febiger, 1921. Cloth, \$10.00.

This valuable work, in its Third Edition, has been enlarged considerably, and a number of additional illustrations have been added. It is a very useful reference book and deals in a concise and direct manner with every part of the digestive system from mouth to anus. Probably the most valuable new illustrations are a series of roentgenograms of all the common conditions which can be diagnosed by the X-ray. Perhaps a little too much space is given to the so-called functional conditions, which are happily becoming less numerous since modern methods of investigation discover their physiologic causes.

Three chapters are devoted to diseases of the liver, bile-passages and pancreas, and gives an excellent summary of the latest developments in the study of these conditions. Throughout the book, the subject of treatment is handled in a convincing manner, general principles in treatment being discussed first, and their practical application then clearly outlined. The book is one which will prove of value not only to the gastroenterologist, but to the surgeon and general practitioner as well.

A. F. R. A.

PROTEIN THERAPY AND NONSPECIFIC RESISTANCE, by WILLIAM F. PETERSEN, M.D., Associate in Pathology, University Illinois College of Medicine. With an introduction by JOSEPH L. MILLER, M.D., Professor Medicine, Rush Medical College, University of Chicago. New York: The Macmillan Company, 1922.

This is an important and timely book upon a subject which is attracting increasing attention. After many years devoted to the study of specific infections, resistance and therapy, certain workers began to investigate the reaction of the body to non-specific agents and thus opened up an entirely new field for research. Various terms—"colloid," "shock," "foreign protein therapy" have been applied. The important and basic fact thus far discovered is that many, perhaps most, foreign proteins, if properly given, can so modify the colloid balance of the organism as to increase resistance to and often cure infection. Jobling and Petersen were pioneers in this field. The importance of their discoveries entitles Dr. Petersen to speak with authority. In this volume, he summarizes all that is known at present of non-specific therapy, nor has he allowed his enthusiasm to run away with his judgment.

There are three main parts to this book. In the first, "The Method," there is an historical chapter, a complete enumeration of all the non-specific agents and a detailed description of the reaction—local and general. In part two, "Theories," he gives the theories and probable mechanism of the reaction in detail with an interesting chapter on the relation of the skin to resistance. In part three, "Clinical Results," he reports the results of many observers on the treatment of almost every known infection. The most important of these are arthritis, typhoid, gonorrhoea, pneumonia and skin diseases. There is a chapter on indications and contra-indications. The bibliography covers 50 pages in a volume of 300, thus showing the attention this subject has received. This little book is very readable, is written in a moderate tone and contains much information of value to those who wish to use protein therapy.

E. B. SMITH.

PRACTICAL INFANT FEEDING. By LEWIS WEBB HILL, M.D., Junior Assistant Physician, Children's Hospital, Boston. Octavo, 483 pages, illustrated. Philadelphia and London: W. B. Saunders Co., 1922. Cloth, \$5.00 net.

Dr. Hill is well known to all students of pediatrics, whether graduate or undergraduate, and his book will inevitably be well received. While the greater part of the text is taken up with the physiology, metabolism, energy requirements and feeding of the normal infant at various stages of his life, nevertheless, it would seem that the outstanding chapters are those which deal with the feeding and treatment of the sick or abnormal infant. The author has done yeoman service in the simplification of the classification and treatment of the diarrhical diseases of infancy in the past, and his text-book sets forth his beautifully simple but scientific and accurate conclusions. The chapters on Constipation, Loss of Appetite, Rickets, Spasmophilia, Scurvy, Eczema and Pyloric Spasm and Stenosis would make a valuable treatise by themselves. Dr. William W. Howell has written a chapter on The Physiology, Care and Feeding of Premature Infants, which is particularly apt in view of Dr. Howell's wide reputation as an authority on everything connected with the handling of the premature baby. In the chapter on Cow's Milk a synopsis of the regulations for the production of certified milk is presented.

The year 1922 bids fair to be a banner year in pediatric literature and Dr. Hill's work will unquestionably retain a ranking position therein.

W. H. DONNELLY.

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A CRITICISM OF CERTAIN TENDENCIES IN AMERICAN OBSTETRICS.*

By J. WHITRIDGE WILLIAMS,
BALTIMORE, MD.

IN selecting a topic upon which to address you, it seemed to me that I might fulfill an important educational function by considering certain tendencies in American Obstetrics, which I believe will lead to great abuse unless they are combatted and checked.

You will of course understand that I do not come before you as an obstructionist, nor as one who opposes progress. Since beginning my teaching career nearly thirty years ago, one of my most important duties has been to follow critically every advance suggested in obstetrics, whatever its character, for the purpose of determining upon how solid a foundation it rests, and whether its adoption should be recommended to students.

Possibly, some may suggest that I am naturally too conservative, and tend to react unfavorably to innovations of any sort. I do not believe so, as I have attempted to be open to conviction on the one hand and to be susceptible to the demonstration of error on the other. Indeed, whenever I have been constrained to form a conclusion unfavorable to any innovation, I invariably cross-examine myself in order to be sure that I have done full justice to the arguments advanced by the other side. In this connection I constantly recall, as a horrible example, the reaction of Meigs and Hodge to the two fundamental discoveries of their day—namely, the demonstration of the infectious nature of childbed fever and the employment of anaesthesia in obstetrics, and I pray that I may not prove as blind as they and designate some important discovery or innovation as “the jejune and fizenless vaporings of a sophomore orator,” as did Meigs when referring to Holmes’ great essay.

On the other hand, I have no desire to go down into medical history as one possessed by the *furor operativus*, as was the case with Osiander, who you may recall was professor of obstetrics in Göttingen from 1792 to 1822.

* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 19, 1922.

He is remembered chiefly from the fact that he misinterpreted the true conception of obstetrics, which he designated as the art of delivery (*Entbindungskunst*), and as a result applied forceps more frequently than any of his contemporaries, apparently sparing only such patients as were delivered spontaneously before he could operate. That this is not an exaggeration, is shown by Siebold’s statement that 46 per cent. of Osiander’s patients were delivered artificially.

After these preliminary remarks, I may state that the tendencies which I am about to criticize are operative in character, and are likely to convince the oncoming obstetrician that labor is not a physiological function, which in the great majority of instances terminates spontaneously with satisfactory results to the mother and child, but is rather a pathological process which calls for the intervention of art.

With this in mind, I shall very briefly discuss the following topics: (a) the employment of version as a routine method of delivery, (b) so-called prophylactic forceps, (c) cutting and reconstructing the perineum in every primipara, (d) the induction of labor at a fixed date, and (e) the abuse of Cæsarean section. In conclusion I shall outline in a few words my conception of ideal obstetrics, and consider certain factors which militate against its development in this country.

(a) For the past few years the imagination of many obstetricians has been stirred by the extraordinary career of Potter of Buffalo, who has developed extraordinary facility in the performance of version and extraction, and who teaches that every woman should be delivered by that means at the end of the first stage whenever feasible. As I understand it, his practice is based upon the desire to spare the patient the discomfort of the second stage of labor, as well as upon the contention that the results obtained are better than, or at least as good as, when labor is conducted by more orthodox means.

Such claims must be regarded as revolutionary; for if correct, they indicate that other obstetricians have failed to realize their responsibilities, are in urgent need of instruction, and should go to Buffalo to learn the funda-

mental principles of the practice of their art. This seems improbable, but at the same time there is a remote possibility that Potter is correct and the rest of the medical world wrong.

So important a question can not be solved by didactic and *ex cathedra* assertions and can be settled only by analyzing his results and by considering what would be the effect upon the women of the country were his practice generally adopted. If his results are actually superior to those obtained by others, it must be admitted that the practice of obstetrics is in urgent need of revision, and that it is the duty of obstetrical teachers to convert their lying-in wards into version institutes.

What are the facts? In his earlier articles Potter made only general statements concerning the advantages of his practice, but failed to give figures which permitted accurate statistical deductions. In November 1920, however, he reported to the Philadelphia Obstetrical Society the results obtained during the year ending August 31st, 1920. During that period he attended 1,113 patients, 12 of whom were delivered spontaneously before his arrival, while the remaining 1,101 were delivered by operative means, including 920 versions and 80 Cæsarean sections. While in the absence of definite statements, it may be inferred that there was no maternal mortality, he failed to state how many women were infected, nor did he give any information as to the condition of the genitalia at the end of the puerperal period.

On the other hand, he adduced accurate figures concerning the foetal mortality, and stated that 41 children were born dead, while 34 others succumbed during the two weeks following delivery—a mortality of 6.7 per cent. In analyzing his figures, it should be remembered that his clientele is composed almost exclusively of private patients, that he delivered all but 12 of them personally, and that he must be regarded as a most expert obstetrical operator.

Can such results be regarded as justifying his practice? I do not think so, and the reason for my belief is that relatively much better results have been obtained in my service at the Johns Hopkins Hospital, where the clientele consists entirely of ward patients, one half of whom are colored, many of whom are admitted as emergencies after maltreatment by outside physicians or midwives, and most of whom are delivered by the resident staff, whose oldest member rarely has more than four years experience. Accurate figures to date are not available, but for the first 10,000 deliveries our foetal mortality was 7 per cent.—a figure almost identical with Potter's. On its face, this is scarcely a flattering comparison, for Potter's private patients were delivered by an admitted

expert, while most of our ward and emergency patients were delivered by young men still serving their apprenticeship.

Moreover, the comparison becomes still less favorable when certain other facts are taken into consideration. In the first place, our mortality covers not only the children born dead at full time delivery or dying within the first two weeks, but includes the deaths of all premature children from the period of viability onward. In the second place, careful investigation has shown that 34 per cent of our foetal deaths are attributable to syphilis, which is in great part due to the prevalence of that disease in the colored race. As syphilis is comparatively rare in white ward patients, it is fair to assume that it is encountered still less frequently in Potter's private patients, so that for practical purposes it may be eliminated as a cause of foetal death in his material. Consequently, it seems permissible to deduct the syphilitic deaths when comparing our results, and if this is done our mortality becomes reduced to less than 5 per cent, as compared with Potter's 6.7 per cent. Furthermore, when the emergency character of our material is taken into consideration, and it is recalled that each year a number of patients are admitted with the child already dead as the result of outside attempts at delivery, or following serious obstetrical complications, it seems safe to assume that our foetal mortality is at least one third less than Potter's and that the difference must be regarded as the index of the added danger of version.

If my argument is correct, it effectually disposes of Potter's claims; for, if the results obtained by an admitted expert are only two thirds as good as those obtained by the varying personnel of a teaching hospital, it is appalling to think of the mortality which must inevitably obtain were his teachings generally adopted. In any discussion of obstetrical problems it should always be remembered that the prime object of pregnancy and labor is the birth of a normal child which will have a reasonable prospect of reaching maturity, and that the unnecessary loss of a single child constitutes an indefensible economic and biological waste.

While thus protesting against the extension of Potter's teaching, I nevertheless feel that his activity has served a useful purpose in two directions. In the first place, it has compelled us to stop and take stock and determine whether we are doing our best by the patients committed to our charge, and in the second place it has redirected attention to the advantages of version as an operative procedure, which in this country were in a fair way of being forgotten. In the absence of mechanical disproportion and under suitable conditions I

have always contended that version is the ideal procedure whenever prompt delivery is indicated before the head has become deeply engaged, and, consequently, I welcome any movement which forcibly impresses its merits upon the attention of the profession. At the same time, I hold that its routine employment can only be productive of harm by increasing the maternal and foetal mortality, as well as by giving the profession erroneous ideas concerning the significance of labor.

(b) At the 1920 meeting of the American Gynecological Society, De Lee described what he designated as the prophylactic forceps operation, and advocated as soon as the head had passed the cervix in primiparous women that the pelvic floor should be widely incised, delivery effected by forceps, and the wound carefully repaired after removing the placenta manually.

He claimed that the procedure had given ideal results in his hands, and, while not advocating its employment by the average physician, he earnestly recommended its trial to expert obstetricians. He justified the procedure upon two grounds; first, to shorten the duration of labor and to save suffering, which he believes is increasingly poorly borne by the modern woman, and second to replace the laceration and overstretching, which follows spontaneous delivery, or even an ordinary forceps operation, by a clean cut incision which can be accurately repaired.

In other words, he goes to the same extreme as Potter, but instead of version, he advocates converting every primiparous labor into an operative procedure which can be carried out only by an expert surrounded by the safeguards of a well equipped hospital. The proposal did not elicit a favorable response, and called forth considerable criticism. I have had no experience with it, but while I am prepared to admit that in his hands it may do no harm, I am confident that if it became widely adopted the last state of many women would be much worse than the first.

What interested me particularly was his statement that the modern woman stands pain with so much less fortitude than her mother and grandmother that the obstetrician is compelled to reckon with it and to resort to dubious means of shortening labor to meet the changed conditions. This has not been my experience, as I find that the objection to child bearing on the part of most modern women is not so much the pain it entails, as the general derangement of life and the financial sacrifices incident to raising a family. Moreover, I was impressed by De Lee's misconception of the significance of labor, when he stated that "It always strikes physicians as well as laymen as bizarre, to

call labor an abnormal function, a disease, and yet it is a decidedly pathologic process." While I have the greatest admiration for his many accomplishments, I cannot understand this point of view and consider that it can be productive only of harm; for if a gifted obstetrical teacher inculcates his pupils with the idea that every labor is pathological he inevitably opens the door to every sort of abuse, for if students become convinced that labor is ordinarily not a physiological function, they will be tempted to relieve the pathologic process by every variety of interference.

(c) In 1918 Pomeroy of Brooklyn propounded to the American Gynecological Society the question—"Shall we cut and reconstruct the perineum for every primipara? He then advocated, and has since practiced, making a deep median incision through the perineum, frequently extending through the sphincter muscle, as soon as the head begins to crown, and repairing it accurately as soon as the child is born. He claims that his procedure prevents the occurrence of deep and irregular perineal tears, and that the repair is so effectual as to restore the vaginal outlet to a nulliparous condition, and even occasionally to convert the young mother into a "*virgo intacta*."

Any one with rudimentary obstetrical experience must admit that such a procedure is sometimes indicated, and offers definite advantages over lateral episiotomy in that the median incision is easier to repair. But to contend that it should be done routinely in every primipara seems to me to be a *reductio ad absurdum*, more particularly as most women do not long remain primiparae.

Experience teaches that the duration of the second stage of labor averages only about one half as long in labors subsequent to the first, as the result of the resistance of the outlet having been permanently overcome to some extent. What happens in the second labor in women whose perineums have been satisfactorily reconstructed? Naturally, they must have the prolonged second stage of the average primipara. Shall they then be cut and reconstructed a second time? I understand that Pomeroy and his school do not do so, but rely upon a spontaneous tear occurring through the old cicatrix, which can then be repaired. This strikes me as illogical, for if cutting were necessary at the first labor, it would seem to me to be equally necessary subsequently, so that all that the original procedure does is to defer the laceration from the first to the second labor.

In my experience, conservative conduct of the second stage, with an occasional episiotomy or median incision, followed by accurate repair gives very satisfactory results. During the past two years about two thirds of all of our

patients have returned to the service one year after delivery for an objective examination for the purpose of enabling us to gather accurate statistics concerning the effect of child-bearing upon the local and general condition of a large series of women. Generally speaking, the condition of the pelvic floor and vaginal outlet has been surprisingly satisfactory, and in fact so nearly approaches the ideal that I have become convinced that the routine and careful primary repair of perineal tears gives ultimate results which can scarcely be improved upon, and renders unnecessary such prophylactic procedures as Pomeroy recommends.

(d) In certain quarters during the past few years the practice has developed of assuring the patient early in pregnancy that she will be delivered upon a definite date, and, if labor does not set in spontaneously on the day fixed, to induce it artificially. Doubtless, such a practice contributes materially to the convenience of the obstetrician, and frequently saves the patient days and sometimes weeks of waiting, at a time when the continuance of pregnancy is particularly irksome, so that it must be regarded as a great boon provided it does not add to the danger of the mother nor decrease the chances for the child.

With over-weening confidence in the perfection of their aseptic technique many obstetricians have adopted the practice with a good conscience and claim that they are satisfied with its results. On the other hand, I have always opposed it in the belief that it definitely increases the chance of infection, as I have been unable to rid myself of the idea that the introduction of the rubber ballon frequently entails a break in technique, and adds materially to the danger to the mother. For this reason, I have advised against its employment except in the presence of a justifiable indication, but recently I have had occasion to convince myself that my fears were not theoretical.

During the past year I have removed the uterus from two patients upon whom fruitless attempts had been made to induce labor at term. In one a bag was introduced on account of placenta praevia and removed at the end of twenty-four hours when it had failed to bring about dilatation. Shortly afterwards intrapartum infection developed, and as the child was dead the unopened uterus was removed. In the other patient, who had a moderately contracted pelvis and was suffering from a repeated attack of nephritic toxæmia, bougies were introduced for the purpose of terminating the pregnancy which had already gone beyond term. As they did not bring about uterine contractions they were removed at the end of 24 hours. The patient showed no signs of infection and was left alone for five days, at the expira-

tion of which the uterus was amputated supravaginally after Cæsarean section. The two uteri were subjected to microscopic examination. As was anticipated the first presented the characteristic lesions of intrapartum infection, but I was greatly surprised to find that in the second the decidua was acutely inflamed, notwithstanding the absence of clinical symptoms.

To my mind these experiences afford irrefutable evidence of the possibility of infection by the introduction of a bag or of bougies. In both patients the indication for interference was sharply marked and fortunately the end result was satisfactory. You can, however, readily appreciate what would be the state of mind of a conscientious obstetrician had a similar infection led to death after labor had been induced solely to suit the convenience of the patient and her medical attendant.

Similar objections can be made against the too frequent induction of labor for the so-called over-ripe child, as is so strongly advocated by Reed. While no one advocates more strongly than I the termination of a pregnancy which has gone beyond its calculated end, and has resulted in a child above the average in size; and, while nothing demonstrates obstetrical ignorance more forcibly than to watch a child of a woman with a normal pelvis grow so large as to give rise to dystocia by its mere size, it is highly important to emphasize that the indication for interference is not afforded merely by the number of weeks which have elapsed since the last menstrual period, but must be based upon a careful evaluation of the size of the child by repeated and careful palpation. In many instances this is one of the most difficult determinations in practical obstetrics, and is frequently far from accurate. Moreover, it is very humiliating to induce labor for an overripe child, and to find after birth that it falls below the average in size. Such an experience, however, is trifling when compared with the occurrence of serious infection, when the obstetrician must reproach himself with having placed his patient in serious jeopardy as the result of his own ignorance and misplaced confidence in the perfection of his aseptic technique.

(e) Five years ago I had become so impressed with the tendency on the part of many obstetricians and surgeons to resort to Cæsarean section unnecessarily that I wrote a paper entitled: *The Abuse of Cæsarean Section*—in which I urged greater conservation. This apparently bore little fruit, as the operation continues to be done with constantly increasing frequency.

One of the most striking illustrations is afforded by the report of Potter's work for 1920, which shows that he had performed 80

Cæsarean sections in 1,113 labors—or one in every fourteenth patient. Had the same ratio obtained in my material of approximately 22,000 cases, it would have meant 1,600 operations, and yet we did only 213 up to the end of 1921.

How can this discrepancy be accounted for? Of course it may be urged that we have been unusually conservative, and I must admit that such was the case during the early years of our service. For the last ten years, however, Cæsarean section has been performed whenever it appeared indicated; and possibly the sharpest contrast may be obtained by comparing our figures for the year 1921 with those of Potter. During this period we performed 30 Cæsareans in 1,158 labors—an incidence of one to thirty-nine, as compared with Potter's one to fourteen—in other words only one-third as many.

When it is recalled that over one-half of our material is composed of blacks in whom contracted pelves occur five times more frequently than in whites (40 and 8 per cent respectively) and that Potter's material consists almost entirely of private patients, in whom contracted pelves occur even less frequently than in our white ward patients, it becomes apparent that only a small proportion of his operations could have been necessitated by pelvic abnormalities, and consequently the great majority must have been done for non-pelvic indications—which is the point I wish to emphasize. You will of course understand that I have no desire to criticise Potter personally, and I mention him solely for the reason that his work is of recent date and lends itself admirably to comparison.

What do such figures mean? The only permissible inference is that with relatively the largest contracted pelvis material in the country we have done comparatively few operations for pelvic abnormalities, and still fewer for non-pelvic indications; while Potter with relatively few abnormal pelves has done what appears to be an excessive number of operations for non-pelvic indications, and, accordingly, he may be considered as an exemplar of those who are widening the indications for the operation.

Why is Cæsarean section being abused? For several reasons: 1—that its mortality is considered trifling; 2—that it apparently offers the easiest way out of many emergencies; 3—that it is erroneously considered as the treatment par excellence for such complications as eclampsia and placenta prævia; 4—that it is being demanded by a certain number of thoughtless patients; and 5—that its frequent performance is believed to add materially to the reputation of the operator.

Time will not permit me to consider all these points in detail, but I shall say a few words in regard to several of them. In the first place, the mortality of Cæsarean section is much higher

than is generally believed, and is low only when it is elective and done either at an appointed time before labor or within a few hours after its onset, upon women who have not recently been examined vaginally. On the other hand, the mortality is excessive when done late in labor, and very high when the patient is exhausted or has previously been subjected to fruitless attempts at delivery. That a low mortality is possible is shown by the fact that in our last 160 operations only one death from infection occurred—a mortality of six-tenths of one per cent.

Last year Eardley Holland made an exhaustive statistical study of 4,197 Cæsareans done in Great Britain from 1911 to 1920 inclusive, and drew conclusions which abundantly confirm those of Routh and Reynolds for the previous decade.

Upon analyzing the operations for contracted pelvis according to the time at which they were done, he found the following mortality:

Before labor	mortality	1.4%
Early in labor	"	1.8%
Late in labor	"	9.4%
After attempts at delivery...	"	26.5%

In other words, he clearly showed that satisfactory results were obtained only in the first two groups, while the operations performed late in labor had a high, and those following attempts at delivery had a murderous mortality.

Newell has made a valuable contribution by showing that in many localities the mortality is excessive, and that in some instances it is appalling instead of trifling. Thus, in four of the smaller cities about the periphery of Boston, the mortality varied between ten and one hundred per cent—a striking demonstration that unless the operation is performed at the proper time upon uninfected and unexhausted women, and with a suitable technique, its results are almost as bad as in the pre-aseptic era.

The belief that Cæsarean section offers the easiest way out of many emergencies is frequently more apparent than real. Many serious emergencies do not become manifest until the time for an elective section has long since passed, so that, if the uterus is not removed following the operation, the chances for the development of a fatal infection become considerable, with the result that the mother may be sacrificed in the attempt to save the child. This may well happen when a section is done for a neglected transverse presentation or for prolapse of the cord occurring late in labor.

Within recent years the field of Cæsarean section has been expanded so as to include eclampsia and placenta prævia, and such indications are decidedly on the increase.

As the result of my experience, more particularly since we have become acquainted with the merits of free venesection and the administration of large doses of morphia, Cæsarean section is rarely indicated in the treatment of eclampsia.

This is borne out by the figures of Holland, who in 190 cases treated by section, reported a mortality of 32 per cent, which is not encouraging. Of course it must be admitted that many operations were done upon seriously ill women in whom a high mortality must be anticipated. But even after taking such mitigating circumstances into consideration, his figures indicate that the operation saves comparatively few women, and in general could well be dispensed with. For years, with an occasional section, our mortality was approximately 20 per cent, which has been decreased by one-half during the past ten years since we have relied chiefly upon venesection and morphia and have resorted to delivery only when it can be effected conservatively.

Somewhat the same argumentation applies to placenta prævia. While it must be admitted that in certain rare cases with a rigid cervix Cæsarean section may be the operation of choice, its frequent employment betrays ignorance of what competent obstetricians may accomplish without it. Naturally, it may be safer and easier for a general surgeon to treat the complication by section rather than by purely obstetrical means, but the evidence available indicates that in skilled hands the latter give better results.

Thus, in the last 37 cases of placenta prævia in our service treated by the bag there was only a single death (Thompson). On the other hand, Holland found that the mortality following 139 Cæsarean sections was 11.5 per cent. When this is compared to the 2.5 and 3.7 per cent reported by Bar and Essen-Möller, respectively, there would appear to be but little question as to which method gives better results in skilled hands.

Moreover, in considering the justifiability of Cæsarean section for other than pelvic indications another very important point is frequently overlooked—and that is the behavior of the scar in subsequent pregnancies. While the investigations of Gamble in our service have shown that the properly sutured and uninfected Cæsarean incision heals by muscular rather than by fibrous union, and therefore constitutes less of a menace than is generally believed, it must nevertheless be admitted that it sometimes forms a locus *minoris resistentiæ* and ruptures during a subsequent pregnancy or labor.

To many this danger is so real that the dictum—once a Cæsarean, always a Cæsarean—has obtained wide acceptance, and is endorsed by so competent an authority as Newell. If this be the case, it means that the performance of a section places the woman in a position of reproductive

inferiority and tends to limit seriously the number of children which she may subsequently bear. Consequently, for this reason alone the performance of Cæsarean section for non-pelvic indications should be restricted to the narrowest possible limits. In my estimation, the excellence of an obstetrician should be gauged not by the great number of Cæsareans which he performs, but rather by those which he does not do. I am fond of telling my students that any carpenter with a little training can do a section, but that the highest grade of obstetrical intelligence is required to predict in a given case of moderate pelvic contraction that the child can be born spontaneously.

I have made this protest against indiscriminate operating for the reason that I consider that it is having a baneful influence upon the young men who are going into obstetrics, and is tending to make them technicians rather than sound practitioners, who are imbued with a knowledge of the wonderful resources of Nature, and who are prepared to watch her processes and to interfere only upon sharply marked and justifiable indications. What is needed in this country are not so much men who are keen to operate whenever possible, as those who are so intimately acquainted with the capabilities of Nature that they can assure their patients that they are as well prepared for childbearing as were their mothers and grandmothers, and that with the aid of anaesthesia and aseptic technique, they should come through it much better than they. The oncoming obstetrician should be immensely interested in all of the problems of preventive medicine—particularly those included under so-called prenatal care, and should be acutely concerned in attempting to find the solution of some of the problems concerning which we are so profoundly ignorant—for example;—the cause of menstruation and of dysmenorrhœa; the cause of labor; the factors which control the growth of the child in utero; the cause and mode of prevention of toxæmia and eclampsia; the problems of sterility and the etiology of abortion, as well as many other problems which could readily be mentioned.

The solution of such problems requires scientific training of the highest order and years of patient work, and I take it that those who become interested in them will find them much more attractive than devising ways of converting what should ordinarily be a physiological process into a pathological one to be terminated artificially.

Do not misunderstand me. I hold very strongly that anyone who assumes the responsibility for the care of a patient during pregnancy and labor should be a thoroughly competent practitioner, who commands all the technical resources of his art and is prepared to utilize them to the best advantage of his patient. But at the same

time, he should regard himself as much more than a technician, and should face the problems of obstetrics in such a manner that he will usually consider the necessity for terminating labor artificially as a confession of bankruptcy on the part of Nature, and will pride himself not so much upon his ability to aid her, as upon the possibility of being able sometime in the future to make such aid less frequently necessary.

In other words, I consider the excessive operative tendencies of the present time as a result of, as well as an arraignment of our system of obstetrical education. Time will not permit me to develop this aspect of the subject, but all of us realize that in the past, the opportunities offered in this country for the scientific study of obstetrics have been entirely inadequate, but I hope that in the near future we shall see springing up in connection with various universities adequately equipped and endowed Woman's Clinics, which will be headed by broadly trained scientific obstetricians, whose aim will be to train not man-midwives nor mere operative technicians, but men who appreciate the real significance of obstetrics and who realize that it means much more than the art of delivery.

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OBSTETRICAL ANALGESIA.*

By RAYMOND C. COBURN, M.D.,
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(From the Anesthetist's Viewpoint.)

THE use of nitrous oxid for obstetrical analgesia is based upon sound physiology:

It does not increase the already heavy burden thrown upon the organs of elimination, nor have an accumulative effect, as do ether and chloroform when repeatedly administered over a considerable period of time.

It does not delay the progress of labor, as do the other analgesics and anesthetics including the alkaloids, by inhibiting the contractile fibers of the uterus. But, in striking contrast, it stimulates contraction of the uterus, and thereby directly shortens the period of labor.

It does not depress the patient, but conserves her resistance, thus rendering the puerperium more free from all the complications that follow in the wake of impaired vitality. The benefit of conserving the mother's vital forces is not reflected alone in a more spontaneous delivery but in the superior physiological state, as well, in which she is left afterward.

It is the least toxic general analgesic known, and its effect is so quickly secured and its elimination so promptly effected that the patient is subjected to its influence only during the time that it is needed. This is another important contrast to all other medicinal means for the relief of obstetrical pain.

It does not injuriously affect the baby. So few inhalations need be given at a time, and then only when the uterus is contracting or contracted, and elimination is so rapid, that very little nitrous oxid reaches the foetal circulation.

The exact mode of action by which nitrous oxid produces analgesia, which may be defined as loss of pain-sensation but with consciousness retained, and anesthesia, where there is a loss of both consciousness and pain-sensation, is not definitely known, but is generally considered to be interference with oxidation in the brain and nerve cells. Certain it is that in prolonged administration the difference between producing analgesia and anesthesia is a matter of the amount of oxygen concomitantly administered. In other words, nitrous oxid analgesia may be prevented from developing into anesthesia either by withdrawing the agent or by simultaneously administering sufficient oxygen. In obstetrical practice the former is the usual method.

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The time to begin the administration is important. If too soon, it will not be effective, and the cooperation on the part of the patient will be more difficult to secure. And this raises a very important point in the procedure—the psychology of the patient. If the best results are to be attained, the patients' confidence must be secured, and herein, I believe, lies one of the great differences in results obtained. Few physicians realize the importance of the mental attitude of the patient before the administration of an anesthetic. The parturient woman is particularly susceptible to influence and suggestion, but she must be properly handled to secure her full cooperation, and without this cooperation the analgesia cannot be made a success. The psychological phase of obstetrical analgesia has not received its proportionate consideration. Firmness, but withal gentleness, sympathy, and optimism, help to influence the patient's psychology in the right direction.

From the casual point of view the analgesia is to prevent suffering, so it should be instituted whenever the contractions produce a decided pain. This will occur at varying stages in different patients, and with the same individual in different labors. In general: for primiparae, when there is a three or four finger dilatation of the cervix; in multiparae, a little later, and sometimes not until the beginning of the second stage.

When the early contractions are ineffective and "nagging," a medium dose of morphine should be given hypodermatically. This usually quiets the contractions for a time and helps to soften the cervix, so that later, when they begin again, they will be stronger and the cervix more pliable. In such cases the administration of nitrous oxid should be deferred until the more vigorous and effective contractions are secured.

Not every type of nitrous oxid apparatus is adapted for obstetrical analgesia. The requirements for this work, where the administration is intermittent, differ in some respects from those of general surgery, where the administration is continuous. It is important that the valves be in good working order, the mask fit the face properly, and the apparatus be adapted to furnishing nitrous oxid pure, or with oxygen or air, without the slightest delay, and sensitive to effecting quick changes in the percentages of the mixture inspired by the patient. Herein lies a common source of error. The patient takes so few inhalations that often the percentages shown on the apparatus nowise indicates that which the patient actually inhales. A simple apparatus is to be preferred for this work.

At the beginning of a contraction, announced either by the patient or detected by a hand on the abdomen, the mask should be quickly applied, and the patient take three or four deep inhalations, then hold her breath as long as possible and "bear down." Holding the breath prevents the rapid loss of nitrous oxid through exhalation, and "bearing down" increases its rate of absorption and augments the expulsive effort.

While I wish to emphasize the necessity of beginning the administration in most cases at the first indication of a contraction so that analgesia will be established before pain is experienced, yet when the contractions have a slow onset the administration must not be begun so soon, else the analgesia will subside before the painful part of the contraction reaches its peak.

The number of inhalations to be taken with each contraction is important, and it should always be the minimum to produce the desired results. It needs to be varied not only with different patients, but in the different stages of progress with the same patient. At first three or four inhalations are usually sufficient. Later, when the contractions become more painful, six or eight, or even ten inhalations are required. The tendency is to give, and the patient to want, too many inhalations.

Only sufficient nitrous oxid should be given to produce analgesia, for the patient very quickly passes into anesthesia, and this is to be avoided (except toward the end of the second stage and in precipitate labors) as it destroys voluntary cooperation. When the patient is relieved from pain but kept conscious her voluntary cooperation in the expulsive effort is greatly increased, so that indirectly, as well as directly, this type of analgesia materially shortens labor. From the strictly scientific point of view, this is probably its most important effect, but its practical significance has not been generally recognized. The analgesia *per se* has been emphasized, but little attention directed to the impetus it gives to the natural forces of labor, shortening it in all, and changing the character in many to a more spontaneous delivery.

There is a marked difference in the oxygen requirement of patients, and of course, the number of inhalations given at a time affect it also. For the first three or four inhalations oxygen unnecessarily delays the analgesia, and most patients will take twice this number of inhalations without showing oxygen deprivation. However, cyanosis must be avoided and either a small percentage of oxygen, or a larger amount of air, must be given when indicated by the color of the patient's cutaneous circulation.

When the contractions are too strong, considering the resistance imposed, nitrous oxid analgesia should not be used, for here the indication is inhibition to the contractile force, hence ether or chloroform are the agents of choice in precipitate labors.

When the head is passing over the perinæum it is usually advisable to have the patient anesthetized, and often with a more potent anesthetic than nitrous oxid, though with susceptible patients, or when the contractions are weak, it may be sufficient. When the contractions are normal, ether or chloroform may be given to advantage on an open mask at this time. The former is preferable except when the contractions are vigorous, or a quick effect imperative. The preceding analgesia lessens the amount of anesthetic required, so chloroform must be used with especial caution under these circumstances.

When an anesthetist is not available, an apparatus with self-filling bags and automatic shut-off on the inhaler makes self-administration a good substitute. The patient soon learns to apply the mask (preferably the nasal type) at the beginning of a contraction and take a few inhalations. If there is a good spring on the shut-off valve it will stop the gas before anesthesia is established.

If an automatic apparatus is not at hand, anyone who may properly be in the chamber may sit at the bedside and keep the bag filled, but the patient should handle the inhaler rather than the untrained attendant.

There have been questions raised concerning the establishing of respiration in the baby born after nitrous oxid analgesia. My observation has been that where the intermittent type of analgesia has been used there has been no special difficulty. And when in addition to the analgesia, ether or chloroform is used as the terminal anesthetic, there is less difficulty than when these agents are so used without the preceding analgesia. This, I believe, is due to the fact that the analgesia lessens the amount of the terminal anesthetic required.

Whenever the baby is cyanotic, and the cord is still pulsating, several inhalations of pure oxygen by the mother before the cord is tied will quickly clear the circulation.

Properly used, nitrous oxid analgesia is much more than a humanitarian utopia; it conserves the mother's vitality, shortens labor, and assists nature at the essential points. It ought, therefore, to be regarded rather as a conservator of life.

OBSTETRICAL ANALGESIA.

By JOHN VAN DOREN YOUNG, M.D., F.A.C.S.,
NEW YORK CITY.

(From an Obstetrician's Viewpoint.)

THE possibility of the safe relief of the pain of labor has been a world history and a worldwide question. None the less pertinent today than at any time since the beginning of the human race.

The terrors of the lying-in chamber have cast their blight over the lives of womankind, and given an ever present excuse for birth control and abortion.

The first labor is met with a vicarious fear of the suffering friends have described, a real courage to face the unknown, and a deep founded hope that there will be less of torture than an inborn fear anticipates. That so little has been accomplished in the systematic relief of labor pain in all cases that really require it, is one of the strange and unaccountable facts of medical history, stranger still when you realize the splendid progress made in lessening human suffering in all its other varied phases. This of course does not apply to the use of anesthetics, as their use is well understood, and they are quite separate and distinct from analgesics, although the passage from analgesia to anesthesia is gradual, still there is a very distinct line of demarcation: and the indications for the use of one are the contra-indications for the other. It is the analgesia in labor to which I wish to call your attention, not the anesthesia which is used as an adjuvant to some obstetrical procedure at the middle or end of the second stage, but analgesia for the sole purpose of relieving pain for the patient's sake, in an effort to conserve her energy and lessen her suffering, both of advantage in any event, and often vital factors.

The halo which sentiment, and an age-long habit, have placed about the sacrifice of maternal love, the anguish that is replaced by joy, and soon forgotten, is an empty honor in the event of an exhaustion, that borders on collapse, or which in the event of a necessary operation or post partum hemorrhage, may be a serious factor in the production of shock, or even death.

That pain is a munificent function of nature is admitted, it is a warning of local or general impending danger to the body.

Its heeded signal may save the sufferer from much greater and prolonged pain, in some cases its warning is the only protection to the patient's life.

The laity realize the importance of pain, the discovery of its cause and its relief, this order is too often reversed with serious result, but the whole human family dread and seek relief from pain.

Pain may be divided into two groups, warning and consequent pain or suffering. The first group is essential to diagnosis, the second it is our duty to relieve if we can do so with safety to the patient.

It is manifestly wrong to mask diagnostic pain, with a consequent increase of morbidity or an actual danger to life. Neither is it right to allow patients to suffer simply because they have come to a stoical state of mind, that suffers through a hopeless sense of its inevitability.

Therefore it must be admitted that pain, while of great value to the patient and the doctor, has its limit of usefulness beyond which it becomes a menace to the patient and of no help to the doctor. This is particularly true of labor pain, for in this class of cases we have to contend with pain and severe muscular effort, preceded by months during which there are unusual changes in the body, and during the last sixty days these changes are so great that the usual manner of life and exercise are interfered with.

That nature adapts itself to these changes is admitted, but one has only to look at the face of a patient after several hours of hard labor to realize the exhaustion present, due in part to the muscular effort but in a still greater degree to the suffering, muscular effort tires, combined with serve long continued pain. Surely the intermittancy of the effort and pain is a wise provision of nature, were it not so the consequent wearing out of the patient would be appalling.

The cry of the patient in labor is not for relief from effort, but from pain; It is a state not paralleled in any other condition of life. The dread of the pain is as real as its actuality, and both inhibit her efforts, until the involuntary forces of nature must work alone, without that aid the patient might give herself, surely a waste, of these forces that would so greatly help in the birth of the child. In an ultimate analysis the problem resolves itself into a consideration of the passenger, and the passage; the power to expel and the resistance, a purely mechanical problem.

At this time I feel I must say just a word about prenatal segregation of cases in order that I may make my position clear to the use of analgesia in labor. Mechanically there are five subdivisions of labor cases, this without reference to the causes underlying this subdivision, taking into consideration only the elapsed time and the method of delivery.

They are rapid, normal, delayed (eventuating in self delivery), delayed (terminating in forceps delivery), and Cæsarean Section. Our concern is only with the second, third and fourth of these rather arbitrary divisions.

It is obvious that the use of analgesia presupposes the elimination of all cases that should fall in the fifth class, else valuable time will be lost, and the method held accountable.

It is also assumed that renal conditions, threatened eclampsia, toxæmias, cardiac cases, high blood pressure and all the other complications of labor have been taken into account.

The question of analgesia does not come up in the painless, or nearly so, or the very rapid labors, here if any procedure is indicated or there is time for anything to be done an anesthetic is the only measure that can be used.

The ideal obstetrical analgesic must lessen the severe pain of the first stage, increase the efficiency of the contractions, shorten the first and second stages, and lessen the frequency of indicated forceps deliveries and versions.

The question is, is there such an analgesic, which can be used in the ordinary every day practice of obstetrics, by the specialist, and the general practitioner that is safe, dependable and practical?

The answer is Yes. Nitrous Oxide Gas. One has but to recall its use in other fields to at once appreciate its advantages and applicability in this one. But I will leave to Dr. Coburn the elaboration of the plan and scope of its administration.

A practical question arises at this point; is this method of obstetrical analgesia more time consuming for the doctor than is possible in a busy life? In my experience it is not. If the one giving the analgesic is capable of observation as to the progress of the labor, the character and strength of the contractions, he can notify the doctor in ample time, but with this difference, that in the case where analgesia is an indicated procedure, the call will come sooner than expected, the progress will be greater than in a similar case without analgesia, the patient's morale will be good, she will be working well with each contraction and resting between, she will be tired but not exhausted.

She will be eagerly inhaling the gas with each contraction and following rigidly the instructions given by the anesthetist.

It is axiomatic that a method that increases expulsive power and lessens pain and consequent exhaustion will increase the percentage of spontaneous deliveries, and in a percentage of cases change what promised to be a difficult forceps into a median or low easy extraction.

In other words it will throw the balance in the favor of the patient when resistance and expulsive force are nearly equal.

These statements apply only to those cases where there is no insurmountable barrier to the passage of the head through the pelvis. In some of my cases I have preceded the analgesia by a hypodermic of morphine grains $\frac{1}{6}$ to $\frac{1}{4}$ when the pains are severe enough to be tiring but not strong enough to warrant the use of gas. This hypodermic is never repeated.

April 15th, 1916.—I delivered my first case with a precedent analgesia and each year since has given me greater confidence in, and greater

dependence upon nitrous oxid analgesia for the relief of the suffering of patients in labor.

I shall not burden you with the reports of a number of cases, and one series is too small to draw percentage from, therefore I will report three illustrative cases and give you my deductions founded on my observations.

Case No. 1.—Mrs. F. April 15th, 1916, para 2. Analgesia 8½ hours, most satisfactory, low forceps extraction under chloroform, in this, my first case. I noted complete analgesia, marked increase of pain value, lack of exhaustion on the mother's side, and no ill effect to the child.

I was so deeply impressed that I determined to make a careful trial of the method, and my observations have been so fully confirmed that I now present gas analgesia with my full endorsement.

Case No. 2. Mrs. D. July, 1921, para. 4. This patient had had three successful gas analgesias: but with this delivery the pains were severe, expulsive, with rapid progress, the gas was ineffectual and had to be stopped and a potent anesthetic substituted. This case demonstrates that gas analgesia is a stimulant to expulsive force and increases voluntary effort, therefore when expulsive force is more than sufficient to the needs of the patient the analgesia is lost, and if gas is to relieve this type of pain it must be used to a surgical degree which in my opinion it should not be, as chloroform or ether are much better anesthetics for this purpose.

Case No. 3.—Mrs. F. August, 1921, primipara. During pregnancy the patient had gained largely in weight. The child seemed fully developed and large, as term in my estimation had been passed, I introduced No. 4 bag after manual dilatation, and two hypodermics of 1½ m. of pituitrin, labor was well under way but the contractions were ineffectual, considering the fact that the os was well dilated (four fingers) I had the analgesia instituted, the effect was at once apparent, there was marked improvement in the morale of the patient and in the force and character of the contractions. Analgesia 5½ hours was perfect and the patient delivered spontaneously, under chloroform, of a 10 lb. female child.

There was no exhaustion of the mother and the child was in perfect condition. Considering the fact that the patient had a rigid os, was over due, the over weight, the difficulty in inducing labor, the large child, and the ineffectual character of the contractions, the termination of such a case in spontaneous delivery, is attributable only to the analgesia as turning the scale in the mother's favor.

I cannot express myself too strongly upon the absolute necessity for the proper selection of cases for analgesia. In this as in all our work the method must be adapted to the case, not the case to the method.

So much has been promised for various meth-

ods for the relief of labor pain that have not stood the acid test of experience, that I hesitate to bring forward the proven claims for nitrous oxide analgesia, but in a word it is logical in its application and clearly adaptable to the condition.

I am absolutely unable to understand why it is not in general use, as to those of us who have given it a fair trial added experience only increases our enthusiasm and a patient once properly given analgesia will not submit to an ordinary delivery.

The following brief statements on analgesia summarize my observations of the past six years.

1. Nitrous oxide produces the ideal obstetrical analgesia.
2. Used as an analgesic it is absolutely safe for mother and child.
3. Its use may be safely continued for hours.
4. It shortens labor by increasing pain value.
5. Analgesia enables the voluntary forces of labor to be brought into full play.
6. It eliminates fear, and pain dread thereby improves the morale of the patient.
7. It decreases the frequency of needed forcep extractions, and versions.
8. It minimizes maternal exhaustion.
9. Analgesia must be used with a complete knowledge of the case and all contra-indications eliminated.
10. Nitrous oxide stimulates the expulsive force therefore in rapid deliveries a more potent anesthetic is indicated.
11. Properly given there is no inter-contraction effect.
12. During the analgesia the patient will obey instructions.

I commend obstetrical analgesia to you and bespeak its thorough trial in the interest of your patients and for the lessening of human suffering.

RECTAL COMPLICATIONS OF PREGNANCY AND THE PUERPERIUM.*

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EVERY physician with an obstetric practice has had patients who have suffered intensely from some rectal disease during pregnancy, labor or the puerperium. It is the purpose of this paper to call attention to some of these troublesome conditions and make suggestions as to their treatment in the hope that many of the discomforts of child-bearing may be lessened or prevented.

CONSTIPATION.

Disturbance of the normal function of defecation in the pregnant woman is common, taking

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the form of delay rather than frequency. All obstetrical textbooks consulted mention the constipation of pregnancy, giving its frequency from 28 to 100%, and the chief remedy, some form of catharsis. In personal communications received from proctologists there was a conspicuous absence of the drug treatment. Although many patients are constipated before pregnancy, they are usually more so during that time, and anything done to remedy the same should have in mind a permanent as well as harmless cure. Constipation, its vicious treatment, or both, are the most important factors in the causation of the rectal troubles of the pregnant woman, and with this problem we are confronted:

Of paramount importance in any method of handling the constipation of the pregnant woman is the avoidance of the irritation produced by either hard scybalous stools or frequent stools made fluid by drastic cathartics. Bulky soft stools come nearest to being harmless. They are produced by a generous diet of fruit and vegetables, to which may be added liquid petrolatum and agar agar. The two latter accomplish the desired result without irritation anywhere along the intestinal canal, and, in addition, exert a protecting influence on the mucous membrane. The oil is best given in doses of from 10 to 30 c.c. before and the agar in doses of 5 to 10 grams with one or more meals each day as necessary. With this treatment, the rectum should be, and usually is, emptied at least once a day, preferably about twenty minutes after breakfast.

Sometimes other means must be used to restore the normal function, and there is nothing better than a small enema of cool water (500-750 c.c. at 68 deg F.) run in through a large soft rubber male catheter inserted not more than 2 or 3 inches, and rapidly by means of the irrigating can hung four to six feet high, after the method of Hertz. Thus, by thermal stimulation of the sensitive lower portion of the rectum, the bowel wall is made to contract and empty itself quickly of its contents. Tone is restored by exercising the bowel musculature, by insuring an empty rectum and by relieving congestion in the hemorrhoidal area. In fact this enema should be the rule for a week or more after the use of agar is begun for the reason that the rectum may fail to empty itself of the soft bulky stool suddenly substituted for the hard and scybalous one.

Water with nothing added makes the best enema as feces are more soluble in this medium than any other. The writer has observed from the colonoscopic examination of the rectum and lower pelvic colon of a large number of patients that it takes from two to four hours for the absorption of that portion of a water enema which is normally retained. Where some irritating solution, such as soap-and-water, turpentine,

glycerine or epsom salts, has been used, an extra amount of mucus is thrown out and it takes a much longer time for the absorption of the non-evacuated portion. As nurses usually take it for granted that soap-and-water is to be used, one should be particular to specify "water only." Practical application of this observation can be made by the obstetrician as well as the surgeon who wishes to clear the bowel and leave it in the best possible condition for operation or the absorption of tap water later, should it be necessary to give it.

One or more bowel movements a day does not, in every instance, mean that the woman is emptying completely the lower part of her colon, as it is often only an overflow. Suitable history and a routine rectal examination, especially digital, of every obstetric patient would reveal not only this form of incomplete defecation, when present, but also other existing although perhaps quiescent diseased conditions, which I will refer to later. Early attention to these would prevent acute serious symptoms, add much to the patient's comfort and eliminate possible causes of delayed labor due to rectal pain. Not infrequently does one hear the patient date the onset of her rectal trouble to the passage of a very hard stool or to the action of a drastic cathartic. For this reason, when it is necessary during pregnancy to use salines or drastic cathartics, precautions should be taken lest the frequent forced fluid stools so congest and irritate the lower bowel in the area of the external sphincter and that painful and serious damage be done. The best preventive of damage in such cases is, preliminary to the action of the cathartic, to empty the lower bowel of all fecal matter by means of a water enema, which should be followed, for retention, by an injection of mineral oil, melted vaseline, raw linseed oil or Hazeline cream. Oral administration of mineral oil preceding and with cathartics does much toward eliminating their bad effects without interfering with their efficiency.

CARE OF COLON DURING LABOR

The care of the colon during labor aims to accomplish one ideal condition, viz., an empty colon, in order that there may be no interference with the mechanism of labor, injury to the bowel from distention or pressure, or danger of infection from feces forced out during delivery. Could one anticipate to a nicety the exact time of labor, this would be easy. That being impossible and owing to the variation in the length of time required for a cathartic to operate, it is best not to give one after the commencement of labor. An enema works quickly, emptying the colon usually from the middle of the transverse to the anus, and, if used early enough—about 4

hours before delivery—any portion of the enema that is not evacuated will be absorbed.

THE COLON DURING THE PUERPERIUM.

During the puerperium involution is favored, a better position of the uterus is maintained and many rectal complications are prevented by keeping the lower bowel empty. In preparation for labor the patient usually eats little and her bowels are well emptied. Labor itself depletes her of her body fluids and she is thoroughly fatigued. These facts argue *against* the routine use of cathartics especially during the early part of the puerperium and *for* the less drastic method of keeping the bowel empty by means of enemata of water only. Late in the puerperium and after the patient is up and about, the same method should be used as outlined above.

For gas distension often the passage of the rectal tube alone gives relief. Charcoal is useful and in the more severe cases pituitrin may be employed.

Zobel hits a nail where it is most advantageously hit when he says, "I take comfort in remembering that with the pressure removed, after the uterus is emptied, the action of the bowel will probably return to normal, provided it is not overstimulated by injudicious drugging."

COMPLICATIONS.

It is a popular belief that the rectal complications—hemorrhoids, fissures, abscesses, fistulæ, polypi, cryptitis, papillitis, etc.—all are caused by constipation, and to some extent this may be true, whereas, it is seldom realized that acute rectal complications or the acute symptoms of those already existing are most frequently the result of misapplied honest effort at relief of constipation, real or imaginary. These efforts to relieve take the form of drugs and medicated hot enemata, which liquify the feces and cause their forcible frequent evacuation through a sphincter-controlled outlet, congested, as is the whole pelvis, due to pregnancy; and injury results.

HEMORRHOIDS.

Of all the complications, hemorrhoids, as is well known, is the first in importance, and practically all of the obstetrical textbooks consulted emphasized the suffering resulting from them. Their treatment naturally falls under three headings: First, during pregnancy. Second, during labor. Third, during the puerperium.

The slight discomfort of hemorrhoids that make their appearance during pregnancy, and which may bleed but do not prolapse, is usually relieved by a daily complete evacuation of a non-irritating stool. Where the suffering is severe, it is usually due to an associated fissure, an ulcer or a thrombotic condition in the internal or ex-

ternal hemorrhoidal area, and relief is obtained by treating the cause.

When hemorrhoids prolapse after defecation, return unaided or have to be replaced, they are a menace to the pregnant woman because of their liability to acute exacerbation, and radical operation, as early in pregnancy as possible should be insisted upon.

If prolapse and strangulation exist for any length of time, thrombosis, rupture of veins, and extravasation of blood into the tissues occur, followed by infection and sloughing. The thrombosis may extend for several inches into the veins of the rectum. The suffering is intense and continuous, recovery is slow and subcutaneous fistulæ are apt to result. In this condition any attempt to replace them is dangerous, but under local anesthesia the clot in the largest hemorrhoidal masses should be evacuated with the least possible manipulation of the veins above, lest an infected embolus be dislodged. This should be followed by a hot moist antiseptic dressing.

If internal hemorrhoids have prolapsed and surgical intervention is refused, then the problem is, what to do with them? First of all, an effort should be made to replace them. The local application of adrenalin and glycerin, very hot fomentations, or a hot sitz bath for a short time, often relieves the congestion and relaxes the external sphincter ani muscle so that this can be accomplished easily, by means of gentle but firm continuous pressure, with the patient in the knee chest position. Sometimes, however, the sphincter can be relaxed only under local anesthesia.

When hemorrhoids are replaced the difficulty is to keep them inside the rectum. Often this can be done by means of a gauze pad T-bandage or adhesive dressing. Much can also be done to keep them there by the use of enemata of cool water or oil, the recumbent position, the application of tannic acid ointment or hazeline cream, the avoidance of cathartics and the use of the bed pan. Multiple small punctures are sometimes beneficial, but their use should be a last resort. For the sloughing hemorrhoids powdered charcoal makes an excellent but mussy dressing.

If hemorrhoids are seen before thrombosis occurs and can be replaced and kept there, the injection of a few drops of 5-10% urea and quinine hydrochloride solution into the center of each internal hemorrhoidal mass, repeated as necessary at intervals of ten to fourteen days, as recommended by Terrell, will in many instances effect a painless cure.

Zobel remarks, "It is remarkable how very large protruding hemorrhoids disappear after confinement, only to recur with subsequent pregnancy, so why interfere under such con-

ditions?" He answers his own question when he states that they "recur with subsequent pregnancy," and the dread of this recurrence makes many a pregnant woman miserable.

During labor any attempt at replacing prolapsing hemorrhoids will probably fail, and, should one be successful, they will not remain in their natural habitat. If painful, $\frac{1}{3}$ to $\frac{1}{2}$ % of urea and quinine hydrochloride injected will carry the patient through labor comfortably. The responsibility of curing the hemorrhoids of labor is thus rightly shifted to the puerperium, during which time many of the factors causing the hemorrhoids having been removed, operation can be one of election. The best time is some weeks after delivery, at which time any necessary repair of the anorectovaginal septum can be made.

Another very annoying complication of pregnancy is the thrombotic external hemorrhoid. It is a small, hard, rounded tumor, appearing suddenly at the anal orifice and is exceedingly painful. Its treatment is simple, consisting of incision and evacuation of the blood clot under local anesthesia.

FISSURE AND ULCER IN ANO.

A fissure or ulcer in ano is one of the most distressing rectal conditions complicating pregnancy, and, without a search for the real cause, pressure of the pregnant uterus is often blamed for the pain in the rectum, the backache and urinary disturbances produced by it. If the fissure is acute, developing during pregnancy, it can usually be cured by local treatment. First: regulate defecation as advised when dealing with constipation; and, for the pain, apply hot fomentations of water or a saturated solution of magnesium sulphate, or apply 8% chlorotone ointment or a prescription used in St. Mark's Hospital, London:

Subnit. Bismuthi . . .	120	Grains	8.	grams
Cocaine hydrochloride	8	"	.48c.	"
Vaseline	1 ounce		30.	"

For their curative effect one can use locally 25% argyrol, pure ichthyol or an application of a 50% silver nitrate solution. As the latter is very painful, before making the application, it is humane to inject local anesthesia below the fissure.

If the medical treatment outlined above is not effectual in a week or two, it probably will not be, nor will it be if the fissure has thickened indurated edges, a polyp at its upper extremity or a fistula leading from it. Medication failing, the best treatment during pregnancy or the puerperium is incision or excision under local anesthesia (preferably urea and quinine). An infected painful lesion is certainly more nerve-

racking and dangerous to the patient than a much less painful clean one.

During labor, where the patient is suffering from a fissure, immediate relief can be given by injecting the base of the lesion with $\frac{1}{2}$ % urea and quinine solution.

It happens sometimes that acute fissures during pregnancy are cured by the stretching of the perineal region undergoes during delivery and the involution which follows. On the other hand, due to the stretching, fissures often appear after labor where none existed before, and this is especially true where there is syphilis, a colitis, or irritation resulting from induced bowel movements.

FISTULAE.

"If the patient refuses an operation for fistula, what should be done with it?" was asked in a questionnaire sent to proctologists. All did not answer it. One man said, "Operate or leave the patient." Another, "Operate when very urgent." Another, "Operate if healing will take place before confinement." Two others advised operating at the first opportunity after delivery. The question referred to the non-operative treatment and was really answered by only a few, who advised keeping the fistula open all the time and hot stupes when necessary.

Non-surgical treatment, inasmuch as there seems to be no practical way of curing a fistula without surgery, has to deal, first with the prevention of more abscesses and secondly with the constitutional symptoms resulting from absorption. Both would be accomplished by keeping the external opening patulous for complete drainage; but should the opening close and an abscess form, no time should be lost in thoroughly evacuating it.

Personally, I can see no good reason for not operating on a fistula during pregnancy, as there certainly is less danger to the patient from a clean granulating wound than there is from the purulent discharge of a fistulous tract, to say nothing of the possibility of an abscess forming when the fistula temporarily closes.

TUBERCULAR FISTULAE.

One source of apprehension is that practically every fistula is tubercular and that any attempt to cure it surgically will cause dissemination of the infection. This is absolutely erroneous, as tubercular fistulae are seldom found where tuberculosis of the respiratory or intestinal tract does not already exist. Even should the fistula be tubercular, it can be cured in the majority of cases by operation with a cautery knife under local or caudal anesthesia. It takes time and patience to cure such a fistula, but if there is any chance of the patient

recovering from her other tubercular foci, it should always be attempted, and the sooner, the better.

Cure of the fistula does away with one source of infection, her lungs or intestinal condition improves more rapidly and the prognosis is eminently more hopeful.

ABSCESSSES.

An abscess anywhere about the anus or rectum should be widely opened as soon as it forms. It should then be packed with vaseline gauze and kept open by packing lightly until healing takes place from the bottom. Poultices should not be used.

RECTAL OPERATIONS DURING PREGNANCY.

The belief that rectal operation is frequently followed by miscarriage, which was the teaching when the writer attended college, seems absolutely unfounded, and it is doubtful if such an operation is any more apt to cause it than is the excruciating pain and suffering of some of the rectal conditions. From their personal experiences fifteen proctologists consulted have not found that rectal operation on the pregnant woman causes miscarriage. De Lee and Edgar, on the contrary, advise against operation, and Davis says it is "rarely necessary." The writer has many times performed rectal operations, when necessary during pregnancy, and has never had a miscarriage.

ANESTHESIA.

For anesthesia undoubtedly gas and oxygen (with ether as necessary) and local anesthesia in suitable cases are safest for mother and child.

CONCLUSIONS.

A routine examination of the colon and rectum, as part of the examination of the pregnant woman, will often reveal rectal conditions, the treatment of which will prevent much of the discomfort and suffering of pregnancy, labor and the puerperium.

Where rectal disease exists in a woman likely to become pregnant, or where it caused much suffering during a previous pregnancy, necessary measures should be taken to effect an early cure.

To keep the colon in as nearly a normal condition as possible, especially the lower portion, soft (not fluid) stools are necessary, and the rectum should be emptied at least once a day. Diet, liquid petrolatum and agar agar with a small cool enema in the morning will accomplish this.

The rectal complications, in selected cases, should be treated medically; and, when this fails, surgically.

Operative measures should be curative during pregnancy, palliative during labor and postponed during the puerperium, if possible, until such time as necessary repair to the ano-rectovaginal septum can be made.

Contrary to some teaching, there is practically no danger to mother or fetus in operating on the pregnant woman, and the danger of miscarriage, if any, is insignificant.

Local anesthesia and gas and oxygen are safest for the pregnant woman, also least disturbing to the mother and babe.

SOME CLINICAL AND PATHOLOGICAL OBSERVATIONS ON BRAIN TUMORS AND ABSCESSSES.*

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THE clinical portion of this report includes some observations on a series of thirty-eight cases of brain tumor and eleven of brain abscess observed during the past fifteen years.

The pathological report comprises a few cases not included in the clinical series, as all the work was not done jointly, at the time, and not all the autopsies are included in the present pathological report as some of them are not local cases and the details are not available.

New growths or expanding lesions within the cranial cavity produce symptoms by pressure, irritation and destruction of the parts involved and by diffuse hydrostatic pressure throughout the entire cavity.

The anatomical location of the lesion is the most important factor in producing the characteristic combination of symptoms, which may be general or focal, or both. These symptoms depend largely on mechanical principles, and it is the study of some of the mechanical factors that is the object of the present report.

The clinical study of brain tumors may be taken as a paradigm for all intra-cranial lesions. A large portion of the cerebral localization work has been due to the study of the irritative and destructive effects of tumors.

Theoretically, every tumor starts as a minute lesion, gradually increasing in size and should give corresponding symptoms. In some so-called silent areas lesions may attain considerable size without giving rise to any characteristic symptoms, general or local, or the general symptoms of increased pressure may mask any focal symptoms. As the function of these silent regions becomes better known the special

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symptoms will be apparent and serve as localizing signs.

In rare instances tumors have been found at autopsy when no symptoms were discovered during life. Such cases are usually tubercle, especially in children, where, owing to the difficulties of examination and the lack of co-operation on the part of the child the lesion may be overlooked.

In reviewing the thirty-eight cases of brain tumor to determine the relation of the general to the focal symptoms it was found that twelve cases showed definite focal signs preceding the general pressure symptoms. These focal signs, insignificant at first, gradually developed a definite syndrome of sufficient value to localize the lesion before the diffuse pressure symptoms masked the clinical picture.

Early focal signs were found most frequently in tumors of the motor cortex, the mid-brain, pons and cerebellum, and especially the pontile-cerebellar angle. One occipital lobe glioma showed no general symptoms, and the accompanying hemianopsia with visual hallucinations in the blind field were thought to be due to softening from thrombosis.

In fifteen cases the general symptoms appeared co-incidentally with the focal symptoms and the localizing symptoms were more or less obscured by the general pressure symptoms.

Cerebellar tumors have shown the most intense general symptoms, but these were usually preceded or accompanied by some definite focal signs. Severe trigeminal neuralgia was an early symptom in two cases.

The remaining eleven cases showed only general symptoms. At no time during the entire course were any focal symptoms observed which were in any way characteristic or of value in localizing the lesion, by the clinical signs.

In addition to these tumor cases a number of others have been under observation showing the syndrome of increased intra-cranial pressure, as headache, vertigo, mental disturbances, and fundus changes. Some of these have run their course and shown to be various types of encephalitis, edemas, pseudo-tumor, serous meningitis or uraemia. A few were probably tumor cases but the diagnosis could not be confirmed by operation or autopsy.

A study of the various general symptoms has been of little value in differentiating these lesions causing increased intra-cranial pressure. The symptoms are essentially the same regardless of the nature of the lesion as they depend on diffuse pressure of the entire cranial contents.

Tabulating the thirty-eight tumor cases the general symptoms were found as follows:

Headache	36
Diffuse tenderness	7
Localized tenderness	4
Enlarged veins of face or scalp...	12
Optic disk changes	30
Generalized convulsions	8
Localized convulsions	4
Vertigo	18
Vomiting	25
Nystagmus	7
Diplopia Persistent or transient..	11
Changes in pulse rate	14
Cheyne-Stokes respiration	4
Psychical disturbances	15
Bulimia	6
Diabetes Insipidus	2

In the non-tumor or doubtful cases the headaches were also the most prominent symptom; next the vertigo and vomiting. Psychical disturbances, as confusion, irritability, stupor, and a state resembling a toxic delirium appeared somewhat more frequently than in the tumor cases. Fundus changes were less frequently observed.

The general pressure symptoms are largely due to mechanical interference with the cerebro-spinal fluid, and by venous congestion from pressure on the large cerebral veins.

Occlusion of the foramina of Magendie and of Luschka prevent the escape of the ventricular fluid into the subarachnoid space and the cisterna magna, with the result that acute internal hydrocephalus develops. In other instances the foramina may remain open but the absorbing surface of the sub-arachnoid is probably compressed or obliterated and the pressure increases. It is this latter condition in association with the swelling from venous stasis that produces the highest pressure as recorded by the spinal manometer, which in some cases may be considerable.

The highest pressure recorded in this series was 850 millimeters water pressure, equivalent to about 63 millimeters of mercury.

The rate of flow of the spinal fluid through the lumbar puncture needle may be very deceptive in estimating the pressure. In some cases where the fluid was discharged drop by drop a high pressure was recorded by the manometer. This is probably due to a valve-like occlusion of the needle by roots of the cauda equina or improper position of the needle. It has also been observed in some of these cases that turning the needle about or changing the position increased the flow without changing the reading on the manometer.

The use of the manometer in measuring the spinal fluid pressure has been of some value in estimating the amount of fluid which can safely be removed. The danger of lumbar puncture in posterior fossa tumors is well

known, and fatal results have followed the removal of even moderate quantities of fluid. This happened in one of our cases where a fatal bulbar paralysis occurred about one hour after the lumbar puncture, when the patient sat up in bed for a few minutes. In any case where the pressure amounts to 20 millimeters or more of mercury, only a very small amount of fluid, one or two cubic centimeters, should be removed and following this the head should be kept lowered for 24 hours or longer.

Distention of the ventricles may be visually demonstrated by roentgenograms of the ventricles filled with air or oxygen. The injection made by lumbar puncture will reach the ventricles if the foramina are open. In some instances the occlusion of the foramina of Magendie and of Luschka prevented the air reaching the ventricles while it could be seen overlying the sulci of the cortex. This in itself, is characteristic of the occlusion.

Injection of air directly into the ventricles is also of value in showing the patency of the foramina. When the foramina are open the air escapes to the sub-arachnoid space, and is seen filling the cisterna magna and the sulci between the convolutions. Otherwise the lateral and other ventricles show the shadow without any external shadow in the roentgenogram.

Ventriculograms are also of considerable value in localizing deep-seated lesions which produce changes in the contour of the ventricular walls. Some remarkable results have been obtained by Dandy in this line of investigation. Up to the present time our results have been negative in finding lesions deforming the ventricular walls, altho the evidence obtained has been of value in elimination of such lesions. It is possible that some of the earlier cases of doubtful nature might have been localized if this method had been used.

Other evidence of the mechanical effect of increased intra-cranial pressure are seen in the cases of sudden blindness, permanent or temporary, from pressure on the optic chiasma, due to sudden hydrocephalus, while similar pressure on the sheath of the acoustic nerves produces deafness.

In several instances the diminution and final loss of the patellar tendon reflex was concomitant with the increasing pressure. With relief of the pressure by lumbar puncture or by decompression operation the tendon reflex returns. This phenomenon has been particularly observed in tuberculous meningitis, where the pressure may be extreme.

Percussion over the lateral ventricles frequently elicits a tympanitic percussion note due to hydrocephalus. This, so-called MacEwen's sign has been modified by relief of the

internal hydrocephalus by lumbar puncture or tapping the ventricles directly.

Localized changes in percussion note have been found in some of the tumors associated with cystic degeneration when lying near the cortex. In one case a large cyst in the right frontal lobe was accurately outlined and at operation, a right sub-temporal decompression, an aspirating needle inserted into the area of dullness was successful in removing over sixty cubic centimeters of fluid. This fluid was entirely different from the fluid obtained by lumbar puncture.

Skiagraphs may show other evidences of prolonged pressure as the erosion of bone over the tumor in superficial growths. Pontile-cerebellar angle tumors have shown erosion changes in the adjacent portion of the temporal bone.

Changes in the sella Turcica are a characteristic picture in hypophysis tumors, altho numerous similar changes appear in skiagraphs which show no other evidence of tumors. One case recently under observation, and not included in the above series, showed a greatly enlarged sella turcica with erosion of the clinoid processes but no other evidence of intracranial lesion. The picture was taken to study the sinuses and the other change was an accidental finding. This case is being kept under observation for any further development of symptoms.

The mechanical factors in the brain abscess cases were similar to those found in the tumor growths. The general pressure symptoms, however, were less intense and in a few cases were absent.

One case of abscess in the left temporal lobe had remained latent for ten years following an otitis media. Acute symptoms were precipitated by an injury to the head which was followed by purulent meningitis. At the autopsy a large cavity filled with thick pus and surrounded by a dense capsule, the walls over one-fourth inch thick occupied almost the entire lobe. The trauma had set up fresh activity in the abscess which ruptured into the lateral ventricle.

In another case of acute abscess following otitis media the rupture into the ventricle was accompanied by severe rigidity of the extremities with continuous fine tonic-clonic movements for six hours. In this case the rigidity was probably a ventricular symptom while the tonic-clonic convulsions resembled the continuous epilepsy of a meningo-encephalitis.

PATHOLOGICAL REPORT.

The autopsy records showed a number of conditions that exhibited special points of interest. While not out of the ordinary, they were nevertheless illustrative of the difficulties

of always accurately localizing focal intracranial conditions or interpreting the pathology present. Some of the cases would seem to put laboratory tests and X-Ray into disrepute, because they were apparently misleading. It is true that complete study is not always possible, and the early history is often lacking or confusing. One of our cases survived hospital entrance five hours.

Associated pathology may for a time so dominate the clinical picture that the cerebral condition is lost sight of, and the reverse condition may be equally true. The very nature of these cases, at best, makes for a poor prognosis, but if they are to have even their slender chance for surgery, early recognition is essential, because destruction of nerve tissue takes place rapidly.

In a general way it must be admitted that intra-cranial localization may be somewhat of a gamble and the occasionally cerebral edema, such as occurs in chronic interstitial nephritis, may give rise to very definite localizing signs.

In one of our cases, the patient, after considerable study was prepared for operation for relief of symptoms indicating a tumor at pontile-cerebellar angle. Death, however, intervened, and the post mortem yielded no tumor but a cerebral edema and small granular kidneys.

The question of trauma is raised in many cases. Just as in breast tumors some injury in the more or less remote past can be recalled, so these frequently develop the history of a trauma. In our opinion this connection has been merely incidental, not etiologic.

A brief discussion of some of the clinical facts with the essential pathology as found post mortem is presented in a few of the following cases:

Case 1. Italian child; female; 6 years old. A specific family history prejudiced the attitude in this case. A general adenopathy and an x-ray of a bone lesion were both interpreted as of specific nature and led to active specific treatment. The cranial lesion was interpreted as gumma with pressure symptoms. Decompression was resorted to twice, each time with some relief and favorable modification of symptoms. Autopsy revealed definite pulmonary tuberculosis following the breaking down of peri-bronchial lymph nodes. A large solitary tubercle was found in the right cerebellar hemisphere, occupying two-thirds of the substance. In addition to this a small tuberculoma, about the size of a filbert, was found in the heart muscle, and numerous ulcerations in the small intestine. While no gross syphilitic lesions were found and no microscopic evidence of lues, we are willing to admit that a taint may possibly have existed. The fact remains,

however, that the lesions found were tubercular and that the symptoms were caused by these lesions. The lung signs were overshadowed by the cerebral conditions and the true sequence only established at autopsy.

Similar features, in part, existed in another case, a colored, male adult, who was admitted to the hospital with a pronounced cerebral condition which was so predominant that the medical service relinquished the care to the neurological service, where the lesion was definitely located in the right cerebellum. Its nature was not speculated upon. The case was considered a poor surgical risk. The general condition became rapidly worse, and after death, the autopsy yielded a large fused tubercular area involving the entire right cerebellar hemisphere. Advanced pulmonary tuberculosis and a bilateral suprarenal tuberculosis were also found.

• A number of similar cases could be cited where a primary focus of tuberculosis was always found, and generally without much difficulty. In only one case was the primary lesion difficult to find. In one case reported by Dr. H. U. Williams, the primary lesion was found to be an ulcer in the small intestine.

While for all practical purposes tuberculoma may be considered a tumor, and the exact nature may not seem important, yet surgically it would seem essential that the true nature be determined. With the recognition of a cold abscess of the elbow, a suprarenal tuberculosis or an advanced pulmonary tuberculosis a case would immediately be removed from surgical consideration.

Along similar lines the metastatic cranial lesions have presented interesting phases.

A young woman, thirty years old; single; first consulted a surgeon because of vague abdominal symptoms. Both the gall-bladder and the appendix were under suspicion for a time. Headaches, vomiting and double choked disks, however, directed attention to the cerebral condition, where a lesion was located in the right frontal lobe, producing pressure on the motor cortex. At operation a cystic gelatinoid tumor was found which was reported to be endothelioma. At autopsy the cerebral lesions were found to be multiple and metastatic, varying in size from a split pea to a lima bean, and all of them accompanied by a sticky gelatinoid secretion. The primary tumor was a papillary cystic adenocarcinoma of the left ovary. Multiple pulmonary metastases, which in turn led to the extensive cerebral lesions and large plaques of metastases in the stomach and intestines were found.

In the latter situations the lesions were large, slightly elevated plaques, irregularly round and a little larger than a silver dollar.

Two cases of hypernephroma, with cranial metastases, yielded an illuminating early history that fitted in only after autopsy, as the symptoms during life were confusing.

The first was that of a sturdy, robust male, sixty-three years old, who, following what appeared to be an acute pulmonary condition, developed a peculiar ataxic gait, with spasticity and gradually increasing paraplegia most marked on the right side. The case was thought to be an infectious myelitis secondary to the pulmonary condition. At autopsy the primary tumor was found in the left kidney, producing metastases in the lungs and in the cerebellum encroaching on the pontile-cerebellar angle. The acute pulmonary symptoms were in all probability the beginning of the pulmonary metastases.

The other case had a much more stormy time of it. This was a maiden lady, close to the menopause, who had developed tachycardia and a fine tremor, which, after some study was assumed to be a case of hyperthyroidism. She was under observation for nearly two years, and had a marked urinary crisis that apparently cleared up under treatment. Functional tests and metabolic studies were not made. The thyroid artery was ligated to lessen an assumed hyperactive state. Later, with return of symptoms, thyroidectomy was done. The symptoms, however, continued with the addition of a cerebral complex. Finally, when this case came to autopsy, a large hypernephroma was found involving the entire middle portion of the right kidney, leaving only a small portion of each pole. The tumor mass was found growing into the renal vein. A walnut-sized metastasis was found at the apex of the right lung, and a similar sized lesion at the posterior pole of the right cerebral hemisphere. It is interesting to speculate on the possible influence a secretion from the tumor cells might have had in producing the tachycardia and tremor. Metabolic studies would have absolved the thyroid; functional renal tests, with ureteral catheterization would have fixed the kidney tumor. Tumor cells of a hypernephroma have been found in sedimented urine.

One case of multiple, dural psammoma was of unusual interest. The slow progress of a progressively increasing paraplegia, that finally caused death by involvement of the respiratory center, had given rise to considerable speculation as to its exact nature. No definite conclusions were reached other than that some cerebral tumor existed which was making pressure high up on the cord. The autopsy showed one large dural psammoma, one and one-half centimeters in diameter situated to the right of the posterior edge of the foramen magnum.

Four smaller dural tumors were found over the cortex of both sides. Incidentally there remained only a shell of thin kidney substance wrapped around a massive calculus, with no evidence of infection locally.

The abscess conditions, because of the infectious element and the more or less direct connection with middle ear disease, did not offer so much difficulty in diagnosis. The terminal condition was usually a meningitis. The size of the abscess pockets were occasionally astonishing. In several cases the entire cerebellar hemisphere was hollowed out into an abscess pocket. In one case large abscesses were found in both temporal lobes.

While the infectious middle ear left no doubt as to the cause of the abscess, the dura was found to be perfectly intact in many cases. In other cases the bone was found denuded. In the latter case the connection was direct with adhesions of the meninges around the edges of the denuded area. In the other cases the infection was carried by way of the lymphatics.

Primary tumors of the brain do not develop so many angles, but the variable location does give rise to much speculation. A number of times tumors were found in the frontal lobe where the clinical diagnosis had placed them in the cerebellum. One case was discharged from the hospital as not having a brain tumor. Some time later this case came to autopsy and a large tumor was found in the left temporal lobe.

The cerebellum was found to be the most frequent site of tumor. Next in order of frequency the tumor was found in the frontal lobe, the temporal lobe and the basal ganglia.

The size varied from a filbert to six centimeters in diameter.

The question of trauma was raised in many of them.

A positive Wasserman reaction was reported in three cases.

The ages ranged from six to sixty years.

The histology was variable. Some form of sarcoma was the most common. Five were pure glioma; one a glioganglio neuroma; and one multiple psammoma.

Hemorrhages occurred in most of them.

SUMMARY.

At times it would appear that both the neurologist and the internist had overlooked what the autopsy had revealed as obvious. The reason is probably that the specialist is loath to trespass on other fields, while the internist is equally loath to trespass upon the field of the specialist. The patient is not safe depending on either one alone. The diagnostic clinic

as now in progress of development would appear to be the solution for such cases, where a careful general survey of the entire body is made by experts in every field.

Intracranial lesions will be studied with more and more success as knowledge increases. Cranial surgery has developed to a high degree of efficiency, and tumors are not infrequently successfully removed at operation. Still, there will always be more or less speculation, and, if proof is not obtained by exploratory operation, it is hoped the pathologist will not be neglected, and opportunity given to develop the proof at the post mortem table.

THE NEUROPSYCHIATRIST AND THE STUDY OF A PERSON AS A WHOLE.*

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AS a rule, the time of medical society meetings is best occupied by reports of concrete experiences in the study of single patients or of groups of patients and in the description of new methods of diagnosis and therapy and the recital of the results of their application. But, on occasion, it may be worth while to admit to the program a paper that deals with more general considerations merely in the hope of stimulating thought or investigation. With the latter object in view, I have chosen for my topic, "The Neuropsychiatrist and the Study of a Person as a Whole."

AIMS OF MEDICINE.

Medicine, as science and art, has as its object the acquisition of knowledge concerning health and disease and the practical application of that knowledge to the preservation of health and the prevention of disease, to the cure or to the arrest of disease when it develops, and to the amelioration of the suffering of persons who may be attacked by disease, whether curable or incurable. Medicine keeps in view the ideal of human beings possessed of an abounding vitality, endowed with capacities compatible with the leading of personally happy and socially serviceable lives, persons able to adapt themselves satisfactorily to their environment. That this goal is a distant one, everyone knows. That medicine will ever reach the goal is improbable. That it is making strides toward it, however, is certain and gratifying. Neuropsychiatrists, like other specialists and like general workers, desire to contribute their share to progress toward the ideal.

* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 18, 1922.

MAN, THE MOST COMPLEX OF INTEGRATES.

Of all the co-ordinated systems of activities in the world, the most complex is that of living man. Nor is there any study more difficult than that of man. The study of the ether and of electrons is abstruse enough to occupy all the energies of the physicist. The study of atoms and of molecules, with utilization of the knowledge concerning electrons that the physicist supplies, provides work throughout his life for the chemist. The biologist, in turn, makes use of the knowledge that physicists and chemists supply in his study of the simpler and the more complex biointegrates that we call "living organisms." Finally, the physician studies man, the highest and most complex of all living creatures, applying the knowledge and technique of the physicist, the chemist and the biologist to the solution of his problems. The neuropsychiatrist, in particular, has to deal with the structure and functions in health and in disease of the most highly organized part of man, namely the multi-neuronic integrate known as the nervous system; the object that he studies is the most complicated of mechanisms. The task that he has set for himself might well appal a Titan. When the neuropsychiatrist realizes the double nature of his problem, the study of nervous systems on the one hand and the study of conscious personalities on the other, he must be deeply impressed both with his difficulties and his responsibilities. The neuropsychiatrist, perhaps more than other medical men, is well prepared to understand and to appreciate the significance and the difficulties attendant upon the study of "a person as a whole."

BIOLOGICAL VIEW OF MAN.

Medical men have been so intent upon the study of symptoms and signs, upon the establishment of clinical syndromes, upon improving classifications of disease, upon investigation of the origin of various forms of injuries to man, and upon devising new methods of diagnostic exploration, that they have, to some extent, lost sight of the larger, biological conceptions of man. They have been so interested in the structure and functions of the component parts of man, that they have neglected man as a whole organism. The integrated, psychophysical person is something more than the mere summation of his component parts.

Biology herself has, in recent years, entered upon a new epoch. In the nineteenth century, she devoted herself to the study of the origin of species as her main problem. In the present century, the most important biological research has been that which has investigated the origin of individuals (Conklin). Experimental studies of heredity and of development have thrown much light on this problem and the knowledge

acquired is rapidly changing opinions regarding the personality of man, regarding human behavior, and regarding race betterment. Man is coming to recognize not only that development may be controlled but that also heredity is subject to definite natural laws, a knowledge of which may be turned to racial profit. Evolution is becoming, to a certain extent, a self-conscious process.

GENOTYPE AND PHENOTYPE

A person, say a patient, entering a physician's office, is the resultant of reactions between two sets of factors, or causes, the first set being those represented by the "zygote," or organization resulting from fusion of the germ plasm of the sperm cell with that of the ovum, the second set being those represented by all other influences or conditions. We refer to the first set as hereditary or constitutional factors; to the second set as environmental influences. The germinal makeup, composed of a complex of "gens," is known as the genotypic constitution or, briefly, as the *genotype*. What will develop out of this genotype depends, first, upon the structure and potentialities of the genotype itself, and, second, upon the influences (external to it) with which it reacts. The realized person that is the resultant of reactions between the genotype and its environment is known as the *phenotype* (Johannsen).

Thus a given genotype in contact with an environment gives rise, as development proceeds, to something that is ever changing. The genotype determines, in general, the modes of reaction of the organism; its constituent factors are responsible for the direction and guidance of the development. The actual reactions that occur depend also, however, upon the environment that the genotype meets. The genotype is the original whole; the succeeding stages of development are secondary wholes, modifications of the original whole dependent upon environmental conditions. The kind of body that a person has and the qualities of mind that he exhibits are both resultants, in the determination of which hereditary influences and environmental influences have been co-decisive factors.

The behavior of the person as a whole, his psychical and physical manifestations, are evidences of continuously disturbed vital equilibria. What we know as "adaptation" is change of equilibrium corresponding to a new situation. In the more adequate phenotypes the successive changes of equilibria, or readjustments, favor self-preservation, race-continuance and race elevation. In the less adequate phenotypes, they may result in self injury, may tend to race extinction or may lead to social harmfulness. What we call good behavior or good conduct of a per-

son is that by which the "self" is realized in the service of "society."

PHYSICAL AND PSYCHICAL.

Viewed from the biological standpoint, the physical aspect and the psychical aspect of the person are equally interesting. The neuropsychiatrist desires to know as much as he can both of the bodily makeup of the person and of his mental personality, for the structure and functions of the bodily organs on the one hand and the characteristics of the associated personality on the other are determined by reactions between the genotypic constitution and the extrinsic stimuli that act upon it. Whether we pay attention in a given instance more to the psychical manifestations or more to the physiological processes depends upon the mode of investigation that we wish to employ at the moment.

Every patient is a unique, human individual. No other person precisely similar physically or psychically has ever existed, or ever will exist. This singularity of the patient's body and mind should be kept ever in view. A differential anthropography has to deal with processes and conditions that are peculiar to the psychophysical individual.

If we study the reactions between a phenotype and its environment, and pay attention especially to those that differentiate it from other phenotypes, we get clues to the general laws to which the particular individual is subject. Though the genotypic constitution has been fixed at the beginning and decides the general direction of the psychophysical reactions, nevertheless, the organic sub-stratum is undergoing constant change; owing to reactions with the environment and in the behavior of the person there will be recognizable not only marks of genotypic source but also marks of environmental source. Each single patient has his own special ways of establishing equilibria between himself and the environment. Only by keeping these biological facts in mind shall we make progress in the direction of the development of our knowledge of the pathology of constitution.

THE INTERNIST, THE NEUROLOGIST AND THE PSYCHOPATHOLOGIST.

Hitherto, the function of the internist has been to study especially the structure and the modes of reaction of the several component systems of the patient by physical and chemical methods, laying much emphasis upon the fact that anatomical structure and physiological processes are subject to physical and chemical laws. Some attention to the behavior and to the mental experiences of the patients the internist has given, it is true; but the anamneses of most internists are richer in data regarding intoxications, infections and traumata than in data pertaining to psycho-

biological reactions, to mental trends, to affective-conative states and to familial and social situations. It is gratifying that some internists are becoming alive to the importance of an all-round study of the patient as a whole. One professor of internal medicine (F. Kraus) has recently written a volume on the "General and Special Pathology of the Person," or what he calls "clinical syzygiology."

The neurologist, in turn, has directed his attention especially to the phenomena of motility, sensibility, reflex activity and to changes that are discoverable in these in patients. In the course of his studies, however, he has found himself in a borderland between inner medicine on the one hand and psychiatry on the other. The neurologist and especially the neuropathologist has done much to build a bridge from one domain to the other, especially by his studies of the aphasias, the agnosias and the apraxias and of the cerebral pathology underlying them.

The psychiatrist has made a special study of the abnormal mental states of patients; the special direction of his investigations has been toward the psychic rather than toward the somatic side of the "person" that he sees as a patient. But the newer psychiatry, in struggling to understand the nature and genesis of abnormal mental states, has departed from the traditional paths of academic psychology and has formed an alliance with "objective psychology" and with general biology. The modern psychopathologist studies human behavior in general, and interests himself especially in the phenomena of maladaptation of the person as a whole to his environment. He inquires into what he calls the "concrete assets of the person," observes his performances of biological adaptation, and scrutinizes his methods of coping with emergencies. In his diagnostic inquiries he pays attention to non-mental as well as to mental factors; and in his therapy he attempts to help the patient to better readjustment of his conflicts, his inhibitions, his overexcitations, and his fixations by educating him and by controlling his environment.

TEAM-WORK IN MEDICAL PRACTICE.

The knowledge and technique necessary for the thorough study of a (psychophysical) person as a whole has become so complex that it is now beyond the power of a single physician to attain to mastery of all parts of it. The complete analytical and synthetic study of a person, a psychophysical individual, by modern clinical methods demands (1) examinations by experts in the study of the several component bodily systems (respiratory, circulatory, digestive, urogenital locomotor, neural, endocrine), (2) technical studies of the biography with special reference to the assets and deficiencies of the associated personality; and (3) an integration of

the results of the various examinations into a diagnostic whole that is properly coordinated and subordinated. By such a thorough survey only can the modes of reaction of the phenotype or "realized person" be as satisfactorily recognized and the hereditary and environmental factors be as fully appreciated as the present state of clinical knowledge and technique make possible.

That the neuropsychiatrist can be most helpful in contributing to such a comprehensive study, which tries to ascertain (1) the main characters of the genotype or inherited psychophysical mechanism, and (2) the modifications resulting from the patient's life experiences and manifest in the present phenotype, goes without saying. For it is the neuropsychiatrist, especially, who consciously makes use of the conception of adaptation or adjustment to internal and external needs. He, more than other members of the diagnostic team, should be familiar with inheritable instinctive tendencies and with the cognitive, affective and conative aspects of the instincts. He has had, too, in his work, opportunity to learn the kinds of reaction that are common when adaptations are faulty and adjustments are difficult. And when he examines a patient, he tries to ascertain the special forms of psychobiological reactions that he manifests, and to detect the different varieties of imbalance he exhibits. Through ventilative discussions of difficulties with the patient and with the patient's family and by means of special inquiries into the rôle played by situations, he can often account for many of the patient's special experiences. He discovers the habits that the patient has formed, whether good or bad, and the various unwholesome attitudes of associates (parents, teachers, comrades) to which he has been exposed. In all these ways, the neuropsychiatrist helps to accumulate anamnestic data that can be helpful in diagnosis.

When the results obtained through the examinations of internists, of various medical and surgical specialists, of neurologists and psychiatrists have been collected and arranged, the data can then be critically examined with reference both to the endogenous and the exogenous factors that have been responsible for the production of the special phenotype (or realized person) that the patient represents. It should then be possible to plan a therapy that will pay due attention to the physical, chemical, psychical and situational measures that will most favorably modify the person in the direction of adequate adaptability. In the present state of diagnosis, the knowledge we can gain of a person as a whole is but fragmentary, but we shall work with greater confidence if we are sure that our studies are properly directed.

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ORTHOPEDIC SURGERY AND THE
NEUROLOGIST.*

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IN recent years the slogan "group medicine" has become so universal that even the mention of the term seems trite and yet I would venture to urge the need of even closer cooperation between two specialties which to my mind can be of peculiar assistance to one another, neurology and orthopedic surgery. I for one, am frequently struck by the large proportion of neurological cases in my orthopedic practice and the routine practice of the neurologist is bound to include a large proportion of deformities and paralyses which fall within the sphere of orthopedic surgery. A large number of cases are massed along the border line between these two specialties and can be properly treated only by the effective cooperation of the two specialties. The importance of neurological surgery in the treatment of diseases of the

brain and spinal cord is, thanks to the work of Cushing, Frazier and Elsberg, appreciated by every neurologist, but I am led to believe by a number of personal experiences, that the possible benefits to be derived from orthopedic surgery are not as generally known. This fact was impressed upon me most strikingly several months ago when I had under my care a young man suffering from a complete transverse myelitis, the result of an injury seven years before. Both legs were entirely paralyzed, there was complete anesthesia from the knees downward, one foot was ankylosed in equinus, one knee had a flexion contracture. The boy had been a hopeless invalid for seven years. I asked one of my neurological friends to look over the case with me. When he had completed his examination he dismissed the case with the remark, "nothing much to be done there." That boy to-day despite the pessimistic attitude of the neurologist, is able to walk two miles at a stretch and is fitting himself for a position as bookkeeper. The neurologist explained that he had in mind the question of an operation on the cord. That illustrates exactly the purport of my address: to direct attention to the possible relief of neurological cases by attacking not the hopeless brain or spinal cord, but the resultant deformity or paralysis. In the case cited, the ankylosed deformed ankle was remodeled, the boy was equipped with effective braces and taught how to use his body muscles to propel his legs. Through mechanical appliances and muscle re-education subsequent to corrective operations, he was brought on his feet.

Exercises, mechanical appliances and operations singly or together help the orthopedic surgeon to salvage that which would otherwise be thrown on the scrap heap. Each of these therapeutic measures deserves further explanation.

Exercises:—Muscle training in poliomyelitis cases and coordination exercises in tabes dorsalis are so familiar to all of you as to obviate further comment. Less well known are exercises for spastic diseases, particularly Little's diseases and lateral sclerosis. I have in mind a patient of sixty years who for twenty years has been suffering from amyotrophic lateral sclerosis. During all these twenty years no attempt was made to educate his muscles although he was under the care of one of the ablest neurologists in this state. At sixty this man was taught to walk. At forty the task would have been incomparably easier, yet probably because of Oppenheim's statement that exercises are injurious in cases of lateral sclerosis, the patient's treatment for twenty years consisted almost solely in the administration of strychnin. Delighted though this

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patient is with his newly acquired art of locomotion, he is equally indignant that this was not taught him many years ago.

In dealing with spastic cases we must bear in mind the usual predominance of one muscle group over its opponents, the flexors of the hip and knee over the extensors, of the Achilles tendon over the dorsal flexors of the ankle. An attempt must be made to develop the strength of the weaker group. This cannot be done as has usually been taught, by passive stretching of the over-active muscles. This tends if anything, to make these muscles stronger and to increase their hypersensibility. It is far better to try to increase the sensitiveness of the weaker muscles by purposely irritating their motor nerves as advocated by France of Washington. Foerster of Breslau has a similar idea in using what he terms "a sensory indicator." This is some little device designed to press against the skin at a particular point and thus excite a reflex leading to a desirable muscle act. Exercises require an abundance of patience and time, and for this reason they are usually delegated to a nurse, but unless the nurse has been carefully educated by the most modern methods, satisfactory results will not be reached.

Mechanical Appliances:—These have a triple function. First, they prevent deformity. At the wrist and ankle the strong flexors will cause a wrist drop or a drop foot unless the wrist and foot are properly supported. At the shoulder the same principle applies: the weaker abductors must be supported, otherwise the strong adductors will cause a contracture to develop. Almost every case of hemiplegia requires a brace to prevent a spastic equinus and every paralytic condition should be watched for the possibility of a contracture due to the excessive pull of a stronger group of muscles over the weaker opponents. Second, mechanical support is frequently a curative agent of great value in helping to overcome a paralysis, even one of long standing. Sir Robert Jones has published a case in which a wrist drop existing for 14 years was cured by the application of a brace which held the hand extended and allowed the over-stretched muscles to regain their normal range. Although these muscles had for years given a typical reaction of degeneration, they were still capable of regaining function when given the proper mechanical support. It seems at first thought paradoxical to claim that by keeping a muscle at rest, its function will improve, and yet, that is exactly what happens in the case of a muscle whose fibres have been overstretched. Place that muscle in the position which allows the fibres to regain their normal length, keep it there and if the nerves are still intact, the

muscle will regain its former function. I do not imply that massage and electrical treatment are not important adjuvants in the recovery of such a muscle, but the postural treatment will frequently effect a cure of itself.

Third, mechanical support of braces will make locomotion possible in many cases of extensive paralysis. Whether the cause is poliomyelitis, a transverse myelitis or a muscular dystrophy, is immaterial. If the legs have not sufficient muscular strength to support the body, reinforce them by a brace and educate the patient to use it properly. I have yet to see the case in which a patient with healthy arms and fair back, cannot be taught locomotion, no matter how complete the paralysis of the leg muscles. And here a word about the braces. They must be light and fit accurately; the heavy brace is to be condemned absolutely. The pelvic band and trochanter joint usually prescribed are unnecessary in all but the exceptional cases. They add to the weight without increasing the support. Assuming that we are confronted with a patient both of whose legs are completely paralyzed, we adopt the following procedure. He is equipped with light braces extending from the toes to the hips, the knee joint must be provided with a lock to keep it extended. He is then given a pair of crutches and taught how to support his weight properly on them, no easy trick. The body with the two braced legs and the two crutches can be considered as forming a tripod. Since the tripod is quite stable, the patient soon gains confidence and is able to stand alone. He is then taught to lift one hip a trifle, that lifts the corresponding brace off the floor and the leg thus swings forward of its own weight just as any pendulum would. Then the other hip is lifted and the second leg swung forward; then the crutches are advanced and in a short time the patient is walking.

I come finally to the third weapon of the orthopedic surgeon, the knife. Reconstruction surgery, the surgery of bones, joints, tendons and nerves, has advanced so rapidly in the last years that only those technically interested in this work can have an adequate conception of its advance. In no department of surgery has so much been accomplished. In large part this is due to the war which forced thousands of reconstruction problems on us. The significant fact for the neurologist is that many of these gunshot deformities resemble those which he is accustomed to see as the result of organic nerve lesions or of traumata incidental to industry. The pes equino varus of the gunshot injury of the brain is identical with the equino varus of the ordinary hemiplegic. The wrist drop due to a gunshot injury of the musculo spiral nerve is the counterpart of the wrist drop

due to the fracture of the humerus with callous inclusion of the nerve. There is no need before an audience of neurologists, to dwell on the technique of nerve suture. Suffice it that despite a loss of 4 or 5 inches of nerve substance, regeneration has frequently been observed either by the two stage stretching operation or by the method of free nerve transplant. I wish rather to call your attention to a phase of orthopedic surgery in which I have been particularly interested, tendon transplantations as applied to paralytic and traumatic conditions.

It was in 1912 that I first became interested in this subject while working in the clinic of Prof. Lange of Munich. Lange who had probably performed more tendon transplantations than any other surgeon, was painfully aware of the fact that his results were frequently impaired by the development of post operative adhesions. He set another American, Dr. Henze of New Haven and myself at work on the problem how to prevent these adhesions. We worked for a year and finally came to the somewhat obvious conclusion that the only effective method of preventing adhesions was by preserving the normal relationship between the tendon and its sheath. When this was done, adhesions did not develop. Despite the evident simplicity of this conclusion, it had never been properly appreciated by previous surgeons and it was necessary to devise a system of operations in which cognizance was taken of this fact. I can best illustrate the method by citing an example. We are dealing with a case of paralytic flatfoot due to a paralysis of the tibialis anticus and posticus. The peroneal muscles are active and draw the foot into the everted position. Our reconstruction problem is the transference of one of these peroneal tendons in such a way as to take the place of the paralyzed tibialis anticus effectively. A small incision is first made over the normal insertion of the tibialis anticus and the bone here is grooved for the reception of the tendon to be transplanted. Next the sheath of the tibialis anticus is opened near its upper pole, a finger's breadth above the internal malleolus, and a guide suture is passed downward through the sheath and made to emerge at the insertion of the tendon. A third incision is made over the peroneus longus muscle downward to the cuboid bone. Since the peroneal tendon is separated throughout its course from the tibialis anticus by a dense fascial septum, some surgical means must be adopted to prevent the formation of adhesions which would follow boring a hole through this septum. The method devised consists in the formation of two flaps of fascia which are everted and drawn together in such a way as to form a bridge over which the transplanted tendon

can glide freely from its original position downward through the sheath of the paralyzed tibialis anticus. When properly fastened in position, this transplanted tendon is ready to assume the function of the transplanted tibialis anticus within three weeks after the operation. The most striking part of the entire procedure is, that the brain which formerly was accustomed to use the peroneal muscle to evert the foot, within a very short time becomes reeducated to use it as an invertor. An analogous operation can be performed for cases of paralytic clubfoot. In these the over active tibialis anticus is transplanted through the sheath of the peroneus tertius and serves to evert the foot instead of inverting it. A somewhat more difficult problem is that presented by a paralysis of the gastrocnemius and soleus muscle. This paralysis results in the formation of a hollow-foot. When the deformity has become marked, a reconstruction of the architecture of the foot is necessary, but in mild or beginning cases, tendon transplantation is sufficient to overcome it. Both peroneal tendons and the flexor longus hallucis are implanted into the os calcis just at the insertion of the Achilles tendon. At the knee disability frequently results owing to paralysis of the quadriceps extensor. Here the biceps tendon can be effectively transplanted and attached to the patella either with or without one of the internal hamstring muscles. After this operation the reeducation is of particular importance since it is necessary to teach the muscle exactly the opposite of what it was formerly accustomed to do. The same difficulty applies to cases of drop wrist, the result either of birth paralysis or inoperable injury to the musculo spiral nerve. Two of the flexor tendons are transferred to the dorsal aspect of the wrist and attached to the extensor tendons. The results in most cases are surprisingly good despite the very evident difficulty in muscle reeducation.

In the field of traumatic disabilities, tendon transplants are equally effective. May I cite a few instances.

Mr. C. J. sustained a very deep electrical burn to the palmar surface of the right hand. All of the flexor tendons of the left arm were burnt through and the median nerve was completely divided. The operation consisted in the freeing of the tendons from the mass of scar tissue and nerve suture. Almost perfect motion has resulted. On the right hand the extensors of the third and fourth fingers had been completely divided, there was no possibility of reuniting them. To replace them one of the extensor tendons of the index finger and one-half the extensor tendon of the little finger were transplanted. Almost perfect extension has resulted.

Mr. H., complete division of the long flexor tendon of the thumb. Patient was not seen until two months after the accident when a diastasis of $2\frac{1}{2}$ inches was found between the retracted tendon ends. Since it was impossible to coapt the tendon ends, a free tendon graft was implanted between them. The man has recovered perfect use of the thumb and has returned to his profession of druggist.

J. K., while walking through a mowing field was run over by the reaping machine which severed all the tendons on the dorsum of the foot. A marked drop foot resulted. At the operation a retraction of three inches between the tendon ends was found and again recourse was had to the method of free tendon transplantation. The peroneus tendon was divided into strips of appropriate length, drawn through subcutaneous channels and attached to the proximal and distal tendon stumps. 45° of active motion has been gained and the child walks without a limp.

I have tried to indicate some of the ways in which the orthopedic surgeon can be of service to the neurologist. No paralysis and no deformity should be considered so extreme as to warrant consigning the patient to the scrap heap. With the knowledge gained during the war and with genuine optimism and enthusiasm, the orthopedic surgeon is prepared to help even the most hopeless of neurological cases.

THE POSSIBLE CLINICAL SIGNIFICANCE OF THE THYROID-SUPRARENAL CORTEX INTERRELATIONSHIP.*

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WE have two purposes in mind in bringing this subject to your attention. In the first place, we would like to add our protest of those of Stewart,¹ Cushing,² Hoskins,³ and others against the crude speculation and unscrupulous commercialism based thereon, that has done so much during the last five years to discredit a field for research which offers exceptional prospects for important advances both in physiology and in clinical medicine. In the second place, we wish to call your attention to some of the recent work regarding the function of the suprarenal cortex and its interrelations that may eventually have an important bearing on our interpretation of certain clinical problems.

During the last twenty years the literature and

thought concerning the suprarenal glands have centered around, and have been dominated by epinephrin—the active principle of the chromophil tissue. Concerning the suprarenal cortex, we have only the most fragmentary knowledge of its chemistry, physiology or pathology. We are still in doubt as to the role of the cortex and medulla in Addison's disease. There are data and supporters for each of these tissues as the seat of the primary injury.^{4 5} The extirpation of the suprarenals in rabbits often leads to a chronic progressive symptom complex that resembles Addison's disease in many important particulars. Such experiments, however, throw no light on the relative importance of the cortex and chromophil tissues in its production, although it seems difficult to avoid the conclusion that the asthenia and fatal outcome are referable to the cortex. Many long known and well established facts clearly indicate an important relation of the cortex to the sex glands and thyroid. Regarding its relation to the sex glands, we know that the ovaries enlarge after removal of the suprarenals in rabbits, guinea pigs and cats. The suprarenals also enlarge during pregnancy in rabbits and guinea pigs and during ovulation in birds. The suprarenal cortex enlarges after removal of the sex glands. On embryological, anatomical and certain general physiological grounds there are good reasons for grouping the cortex, corpus luteum and interstitial cells of the sex glands together, as regards certain of their functions. We have no term that expresses the close relationship in structure and function now known to exist between them. Both the suprarenal and the sex glands are compound glands. If a term could be found which separated the suprarenal cortex from the medulla and the interstitial cells of the sex glands from the oögenic and spermatogenic cells and at the same time implied a functional relation between the suprarenal cortex and interstitial tissue, the awkward and ambiguous descriptions now necessary, as well as confusion and misunderstanding, might be avoided. Such terms as "Interrenal system" (originally proposed by Biedl for the cortex only), or "parasex tissues," if accepted might fill the increasing need for a collective term. Recently writers have used the term adrenal gland for the cortex only.

Returning to the proper subject of this paper—the relation of the parasex tissues, and in particular the suprarenal cortex to the thyroid—many of you will recall that this is perhaps the oldest, and one of the most striking of all known interrelations of glands with internal secretions. Known to the ancients in its crudest external manifestation (thyroid enlargement associated with sexual activity), a subject of their daily conversation, it has passed down to our time with but few additional facts. In view, there-

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fore, of the obvious relations of increased thyroid activity to the periodic variations in sex gland activity, and of the fact that removal of the ovaries or testes usually leads to a slight decrease in metabolism, and in thyroid activity, we have, by a process of exclusion, selected the suprarenal cortex as the most probable portion of the gonadal system influencing certain variations in thyroid activity. Measurements of the respiratory exchange were considered the best available clinical means for demonstrating any variation in thyroid function. It should be pointed out, however, that the respiratory exchange is by no means an accurate gauge of thyroid activity.

In the first series of experiments, rabbits were used. Later, Dr. Scott carried out similar observations on cats. In rabbits, we have produced suprarenal insufficiency by (1) removal of the glands and by (2) freezing the cortex with ethyl chloride after mobilization with as little injury to their blood supply and nerve supply as possible.⁶ In cats, Dr. Scott⁷ has, in addition, utilized the method of vein ligation which, while less easily controlled than freezing because of variations in the collateral blood supply, has the advantage of causing very little injury to the nerve supply which, since Dreyer's experiments,⁹ we know control the discharge of epinephrin. Complete metabolic studies have been carried out on 39 rabbits with intact thyroids in which the suprarenals were removed, and on 15 rabbits in which they were frozen. It has been found that the reactions following these forms of crippling the suprarenal function as regards heat production may be divided into three groups as follows:

1. Those that live indefinitely with no appreciable alterations in the respiratory exchange or in clinical behavior.

2. Those that show an increase in the respiratory exchange followed by a fall to or below normal whether dying within two or three weeks or living on indefinitely.

3. Those that show a fall in metabolic rate beginning within 48 hours and continuing to death.

Of 34 rabbits in which complete removals of the suprarenals were made, 4 or 12% showed no significant change in heat production, 25 or 73% showed a rise in heat production varying between 10 and 63% and lasting from one week to several months, 5 or 15% showed a fall in heat production to death. These results have been tabulated as follows:

SUPRARENAL GLANDS	GROUP I No Rise in Heat Production	GROUP II Rise in Heat Production	GROUP III Fall in Heat Production
Frozen	8 53.3	6 40%	1 6.7%
Complete Removal..	4 12%	25 73%	5 15%
Incomplete Removal	4	1	
Totals.....	16 29.7%	32 59.3%	6 11%

The rise in heat production is absolute. It usually begins in from three to six days after

removing or injuring the suprarenals and lasts from a few days to several months. Sometimes in rabbits and frequently in cats the rise in heat production is preceded by a fall lasting two or three days. Infection, trauma and nerve injury we believe may be eliminated as important factors in this increased heat production. The simplest explanation for this increased heat production with the facts at present available, is that it is in part due to increased thyroid activity brought about by the removal of a regulatory and inhibitory influence normally exercised by the suprarenals, and that it is dependent upon the cortical rather than the medullary function.

In order to determine the influence of the thyroid in bringing about this increased heat production we have carried out fifteen complete experiments on rabbits where the thyroid gland was removed, and after the fall in heat production, which usually reaches its maximum in the third week, the suprarenal glands were removed.⁸ In but two of the fifteen experiments was there a significant rise above the lowest level of heat production following thyroid removal and in this instance it did not rise above the normal control level for that animal. The importance of this observation is indicated by the fact that a rise of over 10% in heat production was obtained in 25 of 34 rabbits with intact thyroids following suprarenalectomy. These facts, we believe, establish another thyroid-suprarenal interrelationship, which, with our present knowledge, seems to depend upon an antagonistic action of the thyroid and suprarenal cortex. The fact that the increased heat production occurs after removal of most of the chromophil tissue and that it occurs after vein ligation only (as shown by Scott for cats and probably Golyakowski¹⁰ for dogs), where most of the nerve supply to the glands is uninjured shows that epinephrin has very little to do with it. Animals, in which a functionally active fragment of the suprarenal cortex, or in which large amounts of accessory cortex are left, usually do not show an increased heat production or departure from normal behavior.

From these data we conclude that it is the cortex and not the medulla that is important in this reaction. As to the means by which the suprarenal cortex normally exercises a control over thyroid activity, nothing at present is known. We would like to emphasize at this time that while the thyroid-suprarenal cortex interrelation appears to be an important one, it is not believed that it is an isolated or independent one, but on the contrary there is abundant evidence that these tissue functions are intimately and vitally related directly and indirectly to many other tissue functions.

As regards the possible clinical associations in which this thyroid-suprarenal cortex inter-

relationship may be concerned, the following groups are suggested:

1. Addison's disease and status lymphaticus.
2. Suprarenal involution of infants.
3. Toxemias of pregnancy.
4. Simple thyroid hypertrophies and hyperplasias.
5. Exophthalmic goiter.

(1.) *Addison's Disease*.—This has already been referred to. Thyroid hypertrophy and hyperplasia have often been observed in the early stages of this disease. Also hypertrophy of the lymphoid tissue in the thyroid, similar to that seen in exophthalmic goiter, is fairly characteristic. The few recorded studies on heat production have been in advanced cases, and either normal or slightly decreased values have been obtained. Occasionally Addison's disease, and frequently marked pigmentation occur in late stages of exophthalmic goiter.

Status lymphaticus is in some way closely related to Addison's disease. Wiesel⁴ and Hedinger¹⁷ believe the chromophil tissue insufficiency is a very important lesion in each, while others think the lesions of the parasex are equally or more important.

(2.) *Suprarenal Involution of Infants*.—The involution associated with a marked decrease in volume of the human suprarenal cortex occurring in the first two or three weeks after birth is a remarkable anatomical destruction of the so-called reticular and fascicular zones.^{11 12 13} The process appears to be initiated as a hemorrhagic infiltration and goes on to necrosis, dissolution and absorption of these layers with a folding and collapse of the glomerular zone on to the medulla. Probably many of the fatal cases with extensive hemorrhage into the suprarenals in infancy are abnormal and exaggerated instances of this apparently normal hemorrhagic destruction. The physiological or functional significance of this cortical destruction is unknown. In the light, however, of the relation of experimental injury of the cortex to increased heat production above described for rabbits and cats, it seems probable that this normal involution is dependent upon the altered conditions incident to extra-uterine life, one of which may be an increase in the plane of metabolism, and if so, it could be detected by measuring the heat production. No studies with this idea in mind have been recorded. We are at present carrying out such experiments.

(3.) *Toxemias of Pregnancy*.—There is a great deal of clinical literature relative to the possible importance of the cortex and corpus luteum, particularly the latter, in the etiology of certain toxemias of pregnancy. While this is not the place to discuss the relative merits of this literature it does seem to us a promising field

for systematic investigation. As is well known, removal of the corpora lutea early in pregnancy usually leads to abortion. It is not so well known, but equally true, that removal of the suprarenals in rabbits if performed in the latter half of pregnancy, also usually leads to abortion, often with the death of the mother. We have observed several instances where rabbits surviving double adrenalectomy in good health, later became pregnant and either aborted or died during the last week of pregnancy with symptoms resembling those of acute adrenal insufficiency but with anatomical changes in the liver and kidneys resembling those of toxemias of pregnancy.

(4.) *Simple Goiter*.—There is a striking increase in the incidence of thyroid enlargement (simple goiter) during puberty, pregnancy and menopause in man in districts of sporadic or mild endemic goiter. In districts of severe endemic goiter this relation is masked, and in animals below man no such relation has been detected. The immediate cause of thyroid hypertrophy is a deficiency in the iodine store of the thyroid. Anything, therefore, that causes a sufficient reduction in its iodine store will cause thyroid hypertrophy whether it be infection, decreased iodine intake or increased demands for iodine. In view of our demonstration that sufficient injury to the cortex causes an increased heat production, and that this is dependent upon the thyroid, it becomes highly important to inquire whether a relative insufficiency of the cortex and interstitial tissue at these periods of increased demands on them is not an important factor in bringing about increased thyroid activity and, as a result, thyroid enlargement in those cases where the iodine store is sufficiently reduced.

(5.) *Exophthalmic Goiter*.—There are more facts known concerning the pathogenesis of this disease than can be correlated with the thyroid hypothesis. Students of thyroid physiology and pathology have long insisted that we must look beyond the thyroid for the essential and primary lesions. A similar view was expressed by one of us¹⁴ in 1911 as follows: "The essential physiological disturbance in the thyroid in exophthalmic goiter is a relative insufficiency, its reaction compensatory and its significance symptomatic."

The facts that sufficient injury to the cortical function in rabbits and cats with intact thyroids leads to a chronic increase in heat production, and that removal of the thyroid prevents it, seem to us of the greatest importance as regards the etiology of exophthalmic goiter. We believe this is the nearest approach to the experimental production of this disease in animals yet obtained. Indeed, the clinical manifestations of the very acute cases of exophthalmic goiter are almost identical with the clinical manifestations produced in rabbits by sufficient suppression of the cortical function. A new conception of exoph-

thalmic goiter is now possible which, though differing widely from the still popular theory, offers a rational explanation for many of its most important manifestations. This conception would explain the continued lymphoid and thyroid stimulation as in part dependent upon a weakness or exhaustion of the cortical function. Cortical and interstitial gland insufficiency will not fully explain exophthalmic goiter. This is, however, one of the essential lesions from which many of the disturbed interrelations directly or indirectly arise. If the cortex can accelerate and inhibit thyroid activity, one must suppose that it is interrelated with many other gland activities in a similar manner and there is abundant evidence that this is the case.

The recent work of Black, Hupper and Rogers,¹⁵ if confirmed, would further support this view. They reported that feeding suprarenal residue (nature not stated) increased the iodine store in the thyroid.

During the last three years in collaboration with Dr. Shapiro, we have been feeding fresh and dried ox suprarenal cortex to selected typical cases of exophthalmic goiter at the Montefiore Hospital.¹⁶ Very encouraging results as regards gain in body weight and muscle strength have been obtained in a small group fed with fresh cortex while little or no improvement has been noted from the administration of the dried commercial preparations or of those prepared by ourselves. This therapeutic measure deserves more extensive trial and study and if found beneficial, attempts will be made to isolate or at least concentrate the active substance.

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SOLID ŒDEMA OF THE FACE AND EYELIDS.*

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IT is evident that the ophthalmologist must be in a position to recognize, diagnose and treat diseases of the skin and allied conditions of the sub-cellular tissues of the face.

Three of the cases here reported were under treatment at various clinics for over a period of years, without getting any relief from their trouble, and it was the occurrence symptoms that led them to come to the Manhattan Eye, Ear, Nose and Throat Hospital.

Solid œdema is a peculiar condition especially affecting the cheeks, upper lip and the eyelids, and was first reported by J. Hutchinson in 1883 (*Medical Times and Gazette*, 1883, Vol. 1, page 4). He wrote a paper on "Erysipelas of the Face and Allied Conditions," and in this paper called attention to certain peculiar affections of the skin and cellular tissues and lymphatics of the face. He stated at that time there were cases presenting œdematous swelling of the face, which were not erysipelatous in origin, but which were often erroneously so diagnosed and classified. He believed that these cases were the result, most frequently, of an infection in the nose, *i. e.*, sinuses, and in other instances the teeth and mouth.

In June, 1918, I presented the report of two cases of solid œdema of the face, presenting all of the usual signs and symptoms of this disease.

A third case was included in the paper which, perhaps, was not a true case of solid œdema of the face, but had symptoms so much like solid œdema that it was included in the report.

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This condition may appear at almost any age, but is most frequently seen between the ages of ten and sixteen. There are repeated attacks with or without fever. The cases where there is fever accompanying the attack may be erysipeloid in type, whereas, those cases in which there is no fever are probably due to an infection in the nasal chamber or sinus. It may be that this condition, which we now call solid œdema, is the result of several sources of infection and is only the end-result of such an infection rather than a distinct disease.

Two of my cases gave a distinct history of erysipelas, at least, the different attacks were diagnosed as erysipelas. This condition, which we call solid œdema, has been diagnosed and reported as elephantiasis. It is possible that elephantiasis of the skin may occur after repeated attacks of erysipelas.

The case No. 1 is still under treatment and may prove to be a case of elephantiasis and not solid œdema, but the history, symptoms and reaction to treatment were the same as cases Nos. 2 and 3, reported as cured with no recurrence after four years.

It is not necessary to discuss at this time the signs and symptoms of erysipelas: it is enough to say that redness of the skin with a definite margin to the redness, which margin advances from hour to hour and is attended by soft œdema and a tendency to vesicate, would justify a diagnosis of erysipelas.

Hutchinson speaks of the other types of inflammation affecting the skin of the face. First: Erysipelatoid attacks of the face occur very frequently in which the features may be permanently altered. Second: Inflammatory attacks of the face occur which do not lead to permanent changes, but which were characterized by abruptly margined areas of congestion, which vesicate but do not spread at their edges. To the latter he gives the name of vesicating erythema believing, however, that these latter two types should be considered as being allied erysipelas.

Solid œdema is very easy to confuse with a persistent angio-neurotic œdema or myxœdema. Case No. 1 was under treatment for acromegaly or pituitarism when she came to the Manhattan. It might also be confused with leprosy, pernicious œdema and Krieg œdema. The latter condition was reported among the Russian soldiers in the last war, affecting the legs, thighs, genitalia and the eyelids. Solid œdema is not an œdema with extravasation of fluid into the tissues, but rather a hypertrophy or solid thickening of the connective tissues. The skin is usually pale and there is no pitting on pressure.

If we can see these cases before the hyperplastic tissue becomes completely organized, the enlargement will disappear under treatment, but

in the cases where the œdema has extended over a long period of years, the change in the deep cellular tissues may be permanent and not respond to treatment.

There is usually a history of recurrent attacks of erysipelas of short, long or irregular intervals, with swelling of the cheeks, lips and eyelids that may or may not entirely disappear after the acute symptoms have subsided. In some cases these attacks are accompanied with or without fever, with only moderate local discomfort such as photophobia, lacrimation and eczematous eruptions about the eyelids. There may be at times well marked conjunctivitis and low grade marginal keratitis. The nose is usually very swollen and tender to touch and is filled with scales. There is also an eczematous eruption at the opening, with deep fissures and cracks at the corners of the nose.

The first attacks are usually the most severe, the later recurrences milder, but the symptoms usually do not entirely disappear between attacks.

The etiology is not definitely settled, but the evidence would point to some pyogenic infection in the nose, or sinus.

These cases of solid œdema nearly always have a focus of infection on a mucous surface.

Adams (*Brith. Med. Jour.*, October, 1909, page 933) thinks that the condition is local; the primary lesion is always one of mucous membranes; the œdema may affect the mucous membrane as well as the skin; that the condition is curable and that the offending microbe is always the streptococcus is not proved but is most likely.

Pusey (*Arch. F. Dermat. und Syph.*, 111-1912) reports three cases and in every case there was some infection of the nose. Streptococci and staphylococci were found in two of his cases, and staphylococcus aureus and albus in the third.

In the majority of the cases reported, streptococci have been found, but my own cases have shown staphylococcus albus more frequently, and in one of the cases we found a mixed infection.

Solid œdema is probably due to a direct absorption of the toxins elaborated by the streptococci or the staphylococci in and on the nasal mucosa, and is later absorbed by the lymphatics, and this in turn leads to an œdema of the cellular and sub-cellular connective tissues of the lids, cheeks and lips.

Case History.—I.—Miss Mary G., Italian, æt 20, family and personal history negative. Present trouble began about twelve years ago. She awoke in the morning with her face swollen and red. This attack was more or less confined to the eyelids of the right eye, cheeks and upper lip. Was treated at Mt. Sinai Hospital for a year with no improvement. She left school about four years later because of the deformity and



CASE 1—Solid oedema of the face.



CASE 1—Solid oedema of the face, three months later.

the recurrent attacks. The swelling has never at any time completely disappeared. The diagnosis, as well as she can remember, was "chronic erysipelas." She has been treated during the past year as a case of acromegaly, with no change in the swelling of the face. When first seen at the Manhattan Eye and Ear Hospital about six months ago, there was a great degree of solid swelling of the cheeks, upper lip and lower eyelid of the right eye, with an eczematous eruption about the canthus, photophobia and lacrimation. There was redness and congestion of tarsal and bulbar conjunctiva, with small granular deposits at the corneo-scleral margin. A culture from the nose revealed a pure growth of staphylococcus pyogenes albus. A vaccine was made and given and the swelling of the eyelids and active inflammatory symptoms involving the eye cleared up in about ten days. The swelling of the cheeks is slowly subsiding.

Case History.—II.—Miss V. G., aet 20. Spanish, family history negative. Had an attack of measles at five years of age, and following the measles had some form of keratitis which was treated over a period of years. Five years ago she had an attack of what was diagnosed as facial erysipelas, and since then has had recurrent attacks. She has had trouble with her nose, extending over a long period of years, even before the first attack of erysipelas. The nose often swells and fills with crusts and secretion, being painful and tender to touch at such times. The swelling of the cheeks and eyelids which followed the first



CASE 2—Solid oedema of the face.

attack of erysipelas and which has gradually increased, has at no time entirely disappeared. This disease was first treated in Spain, and the patient, on coming to America, visited a number of clinics without getting any help for the condition. She came to the Manhattan Eye and Ear Hospital, March 31st, 1922, going to the Nose and Throat Department, but on account of the swelling of the lids, she was referred to the Eye Department.

Eye examination: The pupils were 3 mm. and reacted to light, accommodation and convergence and the tension was normal. The corneas are more or less densely opaque, due to the keratitis at five years of age. This may have been the result of the measles or a tubercular keratitis. Vision O. D. counts fingers at 6 feet; O. S. counts fingers at 8 feet.

Patient presents this peculiar swelling of the cheeks and upper and lower lids to a most pronounced degree. There has never been any swelling of her upper lip, which was present in the other three cases I have seen. The skin has a normal color and the texture is unchanged. The swelling gives a sensation of hardness, but no pitting is seen. There is much more swelling of both the upper and lower lids, which looks somewhat like the condition that has been described as Blepharochalasis, but Blepharochalasis, however, only affects the upper lids. There is a dense scar formation in front of the right ear, that suggests keloid. Behind the left ear, over the mastoid, there are several of the keloid-like scars, together with a swelling, bluish-red in color and which appears to be filled with pus. Patient says she has had a number of these swellings, which burst and discharge their contents and are followed by the scar tissue formation. The Wasserman test and urine analysis were negative. There was a very slight reaction to the Von Pirquet. The culture which was taken from the nose revealed the presence of a very free growth of the staphylococcus albus together with the short chain of non-hæmolytic streptococcus. A vaccine was made and the injections were started.

Case History.—III.—Miss R. S., aet 12, Russian Jewess, at five years of age eyelids and upper lip became swollen, with some conjunctival irritation photophobia and lacrimation. Recurrence at ten years of age diagnosed as "boil" in the nose, and later by the school doctor as erysipelas. Was treated at various hospitals with no relief. The swelling of the eyelids, nose and upper lip was more or less constant over a period of five years. The urine analysis, Wasserman and Von Pirquet tests were all negative. A smear from the nose revealed a pure growth of staphylococcus pyogenes aureus, and a vaccine was made and injections were given every four days over a period of two months, with disap-

pearance of all swelling and ocular symptoms. There has never been any recurrence of this condition.

Case History.—IV.—Miss J. C., aet 9, Italian, had been under treatment for phlyctenular keratitis two years previously and was cured of the attack by the use of tuberculin injections. Returned to the clinic with another attack of keratitis, and associated with this condition there was great swelling of the eyelids, cheeks and upper lip, with tenderness of the nose to touch. This swelling preceded the present attack of keratitis and was treated by the family physician without any improvement.

A culture from the nose revealed staphylococcus aureus and a diplobacillus, from which a vaccine was made and injections were given every four days over a period of three months. All of the swelling has disappeared and there has been no recurrence.

Note.—The reports of cases Nos. 3 and 4 are abstracted from "Solid Edema of the Face," Weidler, *Trans. Amer. Ophth. Soc.*, Vol. xvi, 1918.

CHANGES IN VIRULENCE OF TUBERCLE BACILLI.*

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IN the course of the past four years some experiments on reinfection in tuberculosis which we have carried on at the Saranac Laboratory (1) re-awakened my interest in the question of the virulence of our cultures. Our oldest culture of human origin, which we have propagated since 1891 (thirty-one years) was isolated by Dr. Trudeau (2) from the lung of a patient who died from military tuberculosis. He inoculated a rabbit's eye with a sheep serum culture and from this rabbit's lung recovered the culture on sheep serum. Since that time it has been grown continuously on glycerol-serum, agar, broth or potato, and known as "R1" human culture has been distributed widely to laboratories in this country. During the first two years Dr. Trudeau noted a loss of virulence, and among my first notes in July, 1894, it is mentioned as being too weak after the second passage in rabbits to be used in these animals for inoculation purposes.

At that time experiments with avian tubercle bacilli were in progress with the hope of developing a method of protective inoculation.

Simultaneously we were engaged in attempts to increase the virulence of human bacilli for rabbits since the inoculations were uncertain in effect and the bovine type was not differentiated until Theobald Smith (3) brought out the contrast. Another strain of human tubercle bacilli was passed twenty-two times through rabbits

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without increase of virulence after the second passage.

The low virulence of R1 culture for guinea pigs was not suspected at first, partly, no doubt, because the inoculated doses were usually large. However, Dr. Trudeau quickly saw the possibility of using the culture on rabbits for its protective influence, and later for guinea pigs.

In 1897 we found it very weak in subcutaneous inoculation of small doses from bouillon cultures.

In 1898 larger doses from agar and bouillon cultures caused death in from one to two years.

In 1899, however, glucose potato slant growths in small doses killed in from six months to one year.

In 1900 broth cultures in small doses were rather weaker. Eight out of twelve animals survived from 292 to 629 days.

During the past twenty years occasional observations have been made to indicate a decreasing virulence of R1 for guinea pigs, until for the past ten years we have found that few animals developed generalized tuberculosis from even large subcutaneous inoculations.

Some of our animals which were recently given inhalations of strong suspensions developed well-marked pulmonary and occasional spleen disease, but the inoculations of the first decade always led to spleen, liver and lung lesions of very slow development.

On the other hand, we have continued one other human culture seventeen years under very similar conditions of growth as to media, temperature and inoculation tests without noting thus far such depression of pathogenic power. I refer to H37² also widely distributed to other laboratories. This strain was isolated directly from sputum on agar and cultivated on all kinds of media since 1905.

We also have a bovine strain twenty years old which maintains a high virulence for rabbits today.

I do not present these observations as especially noteworthy, because it has long been known that old laboratory cultures of tubercle bacilli have lost pathogenicity to varying degrees, some more than others. The subject has, however, taken on new interest for me since the guinea-pig experiments alluded to in our own laboratory whereby we were able to produce a definite infection with R1 cultures by inhalation, and apparently complete arrest of the disease in guinea pigs with disappearance of the tubercle from the lungs, to a large extent, after one and one-half to two years. The cultures of attenuated bovine bacilli grown by Calmette on bile potato media are also said to leave behind no permanent foci after inoculation.

In the other direction, the enhancement of virulence, the experiments recently reported by Kolle, Schlossberger and Pfannenstiel⁶ are surprising

in the reported transformation by three passages through guinea pigs and white mice of such acid-fast bacilli as the timothy, the butter and reptilian organisms. It is stated that these become pathogenic and produce lesions indistinguishable from those produced by true human tubercle bacilli. The doses were large to produce these effects (30-40 mg.) yet hitherto these organisms have been regarded as capable only of local irritation and transient, non-progressive tubercle formation. The implication is apparently intended that these organisms can be restored to a type resembling the human, because cultures after passage have acquired the characteristic slower growth at incubator temperature and other points of resemblance.

After the extensive work done by the German and British commissions some years ago that led to contrary results, the above-mentioned passage experiments should require careful control and confirmation. The work of Theobald Smith⁷ and A. Stanley Griffith⁸ in Cambridge, England, pretty firmly established the idea of stability of types of tubercle bacilli although admitting of variations in virulence in the several types, human, bovine and avian. Mohler and Washburn⁹ in 1906 also reported their experiments in modifying virulence and morphology and gave evidence of transformation both by cultures on a variety of media and by passage through animals.

Nevertheless, methods of determining differences in virulence have been unsatisfactory. Likewise correlation of virulence with types of clinical disease has yet to be worked out. There have been many attempts and in 1898 Koch assigned to Vagedes¹⁰ the task of testing about thirty cultures.

In five cases the course of the disease corresponded on the whole to the virulence in the rabbit. Other efforts were made, by Fraenkel and Baumann¹¹ to show a relationship between human tuberculosis of rapid and slow progress and disease in the lower animals; these have not brought concordant results but revealed variations in virulence. It should be remembered that pathogenicity for rabbits and guinea-pigs may not be a measure applicable to man.

The question seems worthy of further study in order to establish standards, though the difficulties are great.

Some of the factors to be considered on the part of the bacillus are (a) date of isolation of the culture from the patient; (b) age of the culture used for inoculation; (c) nature and reaction of culture medium; (d) part of growth selected for inoculation; (e) number of agglutinated or dead organisms included; (f) fluid used for suspensions; (g) dosage. On the part of the animal one should consider (a) race, age and weight; (b) sex; (c) site and method of inoculation; (d) amount of trauma; (e) feeding

and isolation of animals; (f) intercurrent diseases; (g) natural susceptibility to tuberculosis of the three main types.

It would be an advanced step to have an agreed standard for virulence tests whereby results could be compared.

If marked departures from normal pathogenicity are discovered the causes may be traced back to their probable sources. I venture to submit a method for discussion and criticism.

1. Take a spadeful of bacilli from the thin edge of a freshly grown culture grown at least two weeks on plain egg tubes (Dorset' medium or Petroff's egg medium).

2. Rub in a glass mortar with ground glass pestle with three to five drops of sterile plain broth or bile; dilute to 10 cc. with the same broth.

3. Centrifuge in a straight-sided tube (International size I-B) at lowest speed for two minutes. The speed averages 850 R. P. M.

4. Pipette off the top half and stain a 2 mm. loopful, first fixed with albumin on a slide.

5. If clumps of four to ten bacilli or more are seen, centrifuge two minutes further.

6. The suspension should contain clumps of not more than two bacilli and singles averaging three bacilli to a field; if more numerous, dilute proportionately.

7. The suspension, separately measured in doses of 0.1 cc., should be freshly mixed for each inoculation and injected subcutaneously in the right groin of ten male guinea-pigs averaging 350 gms. weight.

8. Animals should be killed at the end of fifty days and lesions compared and recorded as follows by macroscopic appearance:

1st degree: Disease of regional nodes only.

2nd degree: Disease of regional nodes and spleen or liver.

3rd degree: Disease of regional nodes, spleen and liver.

4th degree: Disease of regional nodes, spleen, liver and lungs; or caseation of spleen or liver without lung involvement.

The object will be to introduce a minimal dose capable of infecting without the foreign-body effects either from large doses or from dead bacilli or clumps. In this way only would guinea-pigs reveal differences, because large doses may mask them. The importance of a time limit is also due to the unequal spread of the disease during the early weeks, but a gradual approach to similarity after six to twelve weeks.

By such standardized procedures many other experiments are possible that require better con-

trol than is usually given to tuberculosis inoculations. It is also possible that the influences which govern changes in virulence may be traced out. Many years ago it was suggested that glycerol and highly acid-reacting culture media favored attenuation, and yet this has not been established beyond question.

The importance of some better means of prognosis based on the presence or absence of virulent strains of bacilli may be mentioned.

It is at present quite as easy to attribute all differences in the clinical course of tuberculosis to various factors included under the name "resistance," leaving out of consideration the virulence of the bacillus.

To summarize these remarks, I have referred to:

I. A culture known as R1 of human tubercle bacilli which is thirty years old and retains but slight pathogenicity.

II. A culture, H37, isolated seventeen years ago and still quite pathogenic.

III. A culture of bovine tubercle bacilli, B1, twenty years old, and still very virulent for rabbits.

IV. Experiments recently published on the pathogenicity of acidfast timothy grass, butter and reptilian bacilli for mammals need confirmation.

V. The need of methods for the determination of the virulence of tubercle bacilli and a suggested standard procedure.

VI. The possible correlation of clinical forms of tuberculosis with variations in strains of bacilli.

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"ANAPHYLAXIS FROM WASP STING."

NATHANIEL P. BROOKS, M.D.

CROTON-ON-HUDSON, N. Y.

Case.—Mr. V. O., age 19 years, born in Croton of Italian parents.

Family and personal history good.

When a lad of 11, V. O. was stung by a bumble bee. As a result his face, head, neck and body were tremendously swollen. According to the mother "Victor all swelled up like a barrel." The physician who treated him at that time thought he had been struck by a snake. Three years ago he was stung nine times by yellow jackets at about 11 A. M. He became very sick and dizzy. He put mud on the stings and went to a drug store near. The druggist gave him something, probably aromatic ammonia, though neither remembers exactly. A general urticaria appeared very shortly after he was stung, disappearing about an hour later. V. O. laid off work until after his dinner, returning to his job in the afternoon.

In personal appearance V. O. is a well muscled, robust, normal individual.

On October 6, 1922, shortly after beginning work (7:05) he was stung by a yellow jacket wasp behind the left ear. He put a cold stone on the site of the sting at once, but he began to feel so weak and sick that he called his brother, who brought him to my office. V. O. was so weak that his brother had to help him from the car and into the office. Though it was only twenty minutes since the sting V. O.'s face, body, hands and legs, were covered with urticarial weals. The lips were blue, the pulse 100, very low tension and somewhat irregular. A stimulant was given at once. Color returned to the face and lips in about five minutes. The pulse slowed to 80 at the end of fifteen minutes and the urticaria had begun to fade. V. O. asked me if I thought it safe for him to return to his job and I told him I believed so.

A half-hour later V. O. was again in the office, this time requiring the aid of two men to get him from the car to the office. V. O. said everything went black suddenly. His brother reported that V. O. dropped in a faint without a word. Symptoms practically as before, after a dram and a half of aromatic ammonia the pulse began to settle down to normal; at the end of twenty minutes V. O. was practically as well as ever with very little sign of the urticaria left. At the site of the sting there was very little swelling, the alkaline dressing having reduced the raised swelling nearly to normal. Though he felt able to return to work he was taken home and lay down. A half-hour later his mother reported his having a vomiting attack but that he did not feel dizzy and faint as he had earlier. At 6 P. M. the only sign remaining was a $\frac{1}{4}$ inch circle of red 2 inches in diameter about the tiny mark of the sting puncture.

V. O. said a honey bee sting only swelled up like a mosquito bite on him and that he had been stung by such a number of times without a rash forming or feeling sick.

Deaths

BARRIE, GEORGE, New York City; Georgetown, 1892; Fellow American Medical Association; American College of Surgeons; American Orthopedic Society; Member State Society; Academy of Medicine; Consulting Surgeon, Ruptured and Crippled and Gouverneur Hospitals; Visiting Surgeon, Blythesdale Home for Crippled Children. Died October 15, 1922.

BASSETT, MARY IMOGENE, Cooperstown; Woman's Medical College, Pa., 1887; Fellow American Medical Association; Member State Society; Physician Thanksgiving Hospital. Died October 21, 1922.

CHAFFEE, GEORGE, Binghamton; University of Michigan, 1881; Member State Society. Died October 26, 1922.

CRAMER, LANSING, J., Castorland; New York University, 1887; Member State Society. Died October 6, 1922.

HUNTLEY, JAMES FLORUS, Oneida; New York University, 1877; Fellow American Medical Association; Member State Society. Died September 19, 1922.

MEZGER, LOUIS K., Rochester; Ann Arbor, 1890; Rush, 1891; Fellow American Medical Association; Member State Society. Died October 11, 1922.

MINER, WARREN AUGUSTUS, Ossining; New York University, 1882; Fellow American Medical Association; Member State Society; New York Society of Anæsthetists; Physician Ossining Hospital. Died October 20, 1922.

ST. JOHN, THEODORE L., Center Brunswick; Albany Medical College, 1878; Member State Society. Died October 4, 1922.

THACHER, JOHN SEYMOUR, New York City; College of Physicians and Surgeons of New York, 1880; Fellow American Medical Association; American Physicians; Member State Society; Academy of Medicine; New York Pathological Society; Consulting Physician Roosevelt and Vassar Brothers' Hospitals. Died October 28, 1922.

TWOHEY, JOHN JOSEPH, Buffalo; Niagara, 1888; Fellow American Medical Association; American Medico-Psychological Society; Member State Society; Buffalo Academy of Medicine. Died October 29, 1922.

WHITNEY, GEORGE CROSIER, Rochester; College of Physicians and Surgeons of New York, 1908; Fellow American Medical Association; Member State Society; Academy of Medicine; Pathological Society; Alumni Roosevelt and Sloan. Died October 7, 1922.

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INDIFFERENCE.

A foreign critic asserts that the besetting sin of Americans is indifference. A procession of facts seems to justify the accusation if we study only the physicians of the State of New York.

The election is over and the post mortem discloses that we failed to make an adequate effort to exclude from legislative positions some of the candidates whose records showed real antagonism to our ideals. Some of us did not register, some of us did not vote, most of us failed to support the Committee on Legislation in any way, some of us failed to answer the chairman's letters, or even show him the color of our sympathy with his earnest endeavors. Most of us are now lying back in our easy chairs warmed by the comforting remembrance of the successful work of the Committee last year, and are cherishing the feeling that somehow the Committee will pull us through once more. We are complacent over the fact that we get such intelligent service for twenty-five cents per month and feel vastly superior to the lowest labor union member who pays forty cents a week, or twenty dollars and eighty cents a year, or to the labor union member who pays the highest dues of one dollar and a half per week, or seventy-eight dollars per year.

This odious picture does not hurt because its lesson does not penetrate our callous indifference to what united interest, enthusiasm, hearty co-operation and warm blooded fighting could do for the glory of our great profession.

N. B. V. E.

THE WORKMEN'S COMPENSATION LAW.

In September of 1921, the Industrial Commissioner appointed a committee on Medical Questions to investigate the medical service under the Workmen's Compensation Law, and to recommend methods for its improvement. This committee (see THE NEW YORK STATE JOURNAL OF MEDICINE, December, 1921, page 474) is composed of thirteen (13) members, one (1) representing the employees—for whose benefit the law was especially enacted; two (2) representing the general medical profession; and nine (9) representing the employers and insurance carriers. The committee held a number of hearings in New York City, Albany, Syracuse, Rochester, and Buffalo, at which representatives of the various parties in interest appeared and gave their impressions and opinions. On October 10, the committee submitted a report, such as might be expected from a committee having such a proportionate membership. Dr. James F. Rooney and Dr. Eden V. Delphey were not satisfied with the report and submitted a minority report which dealt especially with the subjects of free choice by the injured employees of physi-

cians to attend them under the law; illegal designation of physicians by insurance carriers; 'lifting cases'; 'specialized,' 'plant,' and 'commercialized' medical services and a number of other matters of great importance. We arranged to publish the report of the committee and the minority report in this issue, but both reports have been sent back to the committee on medical questions with the expectation that the members of the committee may come to some agreement on these important questions. We, therefore, hope to publish the unanimous report of the committee in our December issue and are giving this advance notice so that our readers will not fail to carefully study a question of vital interest not only to the physicians of New York State but of the entire nation.

N. B. V. E.

LEGISLATION.

Now that election is over and the lawmakers of the State have been selected, it is the duty of the profession to aggressively strike out to secure their aims and desires in medical legislation. It is the duty of the profession to lay aside the indifference and lack of convictions and come to an understanding of the needs of our situation. We must unitedly strive for a better foundation; we must demonstrate the full measure of value for the Public Group, contained in the high standards we have set for medical education and licensure.

Educational propaganda should be started as early as possible with these lawmakers, that they may become familiar with all phases of medical legislation with which they will be confronted during the coming session. The work of conversion must begin now and continue all through the legislative session. This work *must* be taken up prior to the period of the legislative upheaval, for we cannot expect to make a deep impression on these lawmakers or educate them as to the desires of the medical profession, during the turmoil of the session, when they are harassed by the different interests clamoring for legislation. The lawmaker's mind must be prepared in advance and the subject of medical legislation presented to him during the calm period preceding the session.

County Legislative Chairmen are urged to see their legislative representatives at once, and by direct personal contact establish friendly relations with them, and present to them all matters pertaining to medical and public health legislation, and thus obtain their views in regard to same.

Each individual member of our Society in the State is expected to "do his bit" by using his influence with lay members of his community, that they in turn may become enthused and work with the lawmakers to make them

realize and understand that the physicians are using their undivided efforts to promote the welfare of the Public Group. So vital a subject as the Public Health and its interests must indeed receive the greatest consideration from our lawmakers.

J. N. V. V.

LEGISLATIVE BUREAU.

The Legislative Bureau would earnestly request the prompt co-operation from the County Legislative Chairmen which is so absolutely necessary if we are to accomplish the desired effect in medical legislation this winter.

On October 14, 1922, a form letter was sent out from the Bureau to the County Legislative Chairmen, each letter containing a card for each candidate for the State Legislature from each County; in all, 60 letters and 402 cards. A stamped envelope for reply was also included.

At the date of this writing we have had but four acknowledgements, namely from Oneida County, Tompkins County, Madison County and Suffolk County, and but one of these, Tompkins County, returned the cards with the desired information.

The Committee on Legislation desires to emphasize the fact that this is completely at variance with the principles and ideals for which the Legislative Bureau was established. It is imperative that we have all the information which can possibly be gathered in regard to the State Legislature.

However, we trust that, though we have so few replies to date, the County Legislative Chairmen are working on the cards and will be good enough to return them to the Legislative Bureau at as early a date as possible.

J. N. V. V.

PREVENTIVE MEDICINE DEFENDANT.

An editorial in the last number of the *A. M. A. Journal*, states that scientific medicine will be tried at the bar of public opinion, in California, Colorado and Washington at the polls on November 7.

In Colorado and California the people will decide by popular vote whether medical research involving the use of living animals shall be prevented. This is fostered by the antivivisectionists of these States, who by playing on the emotions of the people, think they can bring about the enactment of such measures through the initiative.

In Washington, there is a contest being fought under the referendum, to restrict the activities of the health authorities with respect to the sanitary and hygienic control of the public schools. The foes of scientific medicine, among them, those who even deny the existence of disease, procured the passage of an act in 1921, granting to parents, the privilege

of forbidding examination of their children in school by the health authorities. The public health authorities of the state, recognizing the danger to public health in this measure, have procured its submission to the people and it will be voted on November 7.

In California, the osteopaths are fighting through the initiative to free themselves from control of the State Board of Examiners. Chiropractors have been defying the law, and, when convicted, and sentenced, have gone to jail rather than pay fines, thus posing as martyrs. Apparently neither of these cults will be satisfied by any measure that does not allow them freedom to pursue their own courses at their own sweet wills, irrespective of other sciences. Members of these cults *throughout the United States*, are being urged to write or telegraph any friends or acquaintances they may have residing in the above named States asking that they vote in a way favoring the cult.

The medical profession should rise to the situation and do all within its power to see that no ground is lost to the enemies of the recognized sciences, and *particularly, of preventive medicine.*

This is the same procedure as is seen in the legislatures of states where the referendum and the recall are not in force. While it may seem easier to influence one mind in a legislature, yet when we happen upon a legislator who is biased, through reasons unknown, and who refuses to listen to sane arguments, then the matter really becomes one of referendum to his constituents, and the majority of the constituents in a district are the ones who decide.

J. N. V. V.

SUB-STANDARD POLITICS.

It was recently brought to the attention of the Legislative Bureau, that some chiropractors had inserted in the *Denver Post*, during the summer, an advertisement containing a copy of a letter which they claimed had been sent to "President Harding, his cabinet members, all United States Senators and Representatives, all Governors, and others high in the political world."

This letter contained an appeal "that the World War Veterans throughout the United States, who are still suffering from injuries received or diseases contracted, while in service, be allowed the privilege of choosing chiropractors to treat them at Government expense." It also asked "if it be not possible for the Government to designate in each city *doctors of worthy science,*' other than medicine, to represent the Government and render aid to all those Veterans who desire and need such services, without expense to them."

They also reproduced in their advertisement

copies of a few letters of acknowledgment from Representatives, one of which was from Representative James M. Mead, of the 42nd Congressional District of New York State. Representative Mead in his reply to these chiropractors, assured them, "that he was entirely in accord with their views and should such a measure be introduced in Congress, he would be glad to indorse same."

Upon investigation, the Legislative Bureau was advised by good authority, that the United States Veterans' Bureau has been for some time past and is now, training veterans, at public expense, as chiropractors.

However, in reply to correspondence between the Legislative Bureau and officials of the United States Veterans' Bureau and others high in the political world at Washington, we have received assurances that every effort is being made to protect ex-service men from the evils of quackery, and that the United States Veterans' Bureau confines itself in rendering treatment to the employment of graduates of recognized schools of medicine.

We believe that at least one other cult is endeavoring to induce the Rehabilitation Division of the Veterans' Bureau to train adherents for it.

This will but serve to enlighten us as to the aims and desires of these cults to further exploit their quackery

J. N. V. V.

COMMITTEE ON PRIZE ESSAYS.

The Committee on Prize Essays takes pleasure in once more drawing the attention of the members of the Medical Society of the State of New York to the Merrit H. Cash Prize and the Lucien Howe Prize, which will be open for competition at the next annual meeting of the State Society, which will be held in New York City on May 21, 1923.

The Lucien Howe Prize will be awarded for the best original contribution to the knowledge of surgery, preferably ophthalmology, and is not limited to the members of the State Society, any physician being at liberty to compete for it.

The Merrit H. Cash Prize will be awarded for the best original essay on medical or surgical subjects and is only open to members of the Medical Society of the State of New York.

The essay shall be typewritten or printed, and the only means of identification of the author shall be a motto or other device. It shall be accompanied by a sealed envelope, having on the outside the same motto or device, and containing the name and address of the writer. Essays must be sent to the chairman of the Committee, Dr. Edward D. Fisher, 46 East 52nd Street, New York, not later than the first of April, 1923.

EDWARD D. FISHER, M.D., New York.

LUCIEN HOWE, M.D., Buffalo.

CHARLES G. STOCKTON, M.D., Buffalo.

NOTES FROM THE STATE DEPT. OF HEALTH.

PERIODIC HEALTH EXAMINATIONS.

The State Commissioner of Health, Dr. Hermann M. Biggs, has recently made public the following letter with the object of correcting misapprehension in regard to his views on the subject of periodic physical examinations:

"At the annual conference of Health Officers and Public Health Nurses of New York State, held at Saratoga Springs last June, I referred to the importance of periodic physical examinations, which I have long advocated as a means for the preservation of health and the prevention of diseases through early recognition and correction of defects and abnormal conditions. Comments which have since appeared in a number of newspapers indicate that serious misconception exists in some minds as to the purport of my remarks. The impression seems to have arisen that I favor an official scheme of compulsory physical examinations, to be conducted by health officers or other physicians employed by the public authorities, with the implication that every man, woman and child should be required to submit to such a periodical inquest into his or her physical condition.

"It does not seem really necessary to explain that I agree heartily with the critics of any such proposal, and that I never have and do not advocate any kind of compulsory state medical inspection of the individual citizen, except as such inspection is now carried on practically everywhere in our public schools and in charitable and penal institutions. A prying inquest by public authority into the physical condition of the adult citizen would be utterly repugnant to American ideas of individual rights, and of the proper sphere of government. The worst enemy of periodic medical examinations could choose no better means of making his opposition effective than to advocate such a fantastic plan as seems to have been read into my address at Saratoga.

"So much having been made clear, I ask space to repeat my conviction that nothing is more important for the citizen who cares to keep well than that he should go of his own free will to his own physician and demand thorough examination at reasonable intervals, with the application of all the resources of modern scientific medical knowledge. This means not merely a hasty examination of the heart and lungs with the stethoscope, but a complete medical survey, including various special tests of the blood and excretions, examination of the eyesight and hearing, as well as of the nose and throat, and often accompanied by an X-ray of the chest or other parts of the body. Adequate examination also means taking into account mental as well as physical factors, and basing conclusions on a full knowledge of living and working conditions, income, habits, recreations, and the pertinent facts of family and personal history.

"It must be obvious that such examination and advice based on it can be properly made and given only under the conditions of freedom and intimacy which are implied in the relation of the individual to his family physician. For the State to attempt thus to examine its citizens would be not only intolerable but futile, since the utmost degree of confidence and co-operation on the part of the patient is required if anything is to be accomplished. The best trained modern physicians are equipped to examine and advise their clients how to keep well, and rightly expect to be consulted for this purpose and not merely to attempt the cure of an established disease. Perhaps it is not true that the Chinese pay their doctor only to keep them well, but if this popular legend is not based on fact it was at least well invented, for it expresses the essence of the coming

system and practice of civilized society. As was said recently in one of our radio health talks, 'The human body is the only machine for which there are no spare parts.' We must learn rightfully to use and carefully to safeguard those which we have. And we can best do this by picking out a competent medical adviser, consulting him frequently, believing what he says, and following his counsel. If we do this as free individuals the health of the State will largely take care of itself."

A DOCTOR WHO DOES NOT USE ANTITOXIN.

One of the most pathetic cases of inadequate medical service which has ever come to the attention of the Department is that of a family in an up-state village in which seven cases of diphtheria with four deaths recently occurred, the patients being treated by a physician who states that he does not use diphtheria antitoxin in the treatment of his cases of diphtheria. This family which is reported to be in rather poor circumstances, and to be living under insanitary housing conditions, consisted of the father, mother and seven children whose ages ranged from three to seventeen years. The first case was taken ill on September 12 with symptoms of cold and a croupy condition. A doctor was not called until September 18, at which time the case, as later described by the physician himself, was one of well developed clinical diphtheria. The father and mother stated that they were not in favor of having antitoxin given to the children. When the physician told the mother that the first child had diphtheria the mother said she supposed the children would be compelled to have antitoxin, whereupon the physician informed her that he did not use antitoxin in the treatment of his cases of diphtheria. This conversation was confirmed by the physician himself when directly questioned by the Sanitary Supervisor of the State Department of Health and again later in a letter to the Department. The oldest child in the family, age 17, received one dose of diphtheria antitoxin from the local health officer. This child, with the two remaining children, seemed at last accounts to be in a fair way to recovery. The other four children are dead.

A TYPHOID CARRIER.

The combined efforts of the local health officer and an epidemiologist of the Department have recently resulted in bringing under surveillance a rather remarkable typhoid carrier. The fourth case of typhoid fever among this woman's six sons-in-law occurred a few weeks ago and the specimens since examined have confirmed suspicions which the Department has felt in this case for six years without having previously been able to obtain complete evidence. The first case supposed to have been infected by this carrier was that of a boarder in her family who contracted typhoid in 1900. Since that time she has apparently infected four sons-in-law, two sisters and the father and mother of one of the sons-in-law, two grandsons, a visitor and indirectly a nurse employed in one of the cases. The cases of the sons-in-law all developed shortly before or after their marriage. Two other sons-in-law have so far escaped, but it appears that the record may yet swing to the full circle since they have both received recent visits from their amiable but dangerous mother-in-law. The old lady is accustomed to visit the families of her various daughters for weeks at a time, and usually helps out in the kitchen where she, of course, occupies a strategic position for the dissemination of typhoid germs. Curiously, her own children, seven daughters and three sons, have all escaped typhoid, the infection falling instead upon the sons-in-law and other relatives.

POLIOMYELITIS.

So far this year 335 cases of poliomyelitis have been reported which is the largest number in any one year since the epidemic of 1916, with the exception of 1921,

when 565 cases were reported. These figures are for the State of New York exclusive of New York City. Most of the 1922 cases have occurred in Rome, Syracuse, Auburn and Oswego, and in the adjoining counties. It is too early yet to determine the number of deaths and recoveries in this year's cases, but based on the usual statistics it would seem that about 200 of the 1922 cases will require aftercare treatment. Physicians in the localities where cases have occurred are requesting visits from the State Nurse and the Orthopedic Surgeon. On the whole, diagnosis is made more promptly and correct after-care treatment begun much earlier than in previous years. On October 1 the total number of patients under observation was 1,442, of which 1,005 were cases which had the onset of the disease between 1916 and 1921 inclusive, while the remaining 437 had onset previous to 1916.

DISTINGUISHED FRENCH PHYSICIAN VISITS STATE HEALTH DEPARTMENT.

Dr. Leon Bernard, of Paris, who is visiting this country to study public health administration under the auspices of the Rockefeller Foundation, recently spent two days at Albany looking into the work of the various divisions of the Department and visiting the State Laboratory. Dr. Bernard, who is Professor of Hygiene at the University of Paris, is also secretary of the recently formed National Association for the Prevention of Tuberculosis in France, and is connected in an advisory capacity with several French government offices as well as with the Health Committee of the League of Nations. Dr. Linsly R. Williams, formerly Deputy State Commissioner of Health, and afterward Director of the Rockefeller Commission for the Prevention of Tuberculosis in France, met Dr. Bernard in Albany and explained to him the work of the Department. Dr. Bernard will also study the work of the New York City Health Department and visit the Grasslands Hospital and other institutions in Westchester County before returning to France.

Correspondence

The Council at a meeting held in Albany, April 20, 1922, moved, seconded and carried

That the Journal be not used in any way suppress any expression of opinion; and that its correspondence columns be open for all proper communications; and that "proper" communications will be deemed those which are not slanderous or libelous in their nature.

October 24, 1922.

Editor, NEW YORK STATE JOURNAL OF MEDICINE:

I would like to get in communication with a general practitioner to start a country practice.

The place covers a population of about 4,000 people, in about four towns within a block of about five miles by three.

At present there are no physicians in the field, the nearest being four miles from the nearest villages.

Can you suggest anyone or suggest how to go about to get in touch with anyone who would be likely to be interested in the proposition. Most of the people in this district are employees of mills of various kinds and are at least three-quarters Americans who are used to allopaths.

I will esteem it a great favor if you can help me in any way to find someone for the place.

It is on the Albany Southern Railroad, which runs from Albany to Hudson, trolleys running each way about every hour.

Nothing to pay for the goodwill or anything else.

Yours truly,

F. L. STOTT.

957 Madison Avenue, New York City.

UNITED STATES VETERANS' BUREAU

The United States Veterans' Bureau offers a special course in Neuro-Psychiatry to a certain number of qualified physicians on condition that upon completion of such course they will continue in the service of the Bureau for a period of at least two years thereafter.

The policy of this Bureau is to provide expert medical attention for the disabled veterans so that everything possible may be done to restore them to health and proper status in civilian life. To maintain this policy in the opening up of new hospitals, and being unable to secure the required number of specialists in nervous and mental disease, it becomes necessary to instruct a special staff for this work. To this end a systematic and comprehensive course in Neuro-Psychiatry has been carefully outlined, consisting of lectures, demonstrations, clinical and laboratory work. Each course will cover about four months. There will probably not be more than two courses annually.

The main part of this course will be given at St. Elizabeth's Hospital for the Insane, at Washington, where classes of nervous and psychotic diseases can be studied. Other public hospitals will provide clinics in so-called functional diseases, borderline cases, and the milder types.

The teaching staff will consist of the members of the staff at St. Elizabeth's and lecturers from the Medical Departments of the Army, Navy, Public Health Service, United States Veterans' Bureau, and U. S. Department of Agriculture.

As the number of students that can be accommodated is limited, early application for each course is desirable.

NEWS ITEMS.

The New York Academy of Medicine has organized a celebration of the 100th anniversary of the birth of the late Louis Pasteur, to consist of a public exhibition, in the building of the Academy, commencing on December 27, 1922, the anniversary date, and culminating at the end of a fortnight in an evening of public addresses by distinguished members of the medical profession. The exhibition will consist of a collection of Pasteur memorabilia such as books, manuscripts, photographs, engravings, medals, etc., illustrating the life work of Pasteur.

The Public Health Education Committee of the Medical Society of the County of New York, in co-operation with the New York Academy of Medicine, announce the following public lectures on Health Education and Prevention of Disease: November 22, 4 p.m.—"Mental Hygiene Problems of Childhood and Adolescence," Frankwood E. Williams, M.D., Medical Director, National Committee for Mental Hygiene. December 6, 4 p.m.—"Health Education for Children," Frances Cohen, M.D., Assistant Director of Educational Hygiene, Department of Education. December 11, 8 p.m.—"Exercise in Normal and Abnormal Children," William St. Lawrence, M.D., Associate in Diseases of Children, College of Physicians and Surgeons. "Good Posture, a Health Asset for Children" (lantern slides), Harriet Wilde.

Dr. John B. Walker, New York City, colonel, M. R. C., has been awarded the Distinguished Service Medal, for meritorious and distinguished service as commanding officer of Base Hospital No. 116, A. E. F., in France.

The Homeopathic Hospital of Albany has instituted a curriculum for interne teaching which conforms fully with the standard of the American Medical Association Class A Hospital classification.

The Bender Laboratory, Albany, has resumed its Post-Graduate Class in Clinical Pathology. The course extends from October 5 to December 15. Dr. Ellis Kellert, medical director of the Laboratory, is conducting the course.

PRUNES.

Contributions Invited

"Say, what are you crying about?"

"My dog just died."

"That's nothing. My grandma died and I didn't cry."

"Well, you didn't raise your grandma from a pup, did you?"

By Their Deeds.

Farmer: "Have all the cows been milked?"

Dairymaid: "All but the American one."

Farmer: "Which do you call the American one?"

Dairymaid: "The one that's gone dry."—*The Passing Show (London)*.

Jimmy: Gee! I hate to take care of this baby. How do you get out of tending yours?

Bobby: Well, you know mom's awful sanitary, so wherever she wants me to mind the kid I get a fit of coughing.

Crawford: You shouldn't say you're beginning to feel your age.

Crabshaw: I can't help feeling it. Just as my eyesight started to fail the girls began wearing short skirts, and now that my hearing is getting bad the radio fad sets in.—*New York Sun*.

Just after closing hours one day at the offices of Kuhn, Loeb & Company it was discovered that some very important papers had to be delivered to J. P. Morgan, of J. P. Morgan Company, and that there was no one left in the establishment to deliver them except the negro porter. The importance of conveying the papers was so great that it was at last decided to immediately dispatch the negro on the errand. Upon his arrival at Morgan's offices, Rastus explained that he must see J. P. Morgan of J. P. Morgan Company, in person, on an important matter. He finally reached the big financier's exclusive retreat and asked if he was J. P. Morgan of J. P. Morgan Company.

"I am," condescended Mr. Morgan, "and who are you that comes on such an important errand?"

"Suh," replied the negro haughtily, "I'se de coon of Kuhn, Loeb & Company."

Discriminating Verdict.

A countryman with a local reputation as a vocalist attended a dinner, and was asked to sing. Altho he had no music with him, and was as hoarse as a frog, he consented to try, but broke down.

"Never thee mind, lad," said an elderly guest, trying to cheer him up; "never mind the breakdown, for thee's done thy best; but th' fellow as asked thee t' sing ought to be shot."—*The Baptist*.

A Specialist.

Young Doctor (introducing his only patient to a friend): Mr. Brandel—my practice.—*Fliegende Blätter*.

A Great Year for Stimulants.

Reports come that it is a remarkable wine year in France and that both red and white wines are of admirable quality.

But that news is of no consequence to us. What concerns us is that the manufacture of beverages from wood alcohol, denatured alcohol and other standard materials proceeds prosperously and on a great scale in Brooklyn, and that Scotland is getting so rich making whisky for export that Marshal Haig has found it expedient to go back into the directorate of Haig & Haig.

Philip: "There should be a law against the cheek-to-cheek hold in dancing."

Philippa: "I never thought you were so puritanical."

"I'm not, but the powder always gets my hay fever going."

Dead Men Tell No Tales, but This Was a Woman.

"Prosecution Bases Case on Post-Mortem Statements of Woman He Killed."—*Headline in The Scranton Republican*.

We don't like the Prom girl.
We think the feminine knee
Is a disgusting sight.
We would never allow nicotined lips
To meet ours.
We think the modern
Seeker after Emotional Experiences
Is lowering the standard of the race.
We consider dancing,
In its more closely related forms,
Dangerous.
But then—
We are a feeble minority
And our name is probably Clarence
And we ain't human.
Gracious, no!

—*Williams Purple Cow*.

Cautious Man.

"And you are 95 years old!" she exclaimed. "How wonderful! You look so well. How have you managed to do it?"

"My method is very simple. I never let any of my friends know when I am not feeling well; consequently I've never had to take any of the things they would have recommended, if they had known I was ailing."—*The Continent (Chicago)*.

The Hospital Visitor.

I've all the equipment I had at my birth;
Abnormally normal I dwell on the earth.
No part or attachment, though small it might be,
Has ever been surgically wrested from me.

So here in my corner I'm humble and dumb,
While all my companions with whom I have come
Cheer up the poor invalid, all too faint-hearted,
With tales of how they and their organs were parted.

—*M. M.*

Mr. Johnson, deacon in the local church, owned a drug store in a small town. The church was in need of new hymnals. Mr. Johnson offered to furnish the much-needed books provided he could place an advertisement on the inside.

After due consideration the pastor and church membership agreed to this offer and in the course of time the books arrived.

The following Sunday morning the pastor, in announcing the arrival of the new hymnal, said: "I have the pleasure to present to you this morning the new hymnals so generously furnished by Brother Johnson. We should be doubly grateful to Brother Johnson, for after careful examination I find the brother has refrained from placing a secular advertisement in so sacred a book. We will now sing hymn on page 162.

'Hark! the angel voices sing,
Johnson's pills are just the thing.

District Branches

FIRST DISTRICT BRANCH

ANNUAL MEETING, YONKERS, NOVEMBER 1, 1922

The meeting was called to order at the Elks Club at 10:45 a.m. by the president, Dr. George Leitner. Dr. John A. Card, of Poughkeepsie, acted as secretary. There being no reports of officers or unfinished business the Society proceeded to the election of officers. Dr. Charles E. Denison, of New York, having made known the fact that he would be unable to accept the secretaryship again, the following nominations were made: for president, Edward C. Rushmore, Tuxedo Park; first vice-president, John A. Card, Poughkeepsie; second vice-president, Edward R. Cuniffe, Bronx; secretary, Charles I. Redfield, Middletown; treasurer, John T. Howell, Newburgh. On motion duly seconded and carried the secretary was authorized to cast one ballot and they were declared elected.

Dr. Van Etten offered the following resolution and moved that it be spread upon the minutes:

Whereas, Dr. Charles E. Denison has declined renomination for the office of secretary for the First District Branch, an office which he has held continuously for the past sixteen years.

And Whereas, the First District Branch has suffered a serious loss in discontinuing official relations with an efficient and faithful secretary;

Therefore, Be it Resolved, that the First District Branch extend a vote of thanks and appreciation to Dr. Charles E. Denison for his faithful service, deeply regrets his retirement, and wishes for him improved health and continued happiness.

The resolution was unanimously carried by a rising vote.

Dr. Walter Timme sent a telegram regretting his absence because of illness.

Fifty members enjoyed an excellent luncheon in the club grill.

Dr. Delphey, of New York, was given the privilege of the floor in speaking of Workmen's Compensation Law and the work the Committee had done.

Dr. Booth, President of the Medical Society of the State of New York, urged closer relation between the sections of the Society, spoke of the value of the Directory, and Journal, and expressed the hope of publishing a weekly journal. Dr. Booth also stated that for the accomplishment of more satisfactory functioning of the various efforts of the State Society larger dues were inevitable.

"The Health Nuisance of the City to the County," Frank Overton, M.D., Patchogue.

"The Treatment of the Commoner Gastric Complaints of the Cardiac Patient," Thomas F. Reilly, M.D., New York. Discussed by Drs. Pardee and Silver, Rose, Delphey, Hofheimer and Thomson.

"The Laboratory Findings as Aid to Prognosis in Hypertension," Joseph E. Connery, M.D., New York. Discussed by Dr. Bishop.

"The Indication for the Use of Quinidine in Auricular Fibrillation," John Wyckoff, M.D., New York. Discussed by Drs. Bishop and Pardee.

"Cerebro-spinal Lues," Edward Livingston Hunt, M.D., New York. Discussed by Dr. Bishop.

"On the Stormy Road to Puberty," George Dow Scott, M.D., New York.

"The Non-Surgical Drainage of the Colon; Its Diagnostic and Therapeutic Value," N. Phillip Norman, M.D., New York. Discussed by Drs. Stokes and Adler.

"The Prospects of the Prostatic," Edward L. Keyes, Jr., M.D., New York.

"Intussusception of the Small Intestines in Adults," Raymond P. Sullivan, M.D., New York.

"Some Experiences with Spinal Anaesthesia," J. Fielding Black, M.D., White Plains. Discussed by Drs. Lyman and Burroughs.

THIRD DISTRICT BRANCH

ANNUAL MEETING, KINGSTON, SEPTEMBER 28, 1922.

The meeting was called to order at ten o'clock, with the presentation of unusual cases by members of the Society. The cases were assigned to special groups where the methods of examination were observed and the deductions considered.

At twelve o'clock there was an inspection of the Benedictine Sanitarium and Kingston City Hospital, where many interesting patients were shown.

Dinner was served by the Medical Society of the County of Ulster, at the Y. M. C. A.

AFTERNOON SESSION

"Our Obligation to Patients," Arthur J. Bedell, M.D., of Albany, President of the Third District Branch.

"Mastoid Operations," William J. Cranston, M.D., Kingston.

"Aplastic Anemia," James F. Rooney, M.D., Albany.

"Control of Cancer," John M. Swan, M.D., Rochester.

"Common Forms of Nervous Disease," illustrated by moving pictures, Edward Livingston Hunt, M.D., New York.

There was a general discussion of some of the cases presented in the morning, especially on those of Chronic Tuberculosis and Repair of the Urethra by Implantation of a Dog's Aorta," performed by James N. Vander Veer, M.D., and John E. Heslin, M.D.

The members present were enthusiastic regarding this the first clinic so conducted by the profession for the consideration of cases and agreed that next year the clinic will be larger and the benefit to patient and doctor much greater.

Dr. Herbert L. Odell, on behalf of the physicians and citizens of Sharon Springs, invited the Society to meet there next year.

A vote of thanks was unanimously extended the Medical Society of the County of Ulster for their excellent entertainment.

The following officers were elected for two years: President, Arthur J. Bedell, Albany; vice-president, Charles P. McCabe, Greenville; second vice-president, Frank L. Eastman, Kingston; secretary, Clark G. Rossman, Hudson; treasurer, Frank M. Sulzman, Troy.

SIXTH DISTRICT BRANCH

ANNUAL MEETING, ELMIRA, OCTOBER 3, 1922

The meeting was called to order by the president, Dr. Quirk, in the City Hall.

The minutes of the last meeting were read and approved as read.

SCIENTIFIC SESSION

"The Physician's Part in the Control of Communicable Disease," B. R. Wakeman, M.D., Hornell.

Discussed by Dr. Conway, of Hornell, and Dr. J. W. Brewer, of Bath.

Dr. Edward L. Hunt, secretary of State Society, gave a talk about what the State Society was doing in Albany, and the money appropriation made, and especially the work being done by the chairman of the Committee on Legislation, Dr. Vander Veer.

"Hæmaturia," Elliot T. Bush, M.D., Elmira. No discussion.

"Blood Transfusion," Nelson M. Percy, M.D., Chicago. Discussed by Dr. Tinker, Ithaca, and Dr. Johnson, Batavia.

"Rehabilitation of the Foot," illustrated with lantern-slides and specimens. Roland O. Meisenbach, M.D., Buffalo.

SYMPOSIUM ON CANCER

"Can Anything Be Done to Prevent Cancer?" John M. Swan, M.D., Rochester.

Discussed by Dr. Arthur Chittenden, of Binghamton; Dr. Nelson M. Percy, of Chicago; Dr. H. B. Marvin, of Binghamton; Dr. Roland O. Meisenbach, of Buffalo; Dr. Hugh S. Gregory, of Binghamton; Dr. M. A. Dumond, of Ithaca, and Dr. W. S. Cobb, of Corning. Closed by Dr. Swan.

"Surgical Treatment of Cancer," Arthur W. Booth, M.D., Elmira.

Discussed by Dr. Higgins, of Cortland, and Dr. Johnson, of Batavia.

"Deep X-ray Therapy," Harvey R. Gaylord, M.D., Buffalo. No discussion.

"Chemical Treatment of Inoperable Cancer," with pictures and report of forty cases. Charles W. Strobell, M.D., New York City.

The president received a telegram from Dr. Douglas A. Quick, of New York City, saying he was unable to be present, the only absent one on the program.

Dr. Howland, of Elmira, gave an interesting talk on "How Mothers and Nurses Should Instruct Children."

The ladies were entertained at the Country Club, and were also invited to the reformatory. A unanimous vote of thanks was given the physicians of Elmira and "the Elmira Academy of Medicine" for dinner and courtesies shown.

Invitation was received from the Medical Society of the County of Broome to hold the next annual meeting in Binghamton, and was unanimously accepted.

One hundred and nine attended the meeting and had dinner and all had a very enjoyable time.

EIGHTH DISTRICT BRANCH

ANNUAL MEETING, NIAGARA FALLS, OCTOBER 5, 1922

The meeting was called to order at 11:30 in the Community House of St. Paul's Methodist Episcopal Church, by the president, Dr. Trick.

The minutes of last meeting read and approved as read.

The president announced that the election of a first vice-president to fill the unexpired term of Dr. Edward Torrey was in order, but before the nomination, as a tribute to Dr. Torrey, he requested that the members present stand with bowed heads for one minute.

Dr. John W. LeSeur placed in nomination the name of George W. Cottis, of Jamestown, for first vice-president to fill the unexpired term of Edward Torrey, M.D.

As there were no other nominations, the secretary was instructed to cast one ballot for Dr. Cottis. Dr. Cottis was declared elected.

Under new business the courtesy of the floor was given to Dr. DeWitt H. Sherman, who spoke on the work of the State Department of Health toward reducing infant mortality and mortality of women during puerperium. He urged that each county take steps to aid this work through the county societies.

The president reported on the conditions of the Medical Profession throughout the Eighth District.

Address by Arthur W. Booth, M.D., Elmira, president Medical Society of the State of New York, on the work of the Society.

Address by James N. Vander Veer, M.D., Albany, chairman Committee on Legislation, Medical Society of the State of New York.

"The Physician in Court," George W. Whiteside, Esq., legal counsel Medical Society, State of New York, was read by title.

Luncheon was served by the Ladies' Aid Society of the Church.

Dr. Rooker, of Niagara Falls, announced that a committee of ladies had arranged to take the visiting ladies immediately after lunch on a sight-

seeing tour and tea at the Refectory on the Canadian side.

AFTERNOON SESSION

Address on Neurological subjects, illustrated by moving pictures by Edward Livingston Hunt, M.D., New York, secretary of the Medical Society of the State of New York.

Discussion opened by Edward Sharpe, M.D. "The Diarrhoeas, Their Recognition and Treatment," Charles G. Stockton, M.D., Emeritus Professor Medicine, Medical Department University of Buffalo.

Discussion Dr. Rochester, Dr. Dunham and Dr. Sherman.

Address on the work of the American Society for the Control of Cancer, by John M. Swan, M.D., of Rochester.

"The Causes of Operative Mortality," by George W. Cottis, M.D., of Jamestown.

Discussion Drs. Johnson, Lee and Le Seur.

"Some Phases of Abdominal Surgery," George W. Crile, M.D., Cleveland, Ohio.

Discussion, Drs. Dunham and Johnson.

A resolution thanking the Ladies' Aid Society for their part in making our meeting a success, was adopted.

The meeting was the largest in point of attendance the Eighth District Branch has had in some time, there being over 150 present at the afternoon session.

County Societies

MEDICAL SOCIETY OF THE COUNTY OF QUEENS

REGULAR MONTHLY MEETING AT RICHMOND HILL, OCTOBER 31, 1922

The meeting was called to order in the Masonic Temple by the president, Thomas C. Chalmers, M.D.

The following resolution was adopted: "To the Boards of Trustees and the Medical Boards of the various hospitals located in the County of Queens, the Medical Society of the County of Queens desires to call attention to the object of the society and its requirements for membership.

"The objects of the Queens County Medical Society are to aid in regulating the practice of medicine and surgery in the County of Queens, to aid in securing the enforcement of the laws relating thereto, to contribute to the diffusion of true science, particularly the knowledge of the healing art, and to assist in the preservation of the public health.

"The active members of the society shall be physicians in good moral and professional standing, residing or practicing in the County of Queens and duly licensed and recorded in the office of the County Clerk.

"Membership in the society conveys with it membership in the State Society.

"In view of the above, the Queens Medical Society has at its regular meeting held on October 31, 1922, resolved that it recommend to the various Boards above mentioned, that they shall insist and require that after January 1, 1923, all members of the attending staffs, associate staffs or courtesy staffs, and all physicians enjoying hospital privileges in the various hospitals in this county; shall be members in good standing in a county society in this state.

"Copies of these recommendations are to be sent to all hospitals in the County of Queens."

The Society voted to have a dinner in December.

The scientific program consisted of a paper "Common Forms of Nervous Diseases," illustrated by motion pictures, by Edward Livingston Hunt, M.D., and Orrin S. Wightman, M.D. Both speakers were enthusiastically received. Discussion by Drs. Frederick J. Schweikart, Frank J. Weigand, Walter C. A. Steffen and Charles B. Story.

The meeting was well attended and followed by the usual collation.

MEDICAL SOCIETY OF THE COUNTY OF
NASSAU

QUARTERLY MEETING, GARDEN CITY, N. Y.,

TUESDAY, OCTOBER 3, 1922.

The third quarterly meeting of the Society took the form of a social dinner at the Garden City Hotel. This dinner was designated as "The First Annual Dinner of the Medical Society of the County of Nassau." The hour fixed for the dinner was 7:30 p.m., and at that time seventy-five members, their wives and invited guests, sat down, at group tables, to an excellent and well-arranged banquet.

The Committee on Arrangements was made up of the following physicians: Drs. Arthur C. Martin, Chairman; Guy F. Cleghorn, Richard Derby, Alfred H. Parsons, Benjamin W. Seaman, and Louis A. Van Kleeck, Manhasset.

Among the invited guests may be mentioned the following: Hon. Martin W. Littleton, Hon. George H. Payne, Hon. George L. Thompson, Hon. H. Trubee Davison, Hon. L. D. Howell, and Dr. Thomas C. Chalmers, President of the Medical Society of the County of Queens.

Addresses were made by Mr. Littleton, Mr. Hyde, State Senator Thompson, Assemblyman Davison, Dr. Chalmers and Secretary Cooley.

In his address, Assemblyman Davison referred very feelingly to the recent bereavement of Dr. and Mrs. Richard Derby, in the loss of their eight-year-old son, and the Secretary was instructed to send a note of sympathy on behalf of the Society to Dr. and Mrs. Derby.

The resignation of Dr. J. H. Durkee, for many years an active member of the Society, was accepted, with regrets. The doctor was elected an honorary member.

The meeting was, in every way, a great success and should extend the influence of the Society throughout the County. The annual meeting will be held Tuesday, November 28, 1922.

MEDICAL SOCIETY OF THE COUNTY OF
THE BRONX

REGULAR MEETING, WEDNESDAY EVENING,
OCTOBER 18, 1922

The President, Dr. Maximilian Ziegler, called the meeting to order promptly at 8:30, and after an expeditious executive session, presented a most interesting clinical program. Patients and case reports were shown by Drs. White, Williams and Hutton, of Lincoln Hospital; by Drs. Klein, Ballin, Cohn and Amster, of Bronx Hospital; by Drs. Herrman, Kahn and Leszynsky of the Lebanon Hospital, and by Drs. Walsh, MacGrath and Satterlee, of the Fordham Hospital. All of them were cases of unusual interest, were ably presented and freely discussed until the meeting adjourned to collation at 12:30 a.m. One hundred and eighty-five members were present.

MEDICAL SOCIETY OF THE COUNTY
OF SUFFOLK

ANNUAL MEETING AT RIVERHEAD, OCTOBER 26, 1922

The meeting was called to order by the President, Dr. Stokes. Dr. James Halsey, Islip, was elected president; Dr. A. G. Terrell, Riverhead, was elected vice-president; Dr. Frank Overton, secretary and treasurer. One hundred dollars was appropriated for the expenses of the legislative committee, Dr. W. H. Ross, of Brentwood, chairman. One hundred dollars was voted to the secretary to cover the expense of a monthly letter to every member, giving public health items and local medical news, an interesting experiment in vitalizing the personal relationships between the members. Dr. A. C. Martin, of Rockville Center, gave a report of the activities of the State Health Department in prenatal work.

MEDICAL SOCIETY OF THE COUNTY
OF ALBANY

MEETING OCTOBER 11, 1922, AT ALBANY, N. Y.

The meeting was called to order at 9 p.m. at the Adelphi Club by the president, Dr. T. W. Jenkins.

The following members were present: Drs. Jenkins, Curtis, Moore, L. Brown, Dickinson, Barrett, J. Phelan, T. Phelan, Van Woert, Olshansky, Kemp, Bedell, Conway, McDowell, Rooney, Faust, Freund, J. Vander Veer, Schneider, Heslin, Keens, Hinman, Hempstead, Fromm, Lawson, Hughes, Drooz, DeRusso, A. B. Van Loon, Pessolano and Lomax.

The minutes of the previous meeting were read and adopted as read.

The report of the Board of Censors regarding illegal practitioners was adopted and placed on file.

Dr. Edward B. Campbell of Albany, was unanimously elected to membership.

It being reported that Dr. Percival Harrig, former secretary and devoted member of this society, was ill, it was unanimously passed that the secretary send him a letter expressing the sentiments of the society.

Dr. J. N. Vander Veer, chairman State Legislative Committee, reported that the chiropractors were broadcasting their propaganda via wireless twice a week from Iowa. He urged the County Legislative Committee to take more interest in medical legislative affairs. He advocated that each member of this society obtain 19 or 20 signatures for use in influencing the legislature to promote legal medical practice. He also stated that the State Society was contemplating increasing its dues so as to provide sufficient legislative activity.

A letter was read from Dr. Florence McKay, in charge of the Division of Maternity, Infancy, and Childhood, of the State Health Department, notifying us that Dr. H. L. K. Shaw was the local Consultant in Pediatrics and Dr. Paul T. Harper, the local Consultant in Obstetrics. The letter was referred to the Program Committee.

A letter was read from Dr. J. N. Vander Veer informing the members of the Regents' Convocation in Albany, and invited the members to attend the sessions, especially on October 19, when addresses on Medical Education will be given.

SCIENTIFIC PROGRAM

Dr. Otto Faust read a paper on "Prevention of Heart Diseases in Children." Discussed by Drs. Fromm, Hinman, Freund and Faust.

A vote of appreciation to Dr. Faust was passed by the Society.

Dr. Louis J. DeRusso read a paper on "Histology of Skin Lesions." Discussed by Drs. Jenkins and Curtis.

Meeting adjourned at 10:45 for luncheon.

ONTARIO COUNTY MEDICAL SOCIETY

ANNUAL MEETING, EAST BLOOMFIELD, OCTOBER 10, 1922.

The meeting was called to order at Oak Mount Sanitarium.

The following officers were elected for 1923: President, John Spengler, Geneva; vice-president, John Parmenter, Geneva; secretary-treasurer, Daniel A. Eiseline, Shortsville; censors, N. C. Burgess, Canandaigua; C. Harvey Jewett, Clifton Springs, and A. M. Mead, Victor; delegate to State Medical Meeting, H. J. Knickerbocker, Geneva; chairman legislative committee, A. W. Armstrong, Canandaigua; chairman committee on public health, John H. Jewett, Canandaigua.

Following a dinner served at the Sanitarium, Dr. John J. Lloyd, superintendent of the Monroe County Tuberculosis Sanitarium, gave an address on the "Diagnosis of Tuberculosis."

SCHUYLER COUNTY MEDICAL SOCIETY

SPECIAL MEETING, WATKINS, OCTOBER 26, 1922.

The meeting was called to order at the Glen Springs, Watkins, on the evening of October 26, 1922.

There were members of the society and guests from Tompkins County and Chemung County Societies present. Dr. Arthur W. Booth, president of the State Medical Society, was also present.

The minutes of the meetings of October 27, 1921, and February 22, 1922, were read.

Report of the Censors was presented by Dr. Albert Warren Ferris.

Dr. Ferris also made a report as delegate to the Annual Meeting of the Medical Society of the State of New York, and as delegate from the Medical Society of the State of New York to the Annual Meeting of the American Medical Association in St. Louis.

Dr. J. M. Quirk presented the report of the Committee on Legislation.

The paper of the evening was presented by Dr. Robert T. Morris, New York, with the title "The Menace of the Feeble-Minded."

Immediately after the adjournment of this meeting a special meeting was held, at which the following officers, holding over since last election, were reelected to serve the remainder of the fiscal year: President, Albert Warren Ferris; vice-president, Samuel B. Clark; treasurer, D. M. Scutt, and secretary, Rollin O. Baker. Albert Warren Ferris was reelected delegate to the State Society, and R. O. Baker, alternate.

MEDICAL SOCIETY OF THE COUNTY OF SARATOGA

ANNUAL MEETING, SARATOGA SPRINGS, OCTOBER 25, 1922.

The meeting was called to order by the President in the McGregor Golf Club.

After luncheon the Society proceeded to the business at hand.

Motion made and seconded that the reading of the minutes of the last meeting be dispensed with. Carried.

The application of Dr. Richard Morgan having been approved by the Board of Censors was presented and on motion the secretary was instructed to cast one ballot. This was done and he was declared elected.

The next order of business was the election of officers.

The name of Dr. John B. Ledlie was presented as candidate for president, and on motion the secretary was instructed to cast one ballot. This was done and Dr. Ledlie was declared elected.

Dr. Ledlie declined the nomination and election on the grounds that he was treasurer and did not think it wise to change officers so often.

Motion made and seconded to rescind the nomination and election of Dr. John B. Ledlie as president. Carried.

Dr. Carl Comstock, Saratoga Springs, was then nominated for president, and Dr. Edward J. Callahan, Schuylerville for vice-president. Motion made and seconded that secretary be instructed to cast the ballots. This being done they were declared elected.

Motion made and seconded that Dr. John B. Ledlie succeed himself as treasurer, and Dr. Ralph B. Post succeed himself as secretary. Ballots having been cast they were declared elected.

Motion made and seconded that the present censors, Drs. M. E. Van Aerem, George Fish and Walter C. Crombie succeed themselves and secretary be instructed to cast one ballot. This was done. They were declared elected.

The meeting then proceeded to the scientific program, which consisted of papers on:

"Lung Abscesses," by Richard Morgan, M.D., Mt. MacGregor.

"Motherhood and Child Welfare Work as Outlined by the State Department," Henry L. K. Shaw, M.D., Albany.

MEDICAL SOCIETY OF THE COUNTY OF ESSEX

ANNUAL MEETING, PORT HENRY, TUESDAY, OCTOBER 3, 1922.

The meeting was called to order by the President, Dr. Dowd.

Minutes of the previous meeting read and approved as read.

Resolution of sympathy was passed in regard to the death of Dr. J. J. Owen.

The following officers were elected for 1923: President, Dr. Martin E. Sargeant, Ticonderoga; vice-president, John Breen, Schroon Lake; secretary, Harold J. Harris, Westport; treasurer, Walter T. Sherman, Crown Point; censors, Drs. R. T. Saville, T. H. Canning and T. J. Cummins; delegate to State Society, Thomas H. Canning; alternate to State Society, Thomas J. Cummins.

Dr. Alexander Gersen of Elizabethtown was elected to membership.

Scientific program consisted of a talk on Obstetrics in which all the members present took part.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

ORIGIN AND HISTORY OF ALL THE PHARMACOPEIAL VEGETABLE DRUGS, CHEMICALS AND PREPARATIONS WITH BIBLIOGRAPHY. Volume 1, Vegetable Drugs, 8th and 9th Decennial Revisions (Botanical Descriptions Omitted). By JOHN URI LLOYD. Prepared under the Auspices of and Published by the American Drug Manufacturers' Assn., Washington, D. C. The Caxton Press, Cincinnati, 1921. Price, \$6.00.

OPHTHALMOSCOPY, RETINOSCOPY AND REFRACTION. By W. A. FISHER, M.D., F.A.C.S., Chicago, Ill., U.S.A. Professor Ophthalmology, Chicago Eye, Ear, Nose and Throat College. 248 illustrations, 48 colored plates. Published by W. A. Fisher, M.D., F.A.C.S., 31 North State Street, Chicago, Ill.

PHYSICAL DIAGNOSIS. By W. D. ROSE, M.D., Lecturer Physical Diagnosis and Associate Professor Medicine, University of Arkansas; Visiting Physician Little Rock City and Baptist Hospitals. Third Edition. Three hundred and nineteen illustrations. C. V. Mosby Company, St. Louis, Mo. Price, \$8.50.

PHYSIOLOGY AND BIOCHEMISTRY IN MODERN MEDICINE. By J. J. R. MACLEOD, M.B., Professor Physiology, University of Toronto; formerly Professor Physiology, Western Reserve University, Cleveland. Assisted by ROY G. PEARCE, A. C. REDFIELD, N. B. TAYLOR and others. Fourth Edition. 243 illustrations. 9 plates in colors. C. V. Mosby Co., St. Louis, Mo. 1922. Price, \$11.00.

THE ELEMENTS OF SCIENTIFIC PSYCHOLOGY. By KNIGHT DUNLAP, Professor of Experimental Psychology, Johns Hopkins University, Baltimore; author of "Mysticism, Freudianism and Scientific Psychology." Illustrated. C. V. Mosby Co. 1922. Price, \$3.50.

PUBLIC RELIEF OF SICKNESS. By GERALD MORGAN. The Macmillan Company, New York. 1922.

INFANTILE CIRRHOSIS OF LIVER. By SANTOSH KUMAR MUKHERJI, M.B., M.R.A.S., Editor, Indian Medical Record; Lecturer, National Medical College India, and King's Hospital. With a foreword by Major General B. H. DEARE, C.I.E., M.R.C.P., D.P.H., I.M.S., etc., Surgeon General Bengal, formerly Dean Medical Faculty, Calcutta University. The Windsor Press, Calcutta. 1922.

OBSTETRICS FOR NURSES. By JOSEPH B. DeLEE, M.D., Professor of Obstetrics in the Northwestern University Medical School, Chicago. New (6th) Edition, entirely reset. 12mo, 525 pages. 245 illustrations. Philadelphia and London: W. B. Saunders, 1922. Cloth, \$3.00 net.

LECTURES ON DIETETICS. By MAX EINHORN, M.D., Emeritus Professor Medicine New York Post Graduate Medical School and Hospital; Visiting Physician Lenox Hill Hospital. 12mo. of 244 pages. Phila. and London: W. B. Saunders Co., 1922. Cloth, \$2.25 net.

THE TREATMENT OF FRACTURES: With Notes upon a Few Common Dislocations. By CHARLES L. SCUDDER, M.D., Assistant Professor Surgery Harvard Medical School. Ninth Edition, Revised. Octavo, 749 pages, 1252 illustrations. Phila. and London: W. B. Saunders Co., 1922. Polished Buckram, \$8.50.

PIRQUET'S SYSTEM OF NUTRITION. An Outline of the Pirquet System of Nutrition. By Dr. CLEMENS PIRQUET, Professor Pediatrics University of Vienna, Austria. 16mo. of 96 pages. Phila. and London: W. B. Saunders Co., 1922. Cloth, \$2.00 net.

DISEASES OF WOMEN. By HARRY STURGEON CROSSEN, M.D., F.A.C.S., Clinical Professor Gynecology, Washington University Medical School, Gynecologist in Chief to the Barnes Hospital; Gynecologist to St. Luke's Hospital. Fifth Edition, Revised and Enlarged. 934 engravings, one color plate. C. V. Mosby Co., St. Louis, Mo., 1922. Price, \$10.00.

MONOGRAPHS ON EXPERIMENTAL BIOLOGY. Edited by JACQUES LOEB, Rockefeller Institute, T. H. MORGAN, Columbia University, W. J. V. OSTERHOUT, Harvard University. "Injury, Recovery and Death, in Relation to Conductivity and Permeability," by W. J. V. OSTERHOUT, Professor of Botany. J. B. Lippincott Co., Philadelphia.

"OUR MEDICINE MEN," by PAUL H. DE KRUIF. The Century Co. New York, 1922.

LATERAL CURVATURE OF THE SPINE AND ROUND SHOULDERS. By ROBERT W. LOVETT, M.D., Sc.D., Boston, John B. and Buckminster Brown Professor Orthopedic Surgery, Harvard University. Member American Orthopedic Society. Fourth Edition, revised. 172 illustrations. P. Blakiston's Son & Co., Philadelphia. 1922. Price, \$2.50.

Book Reviews

OPIATE ADDICTION, ITS HANDLING AND TREATMENT. By EDWARD HUNTINGTON WILLIAMS, M.D., formerly Associate Professor of Pathology, State University of Iowa; Assistant Physician, New York State Hospital System. The Macmillan Co., New York, 1922.

The title indicates truly "a large order," to paraphrase a colloquialism. Were it only possible! The problem of narcotic drug addiction is before us today, especially in our large municipalities as at no other time in our history. This habit—for it is obviously nothing else—must be studied from every point of view; social, ethical, psychological and medical. It might with some truth be stated to be a problem of hygiene, especially in its preventive aspects.

The purpose of the author appears to popularly handle a subject in easily accessible form and give authoritative information on a medical topic of more or less general importance. If such is his purpose he has done fairly well. Here we find a most distressing habit outlined with its debasing peculiarities. If the old adage applies "an ounce of prevention is worth a pound of cure" then this message should do its work well.

It is unfortunate that but a few physicians carry out the pernicious practice scientifically termed "ambulatory treatment of drug addicts" and these few that do give the entire profession of medicine a bad name. On the

other hand, those that practice "abrupt withdrawal to dis-intoxicate" likewise are few in number and whose failure to relieve the physical distress of denarcotization bring hostile criticism from the sufferer and his associates. These two camps, as there are advocates of both plans of treatment, heap ridicule (and create confusion) on the practitioner of honest belief who knows that it is as impossible for the addict to cure himself of his habit when he has his supply constantly replenished as it is to be freed by "cold turkey" without discomfort.

It is exceptional under humane proper hospitalization for any drug addict not to be promptly, painlessly, and safely denarcotized, no matter how long he or she has been so addicted. It is hoped that this one truth can be impressed upon all but this is not a cure.

Narcotic drug addiction is a personal problem, it is the problem of the individual. Solution of this problem must have something definitely helpful. There is no easy road back to a normal life. The drug addict has endeavored to escape life's responsibilities, but his panacea has been more terrible than the phantom from which he desired to hide.

The publishers mislead when they state that "the work sheds new light on much that has been vague in the treatment of addicts." A careful perusal fails to bring such facts to light.

The author also seems to have "peculiar" views on the Federal Narcotic Law, popularly termed the Harrison Law, when he says (page VI., second paragraph), "The law not only transgressed ancient customs heretofore held sacred to the judgment of physicians alone . . ." The law explicitly uses the term "*In Good Faith*," thereby awakening in some dormant minds the actual intentions of therapeutics whether ancient or modern. To the trafficking doctor, many of whom have lost all faith (if any ever had such a commodity) the conclusion naturally applies. To others, and these are in the vast majority, there can be no such application.

Again (page 178, second paragraph) "However, the menace of the dishonest doctor is inconsequential in comparison with that of the illicit peddler." A most astonishing conclusion indeed. A peddler illicitly disposing of narcotic drugs furnishes prima facie evidence when caught red handed;—not so with the trafficking doctor. In fact, the trafficking doctor is a most difficult police and legal problem.

The author, unfortunately, has omitted the psychological aspects of narcotic drug addiction as the mental aspects play a most important role in this shortcoming of conduct. The very condition which started this practice remains after the patient is denarcotized, and it is here that social rehabilitation affords the brightest promise of preventing relapses. Without such additional aid, narcotic clinics all over our land failed. Many, very many, of our institutional cases fall down. But those patients, both morally and physically rehabilitated, are exceptional in their number who relapse. We speak here with an authority of several hundred such cases. Our experience with our failures, and these amounted to many thousands, was that we failed when we could not afford to give social uplift to each and every habitue. This in our estimation is a serious omission and one that may make the book fall short of its title.

S. D. HUBBARD.

MEDICAL ELECTRICITY FOR STUDENTS. By A. R. I. BROWNE, Teacher Medical Electricity, Western Infirmary, Glasgow. London: Henry Frowde and Hodder & Stoughton. 1921. Price \$4.25.

This book is a manual on Medical Electricity intended to prepare students, lay as well as medical, for examination.

The matter as presented, although well written, is far beyond the scope of the non-medical student, unless he has had a thorough course in Physics and Chemistry, for the greater part of the book is taken up with the physical and chemical principles of the various electrical

currents. Although we can appreciate that the student should acquire some knowledge as to the construction of the various electro medical apparatus, still the subject matter as presented by the author is too voluminous to be grasped.

More space could also have been given for the description of the newer currents as the Sinusoidal and High Frequency. Since the Great War, these currents have come into more prominence and use and have in a good many instances displaced the use of the older Faradic and Galvanic modalities.

As for the medical student, this book could be classed as an excellent text book providing the last chapter on Diseases and Treatment, was entirely left out. It would have sufficed to have given the various physiological effects as produced by these various currents and to depend upon the student's general medical knowledge, to apply these principles in the same manner as he applies his drug therapy.

Electricity is not a substitute for drug therapy, but must be looked upon as addition to one's therapeutic equipment. But it is like a drug because its action is known. Its dosage must be exact, and it can be measured with mathematical precision. Its potency depends mainly on proper application at the proper time.

B. KOVEN.

ARTERIAL SCLEROSIS, CONSIDERATION OF THE PROLONGATION OF LIFE AND EFFICIENCY AFTER FORTY. BY LOUIS FAUGERES BISHOP, M.A., M.D., Sc.D., F.A.C.P., Professor Heart and Circulatory Diseases, Fordham University, Physician Lincoln Hospital. London: Henry Frowde and Hodder & Stoughton. 1921. Price \$4.25.

It would be presumptive for the reviewer to try to add his comment of approval to this study by the author, the value of the book is acknowledged by the fact that this is the third edition, although the title has been slightly changed. Arterial sclerosis is the title attached to this edition, although the term arteriosclerosis is at the top of every even numbered page. As those who are familiar with the previous editions know, this study is the result of the author's many years of extensive practice in cardio vascular diseases and presents the subject in a valuable, instructive manner. The subject of arterial degeneration and disease is of interest to all because of the influence of vascular conditions upon the organs of normal and healthy individuals as well as upon those who do not enjoy good health. The book is well written in a style easy to read and assimilate, upon good paper and in clear type.

H. M. M.

A LABORATORY MANUAL FOR COMPARATIVE VERTEBRATE ANATOMY. BY L. H. HYMAN, Department of Zoology, University of Chicago. The University of Chicago Press, Chicago, Ill. 1922. Net \$2.50; postpaid, \$2.70.

Not so long ago a tremendous furor was raised when Darwin announced his theories of evolution. The idea was new, and most who sought scientific evidence for and against this theory had to blaze their own trails. As the various links were discovered and fitted into place, text books were formed. The widespread discussion which was re-lighted in the daily newspapers this year shows the need for more education along these lines.

After much detailed work, L. H. Hyman has produced a laboratory manual based on the comparative rather than the type plan, in which she gives a well pruned outline of the "history of the human body." It is just as valuable to the beginning student for the countless confusing details which have been omitted as for the very exact explanations given.

Following a brief general description of the various forms of animals, the external anatomy of about a dozen typical chordates is considered. A few pages are next devoted to embryology, particularly to the germ layers; and then, chapter by chapter, each body system is carried through the types of its evolution,

from the amphioxus to a mammal. Particular emphasis is laid on the skeletal and coelomic systems.

The numerous illustrations are to be commended for their simplicity and clarity, and set an example which the student can well follow in his own note book. The author will surely receive the thanks of many laboratory instructors whose work will be greatly simplified by this book.

W.M. H. FIELD.

THE PRACTICE OF MEDICINE. By A. A. STEVENS, M.D., Professor Applied Therapeutics, University of Pennsylvania; Professor Therapeutics and Clinical Medicine Woman's Medical College of Pennsylvania. Octavo of 1106 pages. Philadelphia and London; W. B. Saunders Co., 1922. Cloth, \$7.50 net.

The appearance of a new Practice of Medicine is an event in medical literature. The usefulness of such a work can best be judged only after years of familiarity with it. As in a new friend, one may admire its brilliance and charm and apparent good sense, but only time will tell whether one may turn to it again and again and find, nearly always, a ray of light on one's perplexities. We come to lean on such a work and passing editions, with their broadening vision sustain our confidence. A brief acquaintance with Stevens' book inspires the hope that it may find such a place in our libraries. In any event, it should be particularly valuable to the beginners in medicine. The definitions are vivid and clean-cut, presenting a sketch of each disease that tends to stick. The fuller descriptions that follow are as complete as could be expected in a work of the size, and are presented in a style that largely avoids the stereotyped phrasing that would seem inevitable in a field so often covered before. The treatment advised is given in no uncertain terms and may be followed without reference to works on pharmacology and dosage. It is, on the whole, conservative, presenting pretty well accepted methods of treatment and avoiding hobbies and methods which have not as yet been thoroughly established. The reviewer believes that Coleman's work on the diet in typhoid deserves more recognition in its fundamental bearing on the pathological physiology of that fever. The intravenous use of specific serum in cerebro-spinal fever might well be advised in other than "early cases in which bacteremia can be demonstrated," as shown by Herrick and substantiated by Haden. The high-fat diet in diabetes, proposed by Newburgh and Marsh, while yet unchecked by years of observation, will probably find its way into later editions. The author does allow a liberal fat ration in the milder cases, but makes no mention of it in the severer types. There is probably ample authority for every therapeutic direction in the book.

It is something of a shock to find "Infections due to Filterable Viruses" at the top of each page devoted to Acute Rheumatism, and turning the leaves, find under the same caption measles, mumps, whooping cough, scarlet fever, and a long list of other diseases, until, on turning back it appears that the section is called "Infections Due to Filterable Viruses or of Doubtful Etiology." Some other abbreviation of the caption would avoid misconceptions.

To write a practice of medicine at all today is to accomplish a monumental work. There are monuments and monuments. Dr. Stevens' book appears to be a fine monument.

T. H.

HYPERPIESIA AND HYPERPIESIS (Hypertension). A Clinical, Pathological and Experimental Study. By H. BATTY SHAW, M.D., F.R.C.P. Octavo of 191 pages, illustrated. London: Henry Frowde and Hodder & Stroughton, 1922. Cloth, \$6.50.

The author studied fifty fatal cases of hypertension from 1905 to 1914. All of these were necropsied. Seventy per cent of these showed renal changes, 40 per cent had an albuminuric retinitis. These cases were studied before the day of blood chemistry and renal

functional tests. This volume is an instructive study for those interested in renal pathology. A very detailed post-mortem study of the kidney sections in each of these cases is given. Some of the patients were carefully observed for a number of years and their blood pressures were graphically charted. H. J.

THE GLANDS REGULATING PERSONALITY. By LOUIS BERMAN, M.D., Associate Biological Chemistry, Columbia University; Physician Special Health Clinic, Lenox Hill Hosp. The Macmillan Company, New York. 1921.

This book makes very entertaining reading. But like many of the novels written on matters concerning the endocrine glands it draws a wonderful picture, which is out of all proportion to our present knowledge of the subject.

In such descriptions as "thymo-centric personalities," "pituitary centered types," etc., etc., the author is very dogmatic, whereas as a matter of fact, he is treading on purely hypothetical ground. That Napoleon's downfall after the Battle of Waterloo depended on a pituitary disturbance, may be true. But the author does not show it. This is the sort of romanticism that does not go well with scientific studies, particularly with such a new one as endocrinology. The scientific student had better follow Cushing, Timme and Rogers. The book is written in a pleasing style, but it is full of vagaries and unscientific conclusions.

J. F. W. MEAGHER.

OBSTETRICAL NURSING, A TEXT-BOOK ON THE NURSING CARE OF THE EXPECTANT MOTHER, THE WOMAN IN LABOR, THE YOUNG MOTHER AND HER BABY. By CAROLYN CONANT VAN BLARCOM, R.N., formerly Assistant Superintendent and Instructor in Obstetrical Nursing, Johns Hopkins Hospital Training School for Nurses. 200 illustrations, 8 charts. The Macmillan Company, New York, 1922.

"Obstetrical Nursing" is a book worthy to be read by all in the medical profession, not only for the helpful instruction given, but as a model of what a book of this character should be, *i. e.*, accurate in respect to scientific data, clear and concise in the presentation of this data, and humane in its character.

In the reviewer's opinion this is one of the most valuable books published on obstetrical nursing for many a year and in regard to the instruction imparted believe it will do more to save the lives of mothers and infants than many of the books which lately have been so widely advertised and which offer instruction only in "freak" obstetrics.

The author has reviewed her subject from many sources and has apparently culled the best from each source and then incorporated such findings into the finished whole.

The necessities and methods of pre-natal care are very thoroughly reviewed and the values of medical gymnastics, both pre- and post-natal, are definitely pointed out and supplemented by instructive pictures.

The care of the new born, infant feeding, home nursing, etc., receive the same intimate and careful study.

Obstetrical and infant mortality is strongly emphasized, in order to make clear the need for careful obstetrical nursing.

The book is divided into seven sections and each section is introduced by some appropriate lines of sentiment, while throughout the book kindness and patience are pictured as the handmaids of virtue.

In conclusion the reviewer would reiterate by saying that "Obstetrical Nursing" is a book worthy to be read and studied by all in the medical profession.

G. W. PHELAN.

A MANUAL OF CLINICAL LABORATORY METHODS. By CLYDE L. CUMMER, Ph.B., M.D. Octavo of 484 pages, illustrated with 136 engravings and 8 plates. Philadelphia and New York, Lea & Febiger, 1922. Cloth, \$5.50.

This is a new work on clinical laboratory methods and clinical pathology which should prove popular. One merit of its newness is that it is not encumbered with methods long since discarded by practical pathologists. One finds herein the technic of the methods in use in the up-to-date laboratories of to-day. For example, in the section on blood chemistry the methods of Myers and of Folin and Wu are clearly presented. The section on the blood, in fact, is unusually good. Urine analysis, typing of pneumococci and spinal fluid examinations are given special attention. The subject matter is so arranged that one can easily find the desired information, which makes this a book eminently suited for daily use.

E. B. SMITH.

THE PLACE OF VERSION IN OBSTETRICS, by IRVING W. POTTER, M.D., F.A.C.S., Buffalo, N. Y., Obstetrician-in-Chief, Deaconess Hospital and St. Mary's Maternity Hospital. With 42 illustrations. C. V. Mosby Co., St. Louis, 1922. \$5.00.

The first three chapters of this book are, for the most part historical, bringing the history of version up to the present date. It affords very interesting as well as instructive subject matter.

Chapter Four deals with the author's technic of version and is supplemented by clear cut and instructive photographs and diagrams. Nothing in the way of criticism can be said as to the author's method and technic of version, as the reviewer feels that such a large experience allows Dr. Potter to speak with authority, however, one wishes that just a little more detail had been added here and there, as it leaves a few points in the technic a little obscure, for instance, the direction to take in rotating the posterior shoulder anteriorly.

His method in the management of the third stage of labor has several advocates, although manual removal of the placenta is probably not so frequently practiced.

Chapter Five is devoted to "Criticism and Answers." In this chapter and in Chapter Six (Indications and Advantages) the reviewer feels that Dr. Potter has woefully failed to prove his case. His statement that "More than half the cases where version is performed are those where some malposition of the child is encountered, leads one to wonder what particular etiological factor is encountered in Buffalo that is not encountered in other cities, as to cause such a large percentage, or what presentations are classified by Dr. Potter as malposition.

Chapter Seven, "Conclusion," gives Dr. Potter's statistics. They are eloquent! Over eight per cent. abdominal Cesarean section and 83 per cent version.

In conclusion, the reviewer feels that Dr. Potter has rendered a great service, to the profession, in the introduction of his technic but, on the other hand feels, in regard to his "indications" not unlike Francis Ramsbotham when he wrote concerning Mr. Figg.

G. W. P.

AN ESSAY ON THE PHYSIOLOGY OF MIND. By FRANCIS X. DERCUM, M.D., Ph.D. Professor Nervous and Mental Diseases, Jefferson Medical College, Philadelphia. 12mo. 150 pages. Phila. and London: W. B. Saunders Co., 1922. Cloth, \$1.75 net.

This essay is truly an interpretation based on biological, morphological, physical, and chemical considerations. It starts with the simplest form of life, taking one step by step through the more complex structures until the highest type of brain, that of Man, is reached by logical channels of evolution. Here the various

processes of the human mind are studied from every known angle, and the valuable deductions of the author submitted.

He draws the conclusion from vast experience that the activities of all parts of the human brain except the cerebral cortex, are "invariable, innate, structurally predetermined; and that the only structure permitting a variable response is the cerebral cortex, or as the author states, the adaptation of the responses." Furthermore, that "a conclusive and unavoidable inference is, that if the response of the cerebral cortex is variable or adjustable, and therefore capable of change, the neurons of the cortex cannot bear the same fixed relations to each other as do the neurons of the brain stem and cord."

The quality of neurone activity which makes possible additions to our knowledge and becomes the basis of all training and education; that of transmission-associations, is not the only function of the cortex. The reception of the impact means not only the passage of the latter through dendrites, cell body, and axone, but also a physical and chemical change which results in the evolution of energy, and when it finds motor expression may differ greatly both in amount and character from that originally impinging upon the receptors. A very small stimulus may liberate a large amount of energy. Each neurone is a storehouse of energy which needs but the transmitted tap of the impact to release it.

In treating of Consciousness, the author states that, "the first inference that is justified is that consciousness disappears in proportion as fixation is established. Fixation of responses means the disappearance of consciousness and consciousness is present only in those responses which are attended by an actively varying relationship among the neurones. Whatever consciousness may be, it is something that is constantly changing.

The principle is described how the various changes in activity produce physiological sleep.

This essay must be read in its entirety to properly follow the sequence of the author's thought. His scholarly attainments, great experience, and ripe judgment, are sufficient evidence of the merit of this volume.

H. G. DUNHAM.

INFANT FEEDING, by CLIFFORD G. GRULEE, M.D., LL.D., Associate Professor and Acting Head, Department Pediatrics, Rush Medical College. Fourth Edition, thoroughly revised. Octavo 397 pages, illustrated. Phila. and London: W. B. Saunders Co., 1922. Cloth, \$4.50 net.

Grulee's treatise has been long accepted as a standard, or one might even say a classic, on infant feeding, and fortunately the author has seen the wisdom of frequent revisions since its first appearance in 1912.

There are five main divisions of the text, namely: Fundamental Principles of Infants' Nutrition; Nourishment of the Infant on the Breast; Artificial Feeding; Nutrition in Other Conditions, and Psychology of Infant Feeding.

As in previous editions, Grulee bases his feeding of normal infants on simple milk, water and malt sugar mixtures, calculated by the caloric method and the age of the child. The interval between feedings is given as four hours with only five feedings in the twenty-four hours, at 6 and 10 A. M., 2 and 6 P. M., and midnight. This four-hour interval, even from birth, has long been the routine with western pediatricians, and slowly but surely the east is falling into line, as one of the most prolific causes of colic and other digestive disturbances in the infant is too frequent feedings.

Finkelstein's classification of digestive disturbances is used as a basis for their consideration, and the latest or "nem" feeding method of Pirquet is given due notice, although, as might be expected, it is not recom-

mended for widespread use in this country at the present time.

Taking it as a whole, Dr. Grulee's book is still entitled to a place in the only too small category of accurate, simple, and reliable works on infant feeding in the English language, and as such it is of inestimable value to the student of infant feeding, whether he be undergraduate or old practitioner.

W. H. DONNELLY.

ABDOMINAL PAIN, by Prof. Dr. NORBERT ORTNER, Chief Second Medical Clinic, University of Vienna. Authorized translation by WILLIAM A. BRAMS, M.D., formerly Lieutenant-Commander, Medical Corps, U. S. N., and Dr. ALFRED P. LUGER, First Assistant, Second Medical Clinic, University of Vienna. Rebman Company, New York. 1922.

This work is a translation of the second edition of this excellent study on abdominal pain. It is a complete, thorough study of the various conditions which cause pain in the abdominal cavity together with the differential conditions which may become confused in one's mind as the cause of trouble. So much information is contained in the three hundred and fifty pages of text that after careful study of the book one must keep it for reference and constantly use it. All of the statements will not be fully accepted by American physicians and surgeons but the book will be found useful. The type is large and the spacing wide so that the reading is not difficult.

H. M. M.

SURGICAL AND MECHANICAL TREATMENT OF PERIPHERAL NERVES. By BYRON STOOKEY, M.D., Associate in Neurology, Columbia University. With a Chapter on Nerve Degeneration and Regeneration by G. CARL HUBER, M.D., Professor of Anatomy, University Michigan. Octavo of 475 pages; illustrations, 8 in colors, 20 charts. Phila. and London: W. B. Saunders Co., 1922. Cloth, \$10.00 net.

An important part of this volume is the emphasis placed upon the fact that peripheral nerve structures are a part of the central nerve system, anatomically and physiologically, and are not independent.

The chapters on "Nerve Degeneration and Regeneration" and on "Methods of Nerve Repair," give one an excellent conception of how these processes become effective.

Nerve suture, in its various phases, is carefully set forth, and some excellent illustrations are included. The operative technic is given in detail, together with indications and contraindications.

One of the most important chapters is that on "Mechanical Treatment," which has not always been stressed in the past commensurate with its great value.

Peripheral nerves more commonly the site of injury or disease, are given a chapter separately, such as the brachial plexus, musculo-spiral, median, ulnar, facial, sciatic, etc.; while those less frequently the seat of trouble are briefly touched upon.

A master stroke of completeness and thoroughness was the incorporation in this one volume of a bibliography covering all the acknowledged authorities on each particular feature of the subject, at the end of every chapter.

This book is a distinct asset to the recent literature on peripheral nerves.

H. G. D.

THE SURGICAL CLINICS OF NORTH AMERICA. April, 1922. Volume 2, Number 2. San Francisco Number. Published bi-monthly, Philadelphia and London: W. B. Saunders Co. Price, per year, \$12.00.

The contents of this number are contributions from the Surgical Clinics of the University of California Hospital, the Stanford University Hospital, the Hahnemann Hospital, and the San Francisco Hospital.

Case reports, treated with the dignity and completeness of an exhaustive study of the subject under dis-

cussion, are seen in the contributions from the Clinic of Dr. Howard C. Naffziger, of the Division of Neurological Surgery, University of California Hospital, "Spinal Cord Tumors."

June, 1922. Volume 2, Number 3. Chicago Number.

The contents of this number are contributions from the Surgical Clinics of Augustana Hospital, Wesley Memorial Hospital, Mercy Hospital, St. Luke's Hospital, Cook County Hospital, Presbyterian Hospital, North Chicago Hospital, Columbus Hospital, Michael Reese Hospital, St. Joseph's Hospital, and Rush Medical College.

The high standard set by this publication for the reporting of surgical cases is maintained in the contribution, "Recent Gunshot Wounds of the Kidney: with Report of Four Cases," from the Clinic of Dr. David C. Straus, Cook County Hospital.

J. R.

DISEASES OF THE THYROID GLAND. By ARTHUR E. HERTZLER, M.D., F.A.C.S., Professor Surgery University Kansas, School of Medicine. With a Chapter on Hospital Management of Goiter Patients, by VICTOR E. CHESKY, A.B., M.D., Associate Surgeon Halstead Hospital. 106 original illustrations. C. V. Mosby Co., St. Louis, 1922. Price, \$5.00.

This volume gives a very complete presentation of the present status of our knowledge of goitre. The author does not theorize much but gives facts from his large goitre experience. The section on pathology is particularly commendable. The author does not seem to be optimistic of the results of surgical cures of goitres giving toxic symptoms. Many of the illustrations and microphotographs are original. This book is well worth the time spent in its careful study.

H. J.

THE MEDICAL CLINIC OF NORTH AMERICA. (Issued Serially, one every other month.) Volume V, Number V, March, 1922. By Boston Internists. Volume V, Number VI. Chicago Number. May, 1922. Per clinic year (July, 1921, to May, 1922). Philadelphia and London: W. B. Saunders. Paper, \$12.00; cloth, \$16.00 net.

The March (Boston) Number contains an important article by Christian on the necessity of giving Digitalis in cardiac cases that present regular rhythm. Robey excellently discusses "Angina Pectoris." Joslin reviews the more recent developments in the treatment of Diabetes, laying great stress on the importance of gradual changes in diet, and in the instruction of the patient to take care of his own diet. Very thorough study of the subject is revealed in Pratt's paper on "Acute Rheumatic Endocarditis." A common-sense talk on "Hypertension" is given by O'Hare. The above are a few of the excellent contributions that make up this number, which certainly is a credit to Bostonian medicine.

The May (Chicago) Number is well made up with such subjects as "Reflex Abdominal Disorders" by Elliott, "Pernicious Anemia" by Williamson, "Hysteria" by Hamill, "Auricular Fibrillation" by Hamburger. Mix presents a masterful discussion of "Brain Tumors, Metastatic Carcinoma of the Lung, Adhesions following Cholecystectomy," and the treatment of the patient after gastro-jejunosomy. The latter remarks are especially deserving of wide publicity among the profession. Heart and kidney conditions in pregnancy are briefly discussed by Daly, Strouse and Cornell.

MEYER A. RABINOWITZ.

PRINCIPLES AND PRACTICE OF X-RAY TECHNIC FOR DIAGNOSIS. By JOHN A. METZGER, M.D., Roentgenologist, School for Graduates of Medicine, Medical Department, University of California. 61 illustrations. The C. V. Mosby Company, St. Louis, 1922. Price, \$2.75.

The author's aim in the preparation of this volume has been to place before the beginner in Roentgenology the fundamentals of the technical phase of this work,

but principally through disregard for detail, has defeated his purpose.

The contents include some sixty illustrations intended as a feature, most of which are photographs of the patient in position for various examinations; some of these represent conditions which are not consistent with desired results and consequently should not be offered to the student.

The discussion of the amount of radiation necessary to produce erythema (page 33) is, to say the least, not consistent with the general views concerning the factors necessary to produce such effect.

Throughout the text there also appears several misused words which will prove confusing to those not thoroughly familiar with the roentgen terminology.

With the shortcomings noted, this book cannot be recommended as a desirable treatise on this subject.

RICHARD A. RENDICH.

THE WRITING OF MEDICAL PAPERS. By MAUD H. MELLISH, Editor of the Mayo Clinic Publications. 12mo of 157 pages. Philadelphia and London: W. B. Saunders Co., 1922. Cloth, \$1.50 net.

Of the making of books there is no end, but of the many published this year, we consider this little volume one of the most useful.

The essential qualities characteristic of a well-written article have been tersely presented in an impressive manner. The author, out of her wide experience in connection with this kind of work, emphasizes the correct methods that go to make up good diction and points out the errors so frequently made.

The reading of this book, and the adoption of the advice and suggestions contained in it by members of the Medical Profession and by those who have to do with the preparation and revision of papers for publication in the medical literature will not only prove beneficial to the individual but will result in the improvement of the quality of our medical publications and ultimately in a wider reading of them. No one doing medical literary work should fail to own and read this practical handbook.

F.

THE HEALTHY BABY, THE CARE AND FEEDING OF INFANTS IN SICKNESS AND IN HEALTH. By ROGER H. DENNETT, B.S., M.D., Professor Diseases Children, and Director Department New York Post Graduate Medical School. Second Revised Edition. The Macmillan Company, New York, 1922.

This is the second revised edition of Dr. Dennett's guide for the mother in caring intelligently for her child. The author's pioneer work in simplifying the feeding of the infant and his simple and sensible methods of treating the baby in health and in disease, make him particularly qualified for the writing of a book of this kind. Many clinicians are good teachers and writers for students and graduate physicians and still have not the faculty of expressing themselves in a clear fashion to the lay reader or hearer.

Dr. Dennett has this faculty in an unusually high degree and the style and diction of his book are gratifyingly plain and lucid.

He purposely avoids too much attention to the feeding of the artificially fed infant or to the diagnosis and treatment of disease, as he considers that this would do more harm than good. The modern mother demands some simple but authoritative guide in the performance of her every-day duties for her child, and she could not do better than follow the simple rules laid down by Dr. Dennett.

While it is intended for the mother, it might well be read by the physician who is often at a loss as to where to find the simple modern ideas of caring for infants, many of which seem to be beneath the dignity of the medical textbooks on pediatrics.

W. H. DONNELLY

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CHOLECYSTITIS; ITS RELATION TO INFECTION OF THE LIVER AND PANCREAS*

By W. HOWARD BARBER, M.D., F.A.C.S.
NEW YORK CITY.

From the Department of Surgery, University and Bellevue
Hospital Medical College, Prof. George D. Stewart, Director.

IT is well to consider the relationship of gallbladder disease to inflammatory changes in the liver and pancreas because careful, systematic observations in cases of cholecystitis may lead to more detailed knowledge of the pathogenesis of hepatic and pancreatic diseases. Doyon¹ (1894) showed by direct experimentation that stimulation of the duodenal and gastric mucosæ gave rise to reflex contraction of the gallbladder and gall ducts and relaxation of the biliary sphincter and that such stimulation may travel through the afferent fibres of the vagus and backward through the sympathetic efferents. Oddi² (1895) pointed out that direct or reflex irritation within the nervous arc with its center in the first lumbar cord segment produced this same contraction of the bile passages and relaxation of the sphincter. Meltzer and Auer³ (1908-1909) noted duodenal relaxation including the opening of the Oddi sphincter and contraction of the bladder and ducts following the application of magnesium sulphate to the duodenal mucosa about the papilla which phenomenon they explained under the "law of contrary innervation."[†] They realized that the vagus and sympathetic fibres, as Senior⁴ has maintained, are hopelessly intermingled below the diaphragm and that this magnesium sulphate reflex involved splanchnic dilation of the duodenum and vagus contraction of the bile passages. The status of this reflex bile-excretory test has evidently not become established, for Auster and Crolin⁵ report bladder retention and liver secretion during magnesium sulphate stimulation and Tsuji⁶ (after cholecystectomy) finds, in a series of human duct- and liver-fistulæ, bile similar to the duodenal bile following magnesium sulphate stimulation. Mann⁷ has reported a specificity of Dakin's solution (intravenously injected) for the gallbladder, by producing cholecystitis of se-

vere grade within 24 hours. Hatieganu's⁸ tests have confirmed that after indigo-carmin has been injected intramuscularly it is recoverable in the bile from the duodenum in 20 minutes. Some such substance that would be opaque to X-rays should be an important aid to diagnosis of lesions of the bile tract.⁹ X-rays of the biliary ducts have been taken after bismuth or barium¹⁰ has accidentally passed into the ducts, and a few of these skiagrams have been reported. Attempts are made through chemical examinations of the blood for urea and glycogen and of the urine for glucuronic acid (Tollens Test) to throw light upon the functional condition of the liver. On the other hand, a more direct approach to the actual condition of the liver substance has been made by Graham,¹¹ Judd,¹² and Ochsner (reported by Smithies¹³) in the removal of pieces of liver for microscopic examination from individuals being operated upon for diseases of the gallbladder. Duplications of this surgical investigation under experimental conditions has brought the added advantages of starting with a cholecystitis of known virulence, of removing liver sections from whatever part of the liver, and whenever one chooses, and of further controlling the extensions of the infection. Valuable clinical and experimental studies have been furnished by Deaver,¹⁴ Archibold,¹⁵ Graham,¹¹ Judd,¹² Mann,¹⁶ Sweet,¹⁷ Rosenow,¹⁸ and others. Good clinical histories undoubtedly remain the most valuable means of interpreting the gallbladder case but the correlation with the history of reliable experimental observations in appropriate cases ought to increase our working knowledge of the liver and pancreas.

Emphasis has been given us by clinicians and by the experimentalists upon the finding of microorganisms in the gallbladder, in the liver, or in the pancreas. From a review of the literature and personal communications dealing with the presence of bacteria in living tissues are the following: Dr. Theobald Smith¹⁹ writes that in order to obtain sterile animal tissues it is necessary to kill the animals in the most quiet way possible in order to prevent the distribution or dissemination of bacteria from either the intestinal or respiratory tract or some more interior concealed focus. His animals were always chloroformed when tissues were desired. He found unsterile tissues from animals that had been dispatched by direct violence. In 1902, Pease,²⁰

* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 18, 1922.

† Sodium sulphate, sodium phosphate, peptone, one-tenth hydrochloric acid, bile, sodium glycocholate and even the mechanical trauma of a duodenal tube under certain conditions may stimulate a flow of liver bile.

while Director of the Anti-toxin Laboratory of the New York State Department of Health, found that the tissues removed by him from animals killed by a blow on the head and cultured by the technic of Smith were invariably contaminated with bacteria and that the reverse was true after chloroforming the animals. Pease's studies upon the bacterial content of fish tissues convinced him that the same tissues showed greater

bacterial growth during the height of digestive activity. W. W. Ford²¹ (1900) in "The Bacteriology of Healthy Organs" states "bacteriological examination of the organs was made in all cases, and the results were somewhat difficult to interpret. In many organs from which bacteria grew the forms isolated could be easily demonstrated in the section, especially mesentericus and staphylococcus. The blood vessels, as a rule, were

TABLE OF CONSECUTIVE HUMAN GALLBLADDER CASES PERSONALLY OPERATED UPON.

Serial No.	Case	Age	Sex	STONES	PATHOLOGY IN ADDITION TO CHOLECYSTITIS	OPERATION
1	L. M.	26	F	Stones	Liver congested and enlarged	Cholecystostomy—C
2	M. H.	30	F	Stones	Ac. appendicitis, perf.; adhesions of intestine	Appendectomy Relief of Adhes.—F
3	L. H.	46	F	Stones	Appendicitis, chr.	Cholecystectomy—C
4	E. G.	24	F	Stones		Cholecystectomy—C
5	G. V.	44	F	Stones	Adhesions of pylorus	Cholecystectomy—C
6	L. S.	24	F	Stones	Cholecystitis, ac., perf.	Cholecystectomy—C
7	I. T.	21	F	Stones		Cholecystectomy—C
8	L. L.	77	F	Stones		Cholecystectomy—C
9	G. J.	42	F	Stones		Cholecystectomy—F
10	Jde J.	32	F	Stones	Glycosuria; acetonuria	Cholecystectomy—C
11	E. F.	30	F		Pancreatitis, chr. Salpingo-oophoritis, chr.	Cholecystectomy—C Salpingo-oophorectomy
12	A. M.	21	F	Stones	Appendicitis, chr.	Cholecystectomy—C
13	C. B.	65	F	Stones	Staph. aureus	Appendectomy Cholecystostomy—C
14	K. K.	49	F	Stones		Cholecystectomy—C
15	N. B.	13	F	Stones	Appendicitis, chr.	Cholecystectomy—C
16	A. W.	48	F	Stones	Hernia, Umbilical Oophoritis, chr. Fibroma uteri	Appendectomy Cholecystectomy—C
17	J. F.	56	F	Stones		Cholecystectomy—C
18	J. E.		F	Stones		Cholecystectomy—C
19	M. S.	34	F	Stones	Appendicitis, chr.	Cholecystectomy—C Appendectomy
20	H. T.	20	F	Stones	Cholecystitis, ac., perf.	Cholecystectomy—C
21	S. K.	21	F	Stones		Cholecystectomy—C
22	E. K.	35	F	Stones	Appendicitis, chr.	Cholecystectomy—C Appendectomy
23	M. J.	72	F	Stones	Hepatitis, chr. Pancreatitis, chr.	Cholecystostomy—C
24	I. R.	60	F	Stones	Pancreatitis, chr. Fibroma uteri	Cholecystectomy—C
p25	E. D.	51	F	Stones		Cholecystectomy—C
p26	A. L.	66	F	Stones	Carcinoma of stomach	Cholecystectomy—C Gastrectomy
p27	L. K.	32	F	Stones	Pancreatitis, chr. Glycosuria; hyperglycæmia	Cholecystostomy—C
p28	L. L.	25	F	Stones	Cholecystitis, ac., perf.	Cholecystectomy—C
29	MO'N	60	F	Stones	Pancreatitis, ac.	*Cholecystostomy—F Drainage
30	R. S.	39	F	Stones	Appendicitis, chr. Pancreatitis, chr.	Cholecystectomy—C Appendectomy
31	B. M.	53	F	Stones	Hernia, Ventral	Cholecystectomy—C
32	F. B.	26	F	Stones	Pancreatitis, Chr. (?)	Herniotomy Cholecystectomy—C

Note: Cases observed in group..... 32
 Cholelithiasis in 31
 Other inflammatory lesions in..... 10
 Carcinoma of stomach in..... 1
 Liver noted enlarged in..... 2
 Pancreatitis, chronic, in (?)..... 7 } 25 per cent.
 Pancreatitis, acute, in..... 1 }

Fatalities after cholecystectomies..... 1 in 25 or 4.0 per cent.
 Fatalities after cholecystostomies..... 0 in 6 or .0 per cent.
 Total mortality, excluding ac. pancreatitis..... 1 in 30 or 3.3 per cent.

* One case of acute pancreatitis for which cholecystostomy was done succumbed two weeks after operation.

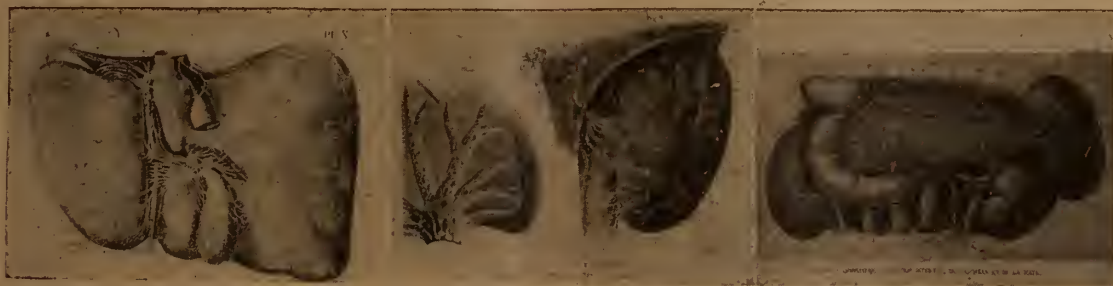
filled with bacteria. In other cases, however, the only evidence of bacteria was the appearance, under the microscope, of many granules, both extracellular and intracellular, especially in the forms of cocci and diplococci, the number of these bodies being relatively great in the organs from which cultures were obtained as compared with a small number of granules seen in sterile organs, and practically none in the foetal. . . . But whatever be the explanation of the facts as a result of the experiments described in this article, it must be concluded that at least 80 per cent (80.6 per cent) of the livers and kidneys of healthy normal animals contain bacteria which are capable of development, provided the proper culture media be adopted, and provided that these organs be cultivated for a sufficiently long time after their removal from the animals used." Meltzer²² reported the recovery of colon bacilli from the portal vein during health; Adami and several French observers²³ have declared that the circulating blood may contain many pathological organisms even in health. Investigations carried out in our own surgical laboratory with the cooperation of the Divisional Bacteriologist, Miss Barton, have shown the presence of bacteria in the blood aspirated from the mesenteric and portal veins and from the liver of an animal anesthetized over a period of 2 hours. The mere finding of bacteria in blood or tissues does not appear, therefore, to constitute in itself a diseased condition for, with proper technic, organisms are recoverable from individuals' tissues during health and during conditions of (traumatic and anesthetic) shock.

During infectious disease, it is generally agreed that the blood and bile may contain bacteria. A review of the pathology of seventy gallbladders removed on the third division, Bellevue Hospital, during the past two years shows infiltration of the walls with serum, leucocytes, or with pus in most every instance with or without ulceration of the mucosæ. Stones were found in 95 per cent of the 27 personal cases of this series. Rosenow and

Rieman have reported the cultivation of bacteria from the walls of such gallbladders and conclude that the infection remains latent within the bladder walls. If this is so, the gallbladder that has once become infected remains (unless removed) a continuous source of re-infection of other tissues.

Obviously, bacteria may be carried into the liver by means of the blood, lymphatics, bile, or by direct extension. Ascending lymphatic infection of the liver was not demonstrated in the author's experiments upon transplantation of the bile duct as it developed in the pyelonephritis after ureteral transplantations.^{23a} Bile cultures from bladders removed at operations are very often sterile. It seems probable that the portal-carried infection is the most common for this channel accords with the finding during health and shock (as described above) and more logically explains the coincidence of cholecystitis with appendicitis, duodenal ulcer, splenic diseases, and other affections within the portal field. W. J. Mayo,²⁴ in his article on the hepatic cirrhoses, writes: "Bacteria are constantly being carried to the liver from the portal circulation. . . . The spleen strains out many bacteria, as in typhoid, and protozoa, especially the plasmodium of malaria and the spirochete of syphilis: but it may be unable to destroy these organisms, and they are sent to the liver for destruction. . . . the liver, losing power to absorb and eliminate diffuse poisons, attempts to encapsulate them, thus introducing connective tissues" as seen in portal cirrhosis.

The gallbladder may be infected, as may the liver, through bacteria carried into it through the general circulation or bile, provided there is damaged tissue within the bladder to start bacterial activity; but the evidence at hand appears to favor the lymphatic extension. Sappey²⁵ has represented these lymphatic connections between liver and bladder elaborately in his atlas, reproductions of which appear below. (Figs. 1-3.) Sudler²⁶ describes the lymphatics as "running over gallbladder . . . from the liver and the



1. (From C. Sappey) Showing arrangement of lymphatics on under surface of liver and gallbladder.

2. (From C. Sappey) Showing "Fig. 3" on section of liver the arrangement of the lymphatics within the portal canals. Portal vein infection, uncared for in the liver, can readily leave by the lymphatic efferents.

3. (From C. Sappey) Showing the regional lymphatic nodes some of which receive lymph from the liver by way of efferents accompanying the ducts within the gastro-hepatic omentum.

EXPERIMENTAL TABLE OF HEPATIC AND PANCREATIC CHANGES FOLLOWING CHOLECYSTITIS (Incomplete)

Exp. No.	Duration (Das.)	Pathology in Liver	In Pancreas
1	4	congestion, acute culture positive	congestion, acute culture positive
2	1	necrosis, diffuse	negative
3	4	infiltration, periportal culture positive	necrosis
15	1	congestion, perilobular	negative
26	7	congestion; infiltration, periportal; choledochitis, acute	necrosis
28	7	infiltration, periportal pus; culture positive	normal culture sterile 72h.
29	7	congestion; ducts necrotic culture sterile 72h.	fibrosis culture sterile 72h.
30	7	ducts necrotic culture sterile 72h.	normal culture sterile 72h.
40	2	necrosis; ducts necrotic pus; bacteria undetermined	cholangitis
41	11	fibrosis; round cell infiltration; cholangitis, acute; culture positive	cholangitis, acute culture sterile 72h.
42	11	infiltration, periportal cholangitis, acute culture sterile 72h.	negative culture sterile 72h.
46	8	infiltration, diffuse; fibrosis; cholangitis, acute bacteria undetermined	not examined
47	6	congestion; culture positive	culture positive
51	6	cholangitis, acute culture positive	negative culture sterile 72h.
45	14	necrosis; infiltration; fibrosis	negative
62	10	necrosis; hemorrhage; infiltration	infiltration, peripheral
63	10	congestion; infiltration, periportal	normal
64	10	hemorrhage; fatty degeneration; cholecystitis continuous with hepatitis	normal

Note: Experiments of 1920 not included. Exps. 1-30 were infected with faecal bacteria; exps. 40-64 with staphylococcus aureus. Cystic ducts were ligated in 62-64. Cultures were taken as indicated above, only.

coats of the gallbladder. . . . They follow the inner side of the cystic duct and end in the mesenteric lymph glands." These lymphatics were shown to be involved, by reproducing calculus-cholecystitis. (See Experimental Table.)

In the course of this work twenty-five animals were used. A foreign body to keep up mechanical injury was introduced into each bladder. Typhoid, faecal bacteria, or staphylococcus aureus were the organisms used to infect the bladders.



4. Acute experimental cholecystitis. Note pus to right, necrosis of mucosa at centre, and compare with high power of wall.

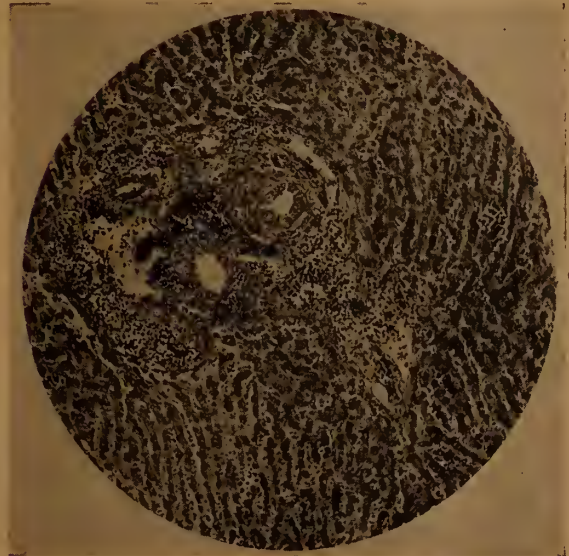


5. Drawing from autopsied animal showing enlarged glands at hilum of liver and about pancreas. (Liver, duodenum, and pancreas drawn upward and outward.)

Fig. 4. In three instances, the cystic ducts were ligated. In the great majority of animals, the lymph glands at the hilum of the liver, along the common duct, or about the pancreas were shown enlarged, as represented in the typical case below. Fig. 5. The sections taken across the ducts at the root of the liver and of the peripancreatic tissues revealed evidence of lymphangitis; and sections of the walls of the bladder and ducts, themselves, in a few instances, showed spaces closely resembling lymphatic channels filled with colorless fluid and leucocytes. Fig. 6. The livers of these animals in many instances showed demonstrable infiltrations of the periportal spaces with lymphocytes or polynuclears. Fig. 7. The organisms injected were in several instances recovered from the liver, and less frequently from the lymph nodes and from the pancreas. Graham¹¹ and Judd¹² agree that in every case of cholecystitis there is an associated hepatitis. The lymphatic route is suggested as the route of invasion of liver from a primarily infected gallbladder. Direct extension appears demonstrable occasionally (See experiments 62-64) but there is no apparent reason why infection should not follow the portal radicles (cystic veins) by way of the portal into the liver as in other infections within the portal region. From the liver, infection probably most often descends into the bladder and pancreas by way of the regional lymphatics. (Fig. 8.)

Pancreatic cirrhosis, according to Elizalde²⁷ and Lacoste,²⁷ is almost invariably associated with cirrhosis of the liver in the cadaver. Judd¹² reports thirty-one gallbladder cases with cirrhosis of the liver and, of these twelve had an associated

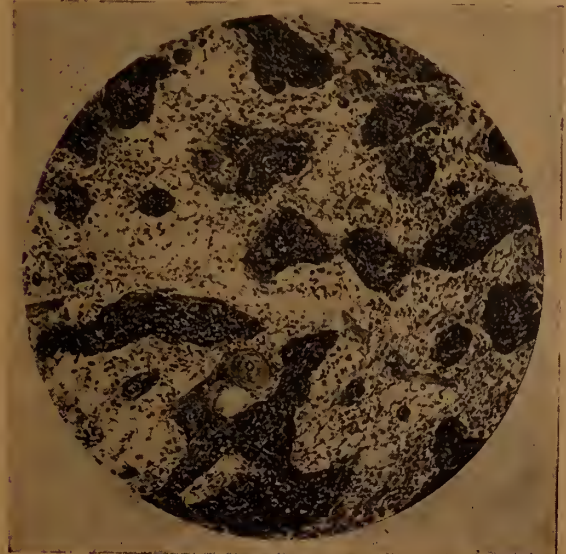
pancreatitis. In the present series pancreatitis was believed to exist in eight out of thirty-two cases or in 25 per cent. (See table). Chronic pancreatitis has been reproduced experimentally, in the animals of the series herein reported. The signs taken to denote "pancreatitis" in vivo: namely, enlarged pancreas or head of gland, "hardening," "more distinct lobulation," or "roughening" with or without enlarged lymphatic glands, were present. The microscopical picture in this type of gland may show congestion or slight round cell infiltration or slight fibrosis but the epithelium remains intact. These findings are similar but much less marked than those



7. Periportal infiltration following experimental cholecystitis. Bile duct fairly well preserved.



6. Submucosa of gallbladder of experimental cholecystitis, showing dilated vessels resembling lymph spaces containing leucocytes and colorless fluid.



8. Lymphadenitis from a duct-gland in acute experimental cholecystitis.

found in the liver tissues of the same animals. This sort of pancreatitis is believed to characterize pancreatic lymphangitis, repeatedly described by Deaver, and to be the product of lymphatic-borne infection from the liver in certain of the cholecystitis cases.

The pancreatitis described by Flexner,²⁸ Flexner and Pearce,²⁹ and Opie³⁰ is more acute and involves the blood supply or secreting epithelium. This type of pancreatitis is met with occasionally after operations about the pylorus and duodenum as in pylorotomy, in the Polyas, or Bilioth 1 and 2 methods. It occurs very often following section through the first portion of the duodenum in the dog.³¹ The characteristics are fat necrosis, free hemolyzed blood in the peritoneal cavity and in the intestinal loops, and pancreatic cell necrosis. High intestinal obstruction and obstruction of the pancreatic ducts appear to be followed, in certain cases, by this form of pancreatitis. Judd¹² and Mann¹² have shown that 1000 mm. of bile pressure is necessary to produce pancreatic injury in the dog and that the possibilities for such a pressure arising are not great in that common duct and pancreatic duct obstruction (which is necessary to maintain such high intrabiliary pressure) appeared possible in but 4.5 per cent of 170 human autopsies. Archibald holds that pathologic bile is more injurious to pancreatic tissue than normal bile (partly because the irritant salts are relatively increased over the mucoid constituent of the bile) and that the relative bile salt increase combined with the toxins is responsible for many instances of pancreatitis accompanying the gallbladder cases.

One sees all grades of pancreatitis with cholelithiasis. It is probably impossible to definitely trace the course of the infection from the gallbladder and liver into the pancreas, once it has occurred. The presence of pathologic glands along the common duct and at the upper border of the pancreas would seem to argue in favor of lymphangitis: the absence of lymphadenitis and the acute signs of severe pancreatitis may point toward bile-carried infection.

The condition of the bile ducts in the experimental series varied from normally appearing ducts to acute suppurative cholangitis; but the most frequent finding was catharrhal cholangitis. (See Fig. 9.) This was based upon sections taken at different levels of the hepatic radicles and bile ducts. On this point, Poppert³² says that his clinical observations lead him to believe that the colicky pains that frequently occur after operation on the bile tracts cannot be due solely to adhesions, but that an infectious cholangitis or cholangiolitis plays a part. We have noted intermittent temperature in some and a persistent rapid pulse with no temperature* in others, with-



9. Section across bile ducts at hilum of liver in acute experimental cholecystitis showing degree of choledochitis.

out obvious reasons to account for them, that we have felt due to infection within the liver substance. One is tempted to believe that there is a small percentage of clinical cases corresponding to the small proportion of experimental cases in which the cholangitis is suppurative and the excretory products are slowly emptied out through the larger ducts. In such cases as these, convalescence may be relatively prolonged, abnormal temperature and pulse-temperature relationships may occur or the duct spasm, described by Poppert, may conceivably arise.

The conclusions arrived at from a comparative study of a hospital series of gallbladder cases, from a series of intentionally produced cholecystitis in animals, and from a review of the literature are that hepatitis is very often associated with cholecystitis, that the infection travels by way of the portal blood, that the liver receives bacteria from the portal field in health and disease, that infection leaves the liver by way of the lymphatics and gives rise to pancreatic lymphangitis relatively often, and that infection is carried through the lumen of the bile ducts relatively infrequently.

From a practical surgical point of view, it is suggested (1) that cholecystitis, once, be regarded as cholecystitis, always, in that latent infection remains within the bladder wall, (2) that cholecystectomy be the operation of choice when the diagnosis of cholecystitis is made (in the absence of definite contraindications), (3) that drainage, preferably through the cystic duct, be instituted at once in proper cases, (4) and that absorbable ties (chromicized gut) be used for the

* Rising pulse and falling temperature often follow excessive loss of bile.

cystic stump to facilitate spontaneous drainage for relief of excessive intraduct pressure.

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URINARY CALCULI.*

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THE exact cause of lithiasis of the urinary tract is yet to be determined. Many theories have been advanced but none of them fits every case. Of a few facts we are certain, there must be the presence of some crystallizable substance in the urine and these substances must be conglomerated to form a calculus. There are certain predisposing factors in the formation of calculi that we regularly encounter. The foremost of these is infection. To determine the reason for the infection may or may not be possible, but there is little question that it is aided and abetted by lack of drainage at any point along the urinary track. Clear evidence of this as a factor is the frequency with which we find infection and vesicle calculi in prostatic obstruction. Just how many of such calculi are formed in the kidney and passed to the bladder it is impossible to say but it seems to be the consensus that most of them are formed in the bladder. We must at the same time admit that there are many patients having prostatic obstruction, residual urine and badly infected bladders without calculus formation. There are also many cases of pyelitis of long standing which show no evidence of stone; On the other hand many cases of renal calculi are seen in which no trace of infection is found. It is possible in these latter cases to think of a previous pyelitis slight and transitory in character yet sufficient to have formed the nucleus for a stone. It would be very comforting indeed to consider all of these calculi of infectious origin, but our present knowledge does not justify it.

Whatever the cause, in order to get the best results in treating a patient suffering with urinary calculus or calculi, a thorough knowledge of the patient is of prime importance. He must be studied carefully, his history completely reviewed, his general physical condition investigated, and the urinary tract thoroughly examined. Most of these patients present evidence of defective elimination, not in their urinary tract alone but also in their alimentary tract; the former depends largely upon the latter.

Most of the stones found are formed primarily in the kidney. They either remain there or else are passed into the ureter and thence to the bladder; if the patient has no obstruction to bladder drainage they are passed out of this reservoir by a very thankful patient particularly if the voyage has been a stormy one. If, however, they become lodged or impacted any-

* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 20, 1922.

where along the tract we as physicians and urologists are called upon to remove them by whatever means seems best.

The symptoms of stone I will not rehearse as they are familiar to you all, in fact, it is my opinion that given any symptoms which attract the average medical mind to the urinary tract, one of the first thoughts is the presence of stone, particularly is this true of hematuria. I will mention later certain symptoms or lack of them, in relation to certain cases which I will cite.

Exact diagnosis is most important and in this we are now aided by the Roentgen ray, the cystoscope, ureteral catheterization, particularly with the opaque catheters and the wax-tipped catheter, along with a general physical examination and review of symptoms.

A stone or stones in the kidney may cause symptoms ranging from the chronic backache depicted so vividly in advertisements appearing in our daily papers, with blood and pus in the urine to no symptoms at all. I would like to cite two cases of the extremes:

A man aged 45 complains of pain in the right loin radiating to the right groin, which he has had for the past year. It would come on in rather severe attacks, preventing him from working, never enough to require an anodyne, relieved by rest, lying on the right side and hot applications. No dysuria, slight frequency at times, but never during an attack of pain. Urine normal. Stone in the right kidney was proven by X-ray and pyelogram. Owing to unmistakable signs of pulmonary tuberculosis he was put on a strict hygienic routine and the removal of the stone deferred. He returned in eight months, much improved in general health, but still having pain in the right side. The stone was removed by nephrotomy and the patient made an uneventful recovery.

To show the lack of symptoms the following case is cited:

A woman aged 52 was referred to me by her physician because she had pus in her urine. He was in the habit of making periodic urinalyses because at the birth of her last child 15 years before she had had eclampsia. This pyuria had persisted for one year or more in spite of all treatment. The patient had no pain and only occasional attacks of slight dysuria which she said she had had as long as she could remember. Examination revealed a large branching calculus in the pelvis of the left kidney.

Providing there are no contraindications stone in one kidney should be removed as it is a constant menace to the kidney containing it and may possibly involve the other kidney by extension of the infection which oftentimes supervenes. As to the advisability of removal of

stones from both kidneys I would say that is largely a matter of judgment. This is also true in decision relative to so-called "silent" stones in the aged.

We are all perhaps more familiar with stones in the ureter because they create such a stir. There is very little question but that many stones pass down the ureter with slight if any disturbance, yet it is equally remarkable what severe symptoms a small calculus can cause while traveling the same route. The term renal colic is, in most instances, a misnomer. What we really have is ureteral colic. If a stone catches at the uretero-pelvic junction and causes obstruction there is a true renal colic, but the pain in this instance is usually more confined to the loin and does not radiate to the groin as it does when a stone is passing down the ureter or becomes impacted in the ureter. There is another point regarding the mechanics of this condition which must be borne in mind, namely this: Our former conception of the cause of the pain is a rough, jagged stone scraping its way down the ureter and each little scrape causing the patient intense agony. The correct conception of this is that only when the stone tarries on its way down and causes complete, though temporary obstruction, do we get pain. In other words it is obstruction to the urinary flow causing distention of the ureter and kidney pelvis that causes pain. I think this is conclusively proved by the fact that we can produce or reproduce ureteral colic by the injection of fluid through an ureteral catheter. We know also that true ureteral stricture will cause pain which is indistinguishable from that caused by ureteral stone, the only difference in conditions being that with the stricture we do not always get complete obstruction to the urinary flow. We are forced to admit that the passage of a rough, jagged stone does cause, oftentimes, perhaps more often than not, enough trauma to the ureter to produce quite a smart hemorrhage, but it is probably not true that this trauma is the cause of the accompanying pain. In view of these facts, remembering that the colic is the effort of the ureter to expel the stone by the pressure of the retained column of fluid back of the stone, what is the best thing to do for the colic? The colic should be relieved in any way that it is possible to do so. Morphine in good, generous doses is probably the best expedient and if this fails general anesthesia must be resorted to. A stone can just as well pass without the colic as with it. There have been developed various mechanical means for hastening the passage of a stone since the more common use of the cystoscope, including the introduction of various fluids beyond the stone with an ureteral catheter if it is possible to



Cut No. 1. Stone in the right ureter.

get there, such as glycerine, oil, benzyl,—benzoate in solution, etcetera. The truly mechanical devices are, dilators, wire loops, electrodes for high frequency and so forth. My own experience leads me to believe that any contrivance that will dislodge the stone and shift its axis in the ureter will accomplish the desired result. This can very frequently be accomplished with a catheter or a bougie. One man (Bugbee) by the use of a small bougie boiled to a high degree of softness has been able to dislodge a stone by winding the end of the bougie around it. Each of these methods is useful and each rises to its highest point of efficiency in the hands of those who are adept and skillful, each with his own familiar method.

When should one cut down on the ureter and remove the stone? I do not believe that this question can be answered by the application of any set rules or indications. Experience shows us that anywhere from 50% to 80% of stones which start down the ureter pass either of themselves or with the aid of the devices which I have mentioned. As time goes on and we become more proficient this percentage should rise. Each case must be studied and all the factors weighed carefully before ureterotomy is undertaken. I believe that every case should be given the benefit of the effort to dislodge the stone and have it pass unless there is settled and complete obstruction of the ureter and the stone now becomes a menace to the kidney from which it has passed. This can be determined by careful, close observation of the patient, by the means we have at hand today.

As I have already said, stones in the bladder



Cut No. 2. Same patient as Cut No. 1; showing stone dislodged and pushed up the ureter with a catheter.

are either those which have passed from the kidney or result from urinary stasis and infection. If small enough they will pass out



Cut No. 3. Stricture of the ureter.

through the urethra, or if not they may be removed by a cystoscopic rongeur. If they are large they may be crushed with a lithotrite or removed by operation. The former is no doubt used less by the general surgeon now than by the urologist, possibly because of the ease with which a stone may be removed by supra-pubic cystotomy under local anesthesia. One word of caution should be injected here, however. Be sure that there is no obstruction at the vesical neck before relying on simple removal of a calculus from the bladder thereby relieving the patient of his symptoms without removing the possibility of another stone in the same location.

Stones in the prostate may be primary or they may be stones which have passed from the kidney and become lodged in this gland. I have seen two cases, one of multiple stone with very little actual hypertrophy, and another in which the stone may have been lodged after passing from the kidney, since, at the time I saw him, he had and eventually passed an ureteral stone. In both cases the stones could be felt by rectum and were easily made out by X-ray.

Calculi may become lodged in the urethra on their way out from the bladder. Recently, I have seen such a case:

A man aged 40 was seen first last September with a stone in the left ureter about 4 cm. from the ureteral meatus. About a month later the stone was right at the meatus where by intravesical dilatation of the meatus through a cystoscope the stone passed out into the bladder from whence it was thought it would pass out through the urethra without further trouble. A few days later the patient was admitted to the hospital with the stone impacted in the urethra just back of the triangular ligament. This could be plainly felt by rectum. It was thought best to try removal through an endoscope. This instrument pushed the stone back into the bladder where it was crushed with the lithotrite.

Two of the most valuable aids in detecting stones in the urinary tract are the X-ray and the cystoscope with ureteral catheter both the leaded and the wax-tipped as mentioned before. Nothing is quite so disappointing as failure to find a stone by the Roentgenogram when the characteristic symptoms and signs are present. This may be due to several factors:

1. Character of the stone, density, chemical composition and position.

2. Improper interpretation of the X-ray plate.
3. Improper preparation of the patient.
4. Poor radiographic technique.
5. No stone is present.

Regarding the radiographic technique I have nothing to say as that is entirely up to the Roentgenologist. In preparing the patient care should be taken that the bowels are thoroughly cleared as far as possible of all fecal material. To obtain this it may be necessary to use catharsis and enemas for two or three days preceding the taking of the X-ray plate. I have had this very clearly demonstrated to me by experience.

It is known that certain stones, such as pure uric acid calculi do not throw a shadow with the X-ray, that others, owing to their lack of density, do not cast a shadow and that others, owing to their position, such as overlying the pelvic bones or being opposite and in front of the transverse processes are overlooked even by the most careful. It is well not to rest with just one picture when there is doubt or no shadow is found. We are aided considerably in locating a stone when the X-ray shows it, by pyelography, when the stone is in the kidney, and by stereoscopy when the stone is in the ureter. In the absence of a shadow, the wax-tipped catheter will frequently prove its presence. It is important in the event of operation for stone in the kidney or ureter, that a Roentgenographic study be made immediately preceding, because stones have a curious habit of passing quietly from the kidney or up and down the ureter.

In conclusion I would say that where there is reason to suspect a stone in the urinary tract or one has been definitely found:

1. Obtain a very thorough knowledge of the patient by all the means we now have at hand.
2. If the stone is found in the kidney, causing symptoms, it should be removed, because it is a menace to that kidney and may be to the other one, but before removal a thorough knowledge of the condition of the other kidney must be obtained.
3. Stones found in the ureter should be given every possible aid to pass on before operation should be attempted provided they are not so large as to preclude further progress.
4. All recognized diagnostic procedures should be used to determine the exact location of the stone and to forecast possible events in the course of treatment.

THE TREATMENT OF BLADDER TUBERCULOSIS AFTER NEPHRECTOMY.*

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TUBERCULOSIS of the bladder is one of the most painful chronic and rebellious maladies encountered by the Urologist. Some cases, it is true, are scarcely painful at all. A large proportion are curable by nephrectomy in this sense, that ablation of the tuberculous kidney relieves the bladder symptoms or makes them at least bearable. But when nephrectomy does not relieve the symptoms (or when the bladder lesions are secondary to genital tuberculosis and therefore not relievable by nephrectomy) the patient's condition is truly deplorable. He (or she) may suffer from frequency of urination that amounts to incontinence of urine. He is liable to attacks of strangury, that grinding bladder spasm which continues for hours together, unrelieved—intensified rather—by the painful extrusion every few minutes of a few drops of urine. His whole life is centered about his tortured bladder.

And the hopelessness of such a patient's situation is but intensified by the results of his appeal for relief. Where the passage of a few drops of urine is torture the passage of urethral instruments is no less than a scream of agony.

Is there nothing we can do to alleviate such suffering? Often, alas, no. But often also, yes. I have taken up a woman suffering from incontinence of urine and left her two years later able to hold her urine all night. I have relieved strangury as well as frequency of urination. And again I have failed. Indeed a review of what I have accomplished in individual cases leaves me in grave doubt as to whether my experience has yet been broad enough to permit of general classification, whether I am able to distinguish the essential from the accidental with sufficient precision to formulate conclusions from which my hearers may profit. But at least it is worth trying, if I confess at the outset that my motive is this. I have read from time to time how certain cases of tuberculosis cystitis are relieved by treatment. Heitz-Boyer has reported a case relieved by fulguration. Hinman, two relieved by continuous irrigation. Hunner relieved a patient of mine by cauterizing the bladder and dilating the ureter. I have done as much by urethral dilatation and by cauterizing the bladder lesions.

Yet no attempt seems to have been made at analysis and synthesis of these various treat-

ments. We can, therefore, at least make a beginning.

First let us state the problem. It is this "The relief of bladder irritability due to tuberculosis and persisting after nephrectomy."

By the word "relief" we understand amelioration, whether permanent or temporary, complete or incomplete. The patient only asks to be relieved. The evidence that we achieve this end is twofold; either the patient abstains from further treatment because the inconvenience of this is greater than such suffering as persists, or he returns for treatment because of relief obtained.

To begin with we must analyze the causes of bladder irritability due to tuberculosis and persisting after nephrectomy. These are multiple and may be included in three groups, viz.,

1. Tuberculosis of (a) bladder; (b) urethra; (c) the remaining ureter and kidney pelvis. (I question whether tuberculosis of the prostate or seminal vesicle occasions bladder irritability unless complicated by surface lesions in the urinary channels.)

2. Mixed infection.

3. Retention, urethral or ureteral, due to tuberculosis, scar, or stone.

The lesions of the bladder itself vary markedly in depth as well as in extent. Postmortem specimens usually show ulcerations of the bladder wall so extensive and so widely infiltrated that, obviously, no local treatment would be likely to benefit them. But among these graver lesions (upon which are commonly superimposed those of the familiar patchy bacterial cystitis) one meets other ulcerations and infiltrations that effect only limited areas of the mucous membrane and the submucosa, and are similar to those of the so-called "Hunner ulcer." Sections made from such ulcerations not infrequently fail to reveal any characteristic suggestive of tuberculosis, and it is, therefore, in every way possible that they are predominantly not tuberculous.

The tuberculous bladder examined cystoscopically during life exhibits the same variety of lesions, but often an intensity of lesions not nearly so great as in the postmortem specimens. One sees spots of patchy cystitis, rough areas suggestive of cystitis cystica, and probably representing infiltration of the mucosa with tuberculosis, definite ulcers large and small, and in some very chronic cases simple granulations projecting from areas of mucosa that show a congestion of only a very small collar around the base of the projection. Such granulomata are apparently almost pure examples of uncomplicated tuberculosis.

The urine from the tuberculous bladder varies in bacterial content to correspond with the lesions. Most patients cease passing

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tubercle bacilli in any considerable number after the first years of the disease, or these are overlooked in the swarm of pyogenic cocci and bacilli of mixed secondary infection. Exceptionally, active uncomplicated tuberculous bladder lesions continue to pour out tubercle bacilli into the urine for many years.

The lesions of the urethra may be but the wee granulomata described by Pelouse. More often we find an extensive tuberculous infiltration of the prostatic urethra, its surface inflamed, and here and there ulcerated. Such lesions may be found occasionally here and there down the whole length of the urethra even as far as the meatus (where I have four or five times seen tuberculous ulcerations).

Secondary infection of these tuberculous urethral lesions may result in periurethral abscess and fistula. Even when these do not occur the lesion, healing in some spots, extending in others, leaves the posterior urethra irregularly rigid, strictured and ulcerated.

The urethral and renal lesions are similar in nature and need not be enumerated in detail.

Secondary phosphatic stone may form in ureter, bladder or urethra and add to the patient's woes.

Add to these complex local lesions the infinite variety of tuberculous and other lesions that may afflict other of the patient's organs, consider that local treatment may excite acute tuberculous and mixed infection in prostrate and epididymis, appreciate the exquisite sensitiveness of the tuberculous urethra and bladder, and we realize how such lesions may defy treatment.

But a further analysis reveals the possibility of relieving certain of the lesions. Stone may be removed, stricture stretched or cut and secondary infection at least ameliorated in some instances without exciting unduly the irritability of the tuberculosis. Or the tuberculosis itself may be attacked by localized cauterization of small isolated bladder lesions, on condition that there is no very active secondary infection.

These possibilities are best illustrated by case reports. I omit my failures. They are approximately as numerous as my successes.

Relief of Retention.—Every one who does cystoscopies must recall occasional instances of the relief of the symptoms of tuberculous cystitis by the passage of the cystoscope. As a rule the examination causes a temporary exacerbation of the symptoms; exceptionally quite the opposite. I once cystoscoped a patient who was urinating very frequently and with great pain. The examination revealed tuberculosis of the left kidney and of the bladder. It also

revealed the fact that the patient had about 500 c.c. of residual urine. This was undoubtedly due to a rigid bladder neck, for immediately thereafter the retention was relieved and as a result the bladder symptoms so much alleviated that the patient refused to consent to nephrectomy or indeed to any other treatment. Among the cases submitted by Dr. Chetwood and myself a decade or more ago to the Chetwood operation, division of the bladder neck by galvano-cauterization, are several tuberculous patients whose symptoms were greatly lessened.

Lithotomy.—A patient recently applied to me for relief of pain in his bladder in spite of the fact that seven years before he had submitted to suprapubic drainage under the diagnosis of tuberculosis of the left kidney and bladder. Radiograms revealed areas of tuberculosis involving the lower half of the left kidney and three stones distending the prostatic urethra. Through his suprapubic fistula I was able to examine with the cystoscope a bladder distorted by scar, but showing very little inflammation. Indigo carmin was excreted in what seemed a normal concentration from the right ureter. Bacilli and cocci were found in the urine, but no acid fast organisms. The stones were readily extracted through the suprapubic fistula. A non-tuberculous epididymitis followed and was relieved by epididymectomy.

Relief of Cystitis Due to Secondary Infection.—In a certain proportion of cases the secondary lesions, due to pyogenic organisms, gradually supercede the lesions of bladder tuberculosis. This may be suspected when the urine swarms with the organisms in question. I do not doubt that such was the type of the two cases that Hinman relieved by continuous irrigation. The following case belongs in this category:

Mrs. C. H. First seen July 8, 1913, giving a history of three pregnancies with severe eclampsia during the first one, but no incidents during the second two. Fistula in ano operated upon in 1896 and 1906.

Present illness for a great many years. Even before her marriage she had had an irritable bladder which had not bothered her conspicuously, but during a few months before consulting me she had to urinate almost every hour, day and night, with a good deal of pain and occasional passage of blood.

Physical examination revealed a low right kidney with quite a nodule on its lower pole. The left kidney was not palpable. The ureters were not palpable by vagina. Cystoscopy was permitted only after the administration of ether, and showed a bladder much inflamed and covered with thin flakes of fibrin. The

right ureter orifice was lost in scar and granulations; the left involved in the inflammation and somewhat rigid. Indigo-carmin was injected intravenously and did not appear in 15 minutes from the right ureter, while it was seen in 9 minutes coming strong from the left. Neither ureter was catheterized satisfactorily. The X-ray showed a cheesy kidney low in the right loin. The urine contained many bacteria, none of them acid fast.

She subsequently had a right nephrectomy at the Woman's Hospital. The kidney was reported as tuberculous. After a very slow healing of the wound and substantially a year in convalescence, she gained some weight and her bladder became less irritable. But her bladder symptoms soon recurred.

When I saw her next, on May 26, 1919, six years after nephrectomy, she had recently undergone a second operation for the removal of her appendix and the freeing of adhesions about the right side of the abdomen. The result of this was that her pains were worse. She was urinating every ten to fifteen minutes night and day with a good deal of incontinence of urine. The urinalysis showed much blood and pus, but only a trace of albumin and but one granular cast. Another specimen contained very little pus, many cocci and bacilli. Phenolsulphonephthalein output 27% in first hour, 13% in second hour. Repeated examinations for acid fast bacilli were negative until on June 19, 1919, two small clumps were found. The non-acid fast bacilli and cocci were always numerous. Cystoscope showed many ulcerations about the bladder; ureter catheter with 8 F. wax bulb passed up left ureter, hung at 3 cm. from the orifice, but passed up and beyond this quite freely. She was daily washed with argyrol, an attempt was made to dilate the ureteral constriction. After the second dilatation the bladder was very much more irritated, and she had practically total incontinence of urine day and night.

On November 18, local treatment by argyrol was stopped, as it seemed to do no good, and mercurochrome substituted, two drams of the 1% solution being injected daily. After one month of this treatment without any further dilatation of the ureter she found she could discard her urinal without danger of incontinence, and could hold her urine at night. She went through the winter in very good condition with a bladder injection of mercurochrome once or twice a week. She held her urine almost all night and for two or three hours by day. But in 1921 the old pains and frequency began to return and she was much worse. Accordingly, April 4, 1921, she entered St. Vincent's Hospital where I cystoscoped her and found irregu-

lar areas of ulceration in two or three places in the bladder vault, and behind the right ureter orifice. All of these were well cauterized through a straight tube urethroscope with swabs dipped in pure liq. hydrargyri nitratis (N.F.). The cauterization was repeated in June, 1921, since which time she has had no treatment, and as a result two extraordinary things happened. In the first place she was relieved of her discomfort. In the second place a slight irritability to the mercurochrome which she had begun to exhibit before this operation became much more pronounced so that she alleged that any injection of mercurochrome made her very much worse, whereas previously it had done her a great deal of good. She decided that she was better off without any treatment whatsoever, and since that time has remained comfortable, though pus and bacteria persist in the urine. She holds her urine all night, and three or four hours by day. She was last seen in February, 1922, ten months after the first cauterization.

I am still in doubt whether this woman's improvement was due to dilatation of her urethra or cauterization of her bladder ulcers, and the following cases have not solved this doubt, though they have been treated with the notion that the liq. hydrargyri nitratis was the element:—

J. S., aged 36. In 1918, I removed a left pyonephrotic tuberculous kidney within a year of the onset of his bladder symptoms. No tubercle bacilli were ever identified in his urine before operation. Pathologist reported the kidney tuberculous. The bladder symptoms were relieved for one year and then relapsed. When I next saw him, in October, 1921, three years after his operation, he had been urinating every hour, day and night, for two years, his urine contained staphylococci, he weighed 120 lbs., his remaining kidney was functioning well.

On October 4, 1921, and again on January 4, 1922, I cauterized ulcerations on the fundus of his bladder, the first time under spinal, the second under local, anesthesia. After the first treatment the urinary intervals lengthened to two hours, after the second to three. He has gained 18 lbs. in weight, and works in my wards as an orderly, suffering no great inconvenience from his bladder symptoms.

Mrs. E. A., aged 37 years, when first seen in September, 1921, she gave a history of left nephrectomy for tuberculosis five years before. Sinus in loin still open. Injection of this with bismuth showed a branching sinus, communicating with the splenic flexna of the colon by a minute opening. Urine showed staphylo-

cocci. Urination every 15 minutes, night and day.

On September 15, 1921, cystoscopy under local anesthesia. Bladder so irritable that nothing could be done. No improvement resulted.

On October 8, 1921, under spinal anesthesia, I burned three ulcerated areas in fundus and vault of bladder. Thereafter she was able to retain her urine for two hours.

On January 9, 1922, her symptoms having relapsed, her ulcers were again burned, and she was once again relieved. Since then I have twice explored her loin fistula under general anesthesia. It is no worse and no better.

As for the purely tuberculous lesions of the bladder I have treated but one case with no noteworthy improvement.

My clinical experiences may, therefore, be summarized by the statement that the persistent grave symptoms of bladder tuberculosis are often not exclusively due to the tuberculosis as such, but rather to secondary infections or retentions and may at least be markedly ameliorated by dilatation of stricture and by the treatment of the bladder lesions topically through a straight tube urethroscope or cystoscope as though they were ulcers of the Hunner type.

THE USE OF RADIUM IN THE TREATMENT OF UTERINE BLEEDING OTHER THAN CANCER.*

By HARVEY B. MATTHEWS, M.D., F.A.C.S.,
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THOUGH the use of radium in uterine bleeding of non-malignant origin is by no means universal, it has, without a doubt, established a definite and valuable place for itself in the treatment of this very annoying and oftentimes extremely depleting symptom. It constitutes, in fact, the treatment of election in a large proportion of these cases and while I do not believe radium should entirely supplant surgery in the management of these cases, I do not hesitate to state that hysterectomy, or other more or less mutilating operations for the relief of intractable uterine bleeding due to uncomplicated fibroids, myomas, fibrosis uteri, chronic metritis and the so-called idiopathic, myopic or essential uterine bleeding, is absolutely contra-indicated. Radium in such cases has very little morbidity and no mortality and may be expected to succeed in completely controlling the bleeding in from 98 to 100% of the cases. If these statements are true, and I believe they are, it would seem that

every gynecologist and every general surgeon doing gynecology should have access to sufficient radium—100 mg.—to carry out this form of treatment. Furthermore, as time goes on, the public will know of the value of radium in such cases and they are certainly going to demand its use more frequently. Remember, gentlemen, hysterectomy has a mortality of from 3 to 5% in the best hands, while radium has none. Remember also that hysterectomy has a considerable, often a very considerable morbidity while radium has little or no morbidity and consequently the economic factor in the matter of time lost is certainly very much on the side of radium. On the other hand surgical intervention will always remain the treatment of choice in dealing with very large fibroid tumors of the uterus, *e. g.*, size of 4 to 5 months pregnancy; those of very rapid growth; pedunculated sub-peritoneal tumors; tumors complicated by chronic pelvic inflammatory disease; tumors complicated by ovarian cysts or inflammatory lesions of the adneda; and those suspiciously undergoing malignant changes.

It must be apparent from the foregoing, that the proper grouping and selection of cases is the most important adjunct in connection with the successful use of radium. In the Gynecological and Obstetrical Service of the Long Island College Hospital of Brooklyn we have earnestly tried to "pick our cases," using every means at our command for arriving at a correct diagnosis. This we believe to be the only fair way of determining just how useful radium really is.

In choosing the cases that are suitable for radium treatment the following essentials must be recognized: (1) an accurate diagnosis must be made in every case; (2) a proper selection of case—*i. e.*, it must fall in Group I, II or III (see Table I); (3) a careful consideration of dosage.

In the matter of making a correct diagnosis in each and every case there is certainly grave doubt but unless a diagnosis can be made with a fair degree of certainty do not use radium. Naturally, in the presence of grave lung, heart or kidney complications or some one of the severe forms of anæmia, radium may be used even though there are very evident contra-indications to its use. Now, as regards the proper selection of cases we have a much easier task. The one all-important question which always has to be answered is: Is this particular fibroid or fibrotic uterus etc. complicated by any pathologic state that contra-indicates the use of radium? Since at this point contra-indications to the use of radium in the cases under consideration becomes of the greatest

* From the Dept. of Obs. and Gyn., Long Island College Hospital, Dr. John Osborn Polak, Director.

* Read at the annual meeting of the Medical Society of the State of New York, Albany, N. Y., April 18, 1922.

TABLE I

Group I	Group II	Group III	Total
Fibroid Fibro-myoma Myoma	Fibrosis-uteri Chr. Metritis Arterio-sclerosis	Idiopathic bleeding Essential bleeding Myopathic bleeding	
54	47	7	108

import, perhaps enumeration of these would not be out of order. They are:

- (1) Chronic pelvic inflammatory disease.
- (2) Ovarian cysts.
- (3) Predunculated sub-peritoneal tumors.
- (4) Large fibroid tumors—size 4 to 5 months pregnancy or larger.
- (5) Tumors of very rapid growth.
- (6) Tumors undergoing malignant degeneration.

The third group of cases, viz.: the idiopathic (see Table I), requires no special elucidation, since the diagnosis is fairly easy and certain and there are no demonstrable pathological lesions *per se* or surrounding the bleeding uterus. This is the one class of cases that proper radiation "works wonders" and saves the uteri of these unfortunate little girls of from 12 to 18 years of age who might otherwise be subjected to hysterectomy. We had 7 of such cases (Table I) in our series, 5 of whom were cured by one seance of from 300 to 600 mg. hrs. of radium, while one case had 1600 mg. hrs. and one had 1200 mg. hrs. before bleeding was controlled. All this group are menstruating properly up to date. That brings up a very important question, viz.: Are these girls going to be fertile? So far we are not in position to answer this question. None of these cases in the series under consideration have become pregnant after irradiation, although several cases have been reported, notably Stacy from the Mayo Clinic, 4 cases;

Polak, 1 case; J. G. Clark, 1 case, etc., after small "doses" of from 200 to 400 mg. hrs.

DOSAGE.

As regards dosage in our series of 108 cases reference to Table III will show in detail the amount of radium and the time of exposure. Eighty-two cases had 1200 mg. hrs. and the ages of these cases ranged from 36 to 54 years of age. Where the preservation of the menstrual function is necessary, smaller dosage had better be given at first followed by a second or more exposures until bleeding is satisfactorily controlled. In the very young patients 300 to 600 mg. hrs. should be used for the initial dose and a second exposure used or not as the case requires. In the cases at or past the menopause 2400 to 3600 mg. hrs. may be used for first application.

The technique we have employed is about as follows: The patient is prepared as for the usual vaginal plastic work. Gas-oxygen, oxygen, oxygen-ether or morphine scopolamine anesthesia is used. The uterine cavity is curetted to rule out the possibility of cancer; and the estimated amount of radium element, screened with silver and brass or silver, brass

TABLE II
AGE INCIDENT OF COMBINED GROUPS

12-24	25-34	35-44	45-54	55-64	Total
4	10	57	34	3	108

Of these cases, 91 were between the ages of 35 and 54 years. The youngest of the group was 12 and the oldest 62 years of age.

TABLE III

DOSAGE IN MILLIGRAM HOURS

50 mg. 24 hr.	25 mg. 24 hr.	75 mg. 24 hr.	50 mg. 30 hr.	100 mg. 24 hr.	75 mg. 30 hr.	100 mg. 30 hr.	50 mg. 36 hr.	25 mg. 10 hr.	50 mg. 12 hr.	75 mg. 48 hr.
1200 mg. hr.	600 mg. hr.	1800 mg. hr.	1500 mg. hr.	2400 mg. hr.	2250 mg. hr.	3000 mg. hr.	1800 mg. hr.	250 mg. hr.	600 mg. hr.	3600 mg. hr.
82	8	8	2	1	1	1	1	1	1	1

Of these 108 cases, 82 had 50 mg. for 24 hrs.—50/24 mgr. hrs.—which amounts to $\frac{3}{4}$ of all cases treated.

TABLE IV

DOSAGE IN GROUP I

50 mg. 24 hr.	25 mg. 24 hr.	75 mg. 24 hr.	50 mg. 36 hr.	75 mg. 48 hr.	50 mg. 12 hr.	75 mg. 30 hr.	100 mg. 24 hr.
1200 mg. hr.	600 mg. hr.	1800 mg. hr.	1800 mg. hr.	3600 mg. hr.	600 mg. hr.	2250 mg. hr.	2400 mg. hr.
40	5	4	1	1	1	1	1
							Total, 54

TABLE V
DOSAGE IN GROUP II

50 mg. 24 hr.	25 mg. 24 hr.	75 mg. 24 hr.	50 mg. 30 hr.	25 mg. 10 hr.	100 mg. 24 hr.	Total
1200 mg. hr.	600 mg. hr.	1800 mg. hr.	1500 mg. hr.	250 mg. hr.	2400 mg. hr.	
38	5	1	1	1	1	47

TABLE VI
DOSAGE IN GROUP III

50 mg. 24 hr.	25 mg. 24 hr.	25 mg. 10 hr.	Total
1200 mg. hr.	600 mg. hr.	250 mg. hr.	
3	2	2	7

and rubber, depending on the exigencies of the case, is introduced into the uterine cavity and kept in place by a firm cervical pack of narrow plain or iodoform gauze. The bladder and rectum are now further protected by placing rubber sheeting over the anterior and posterior walls of the vagina after which the vagina is tightly plugged with plain 2 or 3 inch gauze packing. The bladder must be emptied by catheter every 8 hours to prevent marked distention as overdistension of this viscera causes it to be brought, in many instances, into too close proximity to the radium. Likewise the rectum must be thoroughly and adequately protected for the same reason. We have had no bladder burns and only one rectal burn, which, fortunately, was not of serious import as it healed, as any rectal ulcer, under proper treatment.

SYMPTOMS.

Practically all radium cases have nausea and vomiting. In our series, 95% had nausea and vomiting from 24 to 48 hours after irradiation, but since the majority of these cases had morphia alone or in combination with gas-oxygen, this fact, perhaps, would account in part, for some of the nausea and vomiting. This symptom was not in any of our cases alarming and as soon as the nausea ceased the patients were very comfortable. Quite a few in our service had more or less pain which we have attributed to the diagnostic curettage or other manipulatory trauma incident to the insertion of radium—*e. g.*, dilatation of a closed cervix. However, in an uncomplicated case with a patent cervical canal where no curettage is done, there is absolutely no pain following the usual application of radium. In the few instances of severe pain followed by slight rise in temperature we have felt that there was present an old parametritis endocervicitis or metritis and exposure to radium had caused a mild acute exacerbation of the old quiescent lesion. However, if sufficient care had been exercised in the selection cases, such complications will seldom arise.

Leucorrhœa has been a rather constant symptom in our cases, lasting 4 to 8 weeks after irradiation. Often for the first week or two there is a watery, brownish leucorrhœa—perhaps actually tinged with fresh blood—but later appears the characteristic white or yellowish vaginal discharge which continues from 4 to 6 weeks, after which it ceases.

The menopause symptoms are variable. In the main they do not differ from the surgical menopause, except perhaps in some instances they are less severe. These patients are so elated over having escaped an operation, yet have had their bleeding controlled that such symptoms as arise from cessation of menstruation and ovulation are borne with great fortitude.

RESULTS.

The results in this series of cases have been very gratifying. In the final analysis of 52 cases of fibroids, 47 cases of fibrosis uteri and 7 cases of idiopathic uterine bleeding, radium has affected a cure in every single case, without mortality and with very little morbidity. The majority of these women were home at the end of a week. All of these cases have remained cured for from 6 months to 5 years and, so far as we have been able to ascertain, none have been operated by other surgeons for return of uterine bleeding. The 2 cases hysterectomized—one of Dr. Polak's and one of my own—were the only cases that came to operation after irradiation. Both these cases continued bleeding following a single large dose of radium and after multiple transfusion, rest in bed, tonics, fresh air and extra food, etc., it was thought best to perform hysterectomy rather than try more radium. It should be kept in mind that these cases were desperate, having bled profusely over a considerable period of time and therefore suffering from a profound secondary anæmia. That we were in error in the management of these 2 cases I am at the present time convinced and I am sure that had we such a case today we would continue the use of radium, using very large and repeated doses, and without a doubt finally, completely control the bleeding and save the patient's life.

But notwithstanding, if, by the methods herein outlined, uterine bleeding of non-malignant origin can, by the use of radium, be absolutely controlled in 98% of the cases without mortality and with very little morbidity, we believe any operative procedure entirely out of order.

From the foregoing study we may formulate the following conclusions:

(1) That radium has a very definite place in the treatment of certain forms of intractable

uterine bleeding of non-malignant origin. Ninety-eight per cent of the cases in our series of 108 cases were completely controlled.

TABLE VII
RESULTS

Group I	Group II	Group III
Cured by one exposure	Cured by one exposure	Cured by one exposure
49 or 94.2%	43 or 91.7%	5 or 71%

Of the 5 cases of Group I not relieved by the first exposure, 2 of these died following hysterectomy 3 and 12 weeks respectively after radiation because of continued bleeding, and 3 cases received each a second exposure before bleeding ceased.

Of the 4 cases of Group II, 3 were cured after 2 exposures of 1200 mg. hrs. each; and 1 had 3 exposures totaling 4650 mg. hrs. extending over a period of 18 months before bleeding ceased.

Of the 2 cases of Group III, 1 had 2 exposures of 800 mg. hrs. each within 6 weeks, after which bleeding ceased and menstruation has been normal for the past 6 months; 1 had 2 exposures of 400 mg. hrs. and 800 mg. hrs. at an interval of 6 months after which menstruation has remained normal for 1 year.

(2) That radium in properly selected cases, has no mortality and very little, if any, morbidity.

(3) That radium therapy has very definite contra-indications and the selection of cases suitable for irradiation should remain in the hands of those who have had special training in gynecological diagnosis as well as radium therapy.

(4) That for the purpose of excluding the possibility of cancer, a diagnostic curettage should precede every intra-uterine application of radium.

(5) That from 100 to 150 mgs. of radium element is sufficient to obtain satisfactory results in the group of cases under consideration.

(6) That the average "dose of radium" for those women over 35 years of age, except in certain special cases, should be 1200 mg. hrs., while for those under 35 years, the "dose" should vary between 200 and 800 mg. hrs.

(7) That the indiscriminate intra-uterine use of radium cannot be too strongly condemned, inasmuch as such practice can only bring discredit to a very valuable therapeutic agent.

INCIDENCE OF MISCARRIAGE IN PRIVATE OBSTETRICAL PRACTICE WITH A DISCUSSION OF THE PATHOLOGY.*

By JAMES LINCOLN HUNTINGTON, M.D.,
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THE late Dr. Edwin B. Cragin in his chapter on abortion says: "This term, however, has been so long associated with the criminal operation that it is distasteful to patients, who speak of the occurrence as a miscarriage, and it is always wise for the physician in the presence of his patient to use the latter expression." And so I have deliberately used the term "miscarriage" in the title of this paper, not only to emphasize that these are private patients that I am reporting, but also out of respect for their misfortune. From now on I will use the medical term "abortion."

The accepted causes of abortion are so many and so varied that I want briefly to enumerate some of them as they occur in our textbooks and in monographs bearing upon this subject.

Dr. Cragin divides the causes as follows: (a) Traumatism; (b) Maternal Causes; (c) Foetal Causes; (d) Paternal Causes.

Under Traumatism he includes "all forms of violence—blows, falls, lifting heavy weights, excessive action of the abdominal muscles, as in severe vomiting, coughing or sneezing, excessive or violent intercourse, the introduction of instruments, etc."

Under Maternal Causes, Cragin makes three subdivisions:

1. Causes acting through the nervous system, as mental shock, etc.

2. Causes acting through the blood, namely Toxæmias of all kinds, including drugs and gases.

3. Local Causes—and here he places endometritis as the commonest cause of miscarriage. Added to this are posterior displacements, adhesions and lacerations, as well as tumors of the uterus, and finally placenta prævia.

Under Foetal Causes he puts "any disease of the foetus or foetal membranes destroying the life of the foetus." Then he mentions hæmorrhage into the placenta, degeneration of the chorion, torsion of the cord, etc.

Under Paternal Causes he mentions, first of all, syphilis, constitutional exhaustion from alcoholic or venereal excesses, from tuberculosis or other wasting disease.

Royston, in a study of the history of 164 patients, considered the toxæmias to play a most important rôle but also mentions cross country walking, hard housework, including moving

* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 20, 1922.

furniture and laundry work, as responsible for a very few.

Schumann, in 1917, writes more definitely in regard to antenatal pathology. He considers that abnormal growth of the foetus is due primarily to faulty implantation of the ovum.

As a striking example of this, he quotes Dr. Mall to the effect that 7% of all uterine pregnancies contain pathological embryos, while in tubal pregnancies 96% show the embryo diseased. Besides faulty implantation he mentions morbid processes in the amniotic sac, imperfect separation of the amnion from the body of the embryo and adhesions from bands of amnion.

G. L. Streeter, Mall's successor as Director of the Department of Embryology of the Carnegie Institution at Washington, writes as follows: "The occurrence of defective germ-plasm has not been generally recognized. As far as I know, this laboratory is the only place in which attention has thus far been paid to it. It is true that Dr. Mall originally thought that pathological ova were largely the result of faulty implantation and diseases of the endometrium, but we have gradually come around to see that this is not the whole explanation, and that a large number of abortions must be attributed to defective germ-plasm. Our evidence of this in man rests thus far only on statistical studies. In other animals, however, it has been possible to confirm it by actual observation. Dr. Corner, working in association with this laboratory, has demonstrated the occurrence of defective ova in the uterus of the pig where the endometrium and tubes were absolutely normal and one could not speak of faulty implantation or disease of the genital tract. He has found that out of a litter of ten pigs usually two or three ova prove to be defective and form the same kind of pathological embryos that we find in the human. That the genital tract is normal is proved by the fact that the other ova of the litter go on to normal development. The occurrence of faulty ova has also been shown in the opossum by Hartman, of the University of Texas. Furthermore, there is the periodic phenomena of the lack of vitality in the hen's egg. During the fall, in the off-season, perhaps only two out of a dozen eggs are capable of maturing to healthy chicks; the others are arrested at various stages along the line and the stunted and pathological forms found in the human are duplicated. When we speak of defective germ-plasm, it is of course understood that it may be either maternal or paternal or may result from an incompatibility of two germ-cells which are otherwise normal."

Robertson, in a series of observations with

ferrets, and again with horses, arrives at the following conclusions:

(1) A considerable amount of prenatal death is normal in mammals.

(2) It is due partly to the inability of the gametes of certain individuals to unite with one another and partly to the production of abnormal zygotes by the union of certain gametes.

(3) The inability to unite and the production of abnormal zygotes when union occurs, are not dependent on disease or abnormal environment of the parents.

(4) When prenatal death occurs, as it does in many cases after the zygote has become attached to the decidua, the death must be followed by the absorption or the abortion of the zygote.

(5) Abortions which follow normal prenatal death are themselves normal and the changes found in the uterine mucosa in such cases are regressive and useful, and not inflammatory or degenerative.

Reynolds and Macomber in their paper on "Relative Fertility" recently reported, say: "In addition to the functional disturbances in the male and female elements, it is possible, perhaps because of them, to have functional disturbances of the fertilized ovum. This is a subject which has not been as yet thoroughly investigated, but for which there is accumulating a great deal of clinical evidence."

So much for the available data on the etiology of abortion.

The question of the frequency in private practice is of great interest and of great importance. Dr. Cragin says: "In 1,000 consecutive patients in the author's private practice who have been pregnant 371 have had one or more miscarriages—a little more often than one in three (although it is impossible to tell how many of these were induced.) In these 1,000 cases 53 miscarried in their first pregnancy or over 5%."

Slemons says: "Of the pregnancies which come under the observation of physicians, approximately 20% end in miscarriage."

Titus, reporting from the Johns Hopkins Clinic, finds an incidence of abortion of 5.76%, but in this series he only classed as abortions those cases that occurred at or before the end of the fourth lunar month.

A few years ago, being anxious to prove to a patient that her miscarriage had been inevitable, I sent the products of conception to the Carnegie Laboratory of Embryology in Baltimore and the report that I received was so satisfactory that I have since sent, in practically every case of abortion, the foetal tissues to Baltimore for examination. As a result of

these findings, I wish to make the following report:

From the date of sending my first embryo to the Carnegie Laboratory until the date of my last miscarriage, I have had 398 pregnancies under my care in private practice. Thirty-nine, or almost exactly 10%, of these pregnancies terminated or were interrupted before the period of viability—the end of the 28th week.

The results from the careful examination of these specimens are as follows:

Twenty-one were reported definitely as due to defective germ-plasm.

Three were probably due to defective germ-plasm.

One was due either to defective germ-plasm or arrested development due to extreme retroversion.

One the death of the foetus was apparently due to extreme fibroid degeneration of the uterus.

One degeneration of foetal tissue apparently due to nephritis.

Twelve foetal tissues apparently living and normal at time of abortion.

Thus 27 were inevitable abortions at the onset of symptoms as the foetal tissues were lifeless when the bleeding began.

Let us take up in detail these last 12 cases, where the foetus was alive at the time of abortion.

One was immediately after appendectomy with drainage.

One D. & C. for continued bleeding.

One following rupture of amniotic sac by artificial means.

Two placenta prævia.

Three therapeutic abortion.

Four unexplained.

The patient that aborted after appendectomy with drainage was 22 weeks pregnant. The appendix had ruptured before the diagnosis could be made and a drain was put in touching the uterus. Three days later uterine contractions began and foetus and placenta were promptly expelled.

I have no hesitation in classing the next case as a criminal abortion although just the means used the patient never would admit. She was 17½ weeks pregnant and was sent into the hospital with amniotic fluid leaking away, in considerable pain but with no temperature. Uterine contractions soon began and the patient expelled foetus and placenta without any assistance.

The 2 cases of placenta prævia are as follows: The first patient had been bleeding for several weeks, a little almost every day, in spite of rest in bed. Examination showed placenta prævia and uterus was emptied by

introducing a bag. The patient was 22 weeks pregnant. The second patient gave almost exactly the same history only just 4 weeks earlier—18 weeks pregnant.

The next case was a patient 11 weeks pregnant, who had been bleeding a little practically every day for three weeks. She was pale and had a blood pressure of only 88, systolic, and was in a serious nervous condition. After careful consultation, the uterus was emptied of a living, normal foetus. It is quite possible, however, that this patient might have gone on to term provided we could have kept her in bed for many weeks.

The next 3 cases were therapeutic abortions:

One at 8 weeks for serious cardiac disease.

One at 10 weeks for progressive arthritis.

One at 18 weeks for advanced nephritis.

This leaves 4 pregnancies that terminated before the 28th week with the foetal tissues normal and alive. Two patients each had two pregnancies with the following histories:

The first patient had a history of a previous pregnancy some 8 years ago, the uterus being emptied about the 8th month for toxæmia—the baby living only a few hours. Since this experience she had had periodic attacks suggesting epilepsy. Associated with these attacks was serious intestinal trouble for which she had had an extensive resection of the colon with some improvement. Her pregnancy seemed to be progressing normally until about the 12th week, when on awakening one morning she noticed that she was flowing. She stained about four napkins that day, but by staying quietly in bed, the bleeding entirely subsided. Again, just about 4 weeks later, she noticed, after hurrying for a train, that she was staining a little. She was immediately put to bed, but in spite of every precaution the staining continued. About 1 week later uterine contractions began, and the bleeding became so profuse that it was necessary to empty the uterus before the foetus was expelled. Examinations showed normal, living foetal tissues of a development of 17 weeks.

She had two normal periods, the last being July 1st when she again became pregnant. Every precaution was taken to prevent any shaking up. She led the quietest possible life, lying down a greater part of the time, when not actually in bed. She did have a return of her epileptiform attacks which disturbed her greatly. She stayed in bed practically all the time from the 15th week on because of her previous history and was quite free from any nervous symptoms. Early in the morning of November 12th she discovered that she was bleeding. She was sent at once to the hospital where in spite of morphia she began to have increasing flowing and uterine contractions set

in. Again the uterus was emptied and the products of conception removed manually. These proved to be foetal tissues of 18 weeks' development, normal and living up to the time of abortion. A Wasserman test was done, her renal function estimated and her blood nitrogen determined but nothing could be found to account for the abortion except the possibility of pelvic adhesions which seemed to be definitely present in the right vault. The fact that the uterus emptied itself at nearly the same time in both pregnancies would tend to bear this out.

The second patient, when about 5½ months pregnant, was on a house party in the country. She fell backwards from a sleigh into a snow-drift, and shortly afterwards noticed a slight discharge with considerable abdominal discomfort. She did not give in to this for several hours, when she found that her symptoms were so alarming that a local physician was called in and she promptly miscarried. The products of conception were not saved but the physician considered them normal and living up to the time of abortion.

She again became pregnant some three months later. She was kept very quiet this time, staying in bed at the time of her menstrual cycle and all seemed to be progressing normally. Late in the evening, without any warning, she began to have cramp-like pains and shortly after went into active labor. The uterus was emptied manually when sufficiently dilated. The products of conception proved to be normal, living foetal tissues of 24½ weeks' development. Her Wassermann test was negative, renal function normal, as was the blood nitrogen. The patient has an enlarged thyroid gland but has never had any symptoms of hyperthyroidism.

This ends the series of abortions where the foetal tissues were alive up to the time of abortion.

Let us now turn to the other series:

One degeneration of foetal tissue apparently due to nephritis.

One death of foetus apparently due to extreme fibroid degeneration of the uterus.

One defective germ-plasm or arrested development and absorption, due to retroversion, 3rd degree.

Three probably defective germ-plasm.

Twenty-one proven by examination to be defective germ-plasm.

Let us take these up in detail:

The first patient was 40 years old. Her first pregnancy ended in normal, healthy baby in 1905. Her second, in 1908, in toxæmia of pregnancy, full term, stillborn. The third, in 1910, miscarriage at 5 months. The fourth, in 1914, miscarriage at 5 months. In 1920, when

about 2½ months pregnant, she began to have a slight bloody discharge and remained quiet for a few days, then went about as usual, although she noticed a slight discharge practically every day. This continued until she was curetted and the products revealed the following: "Portions of necrotic decidua containing degenerating villi such as is characteristic where the ovum is retained after the death of the embryo." The development was estimated at about 10 weeks and the foetus was retained 10 weeks in utero before curettage. The Wasserman test was negative but the patient was found to have a definite nephritis of a very low grade, probably dating back to her attack of toxæmia in 1908. This would seem the probable cause for the abortion.

The second patient was a primipara, 25 weeks pregnant, who had been flowing every single day for many weeks in spite of absolute rest in bed. The patient did not seem to be exsanguinated although the flow was several napkins a day. Uterus was very hard and nodulated and a definite fibroid could be felt in the cervix. There seemed a question whether or not she was pregnant at all. After observation, as there was no letting up in the flow and no definite increase in the size of the uterus, from about the size of 7 months, and no foetal heart could be heard, operation was decided upon. An attempt was made to dilate the os but it was so firm and resistant because of the fibroid degeneration that a laparotomy was performed and what appeared to be multiple fibroid uterus was removed. It contained, beside the fibroid masses, a foetus of 20 weeks' development that had evidently been retained for 4 weeks. Death of the foetus may properly be laid to the fibroid uterus which was incapable of further growth.

The next case was a primipara with a retroverted uterus in 3rd degree, which could not be brought into anterior position. She began to flow about the end of the 11th week and continued to flow until she was curetted a week later. The products of conception consisted of decidual fragments, no villi or trace of an embryo, so that we cannot be sure in this case whether we are dealing with defective germ-plasm or arrested development due to the retroversion.

The next three cases I have classed as probably defective ova—two of them, because, while they consisted of unopened amniotic sacs containing only what appeared like stumps of embryos, through error were not sent to Baltimore for confirmation; and the other because of the report from the Carnegie Laboratory which is as follows: Development of 17 weeks, retained after death of foetus, 8½ weeks. Placenta showed signs of fibrous degeneration.

"Probably due to defective germ-plasm." There was no evidence of toxæmia, the Wasserman test was negative.

We come now to a consideration of the remaining 21 where a positive diagnosis of defective germ-plasm was returned from the Laboratory. Of these, 20 were spontaneous abortions, and one was therapeutic for endocarditis of grave character. This series represents 20 patients, as one had two consecutive abortions, 6 were primiparæ, the remainder having had at least one normal child after the period of viability and two of them healthy children since the abortion here reported.

The histories in these 20 cases are very similar. The patient reported a slight stain and went to bed for three days. Usually the flow would decrease or stop during this time, but would reappear on slight exertion. Gradually the flow would increase and often become foul. Then uterine contractions would begin and the patient would either abort or interference would be necessary because of hæmorrhage. Twelve were curetted and eight were not. The reason for not curetting was that the products seemed sufficiently complete not to warrant it and in only 1 case of the 8 was the bleeding prolonged.

The period of development ranged from 3 weeks to 11 weeks and is as follows for the 21 cases:

3 weeks	1
4 "	3
5 "	3
6 "	4
7 "	4
8 "	3
9 "	1
10½ "	1
11 "	1

21

The length of time that the embryo was retained after development ceased has been estimated as follows:

2 weeks	1
2½ "	1
3 "	4
4½ "	1
5 "	5
7 "	2
7½ "	2
8 "	3
8½ "	1

And one was missed abortion retained 10 months.

In 11 cases the embryo had either been absorbed or was missing. In many of the cases where the embryo was missing the amniotic sac was intact until opened in the Laboratory in Baltimore. Where the embryo was present

it was variously described as follows: "stunted rudiment of embryo," "nodular embryo," "stunted embryo," "macrated and distorted embryo."

The following is a typical complete report: "The specimen consists of a decidual cast which upon dissection was found to be made up of a large mass of decidua and an intact chorion which was imbedded in a large mass of coagulated blood. The size of the chorion is about what we would expect at the end of the 4th week of development, thus showing that it had been dead for several weeks. The villi show marked hydatiform swellings. Upon opening the chorion it was found filled with a transparent, coagulated magma in which firm strands were seen attached to the inner surface. Not even a remnant of an embryo was found. I think, therefore, in this case we are entirely justified in regarding the abortion as the result of defective germ-plasm."

Nearly every case in the above series has had a careful examination by an internist, including a complete blood examination and no pathological condition could be found to account for the abortion.

When we compare the above series with the table given by Cragin, we find possibly 8 cases out of the 39 would fall under the first cause, Traumatism. Under the various subdivisions of Maternal causes, 2 might possibly be classed as due to nervous or mental shock; 1, due to causes acting through the blood; 3, certainly, and possibly 6, as due to local causes. There are none due to paternal causes and 24 or possibly 25 due to foetal causes.

I think that it is well within the realms of possibility that we are keeping some of our patients too quiet during pregnancy, that we can safely allow them more exercise. If horseback riding, golf, tennis, the automobile and the railroad train are as deadly as we have been led to suppose, why didn't some of my patients have abortions following these indiscretions? All of these and many others were given me confidentially by the interested husbands, mothers, and mothers-in-law and often by the distressed patient herself as definite etiological factors in this above series of twenty odd cases of defective germ-plasm and it is very instructive to note that subsequent examination showed that the foetus was as dead as a door nail and had been for weeks when the specific indiscretion had been committed.

It would seem to me, in the light of these findings, to be of vital importance to examine our patients as early in pregnancy as is possible, trying to carefully and gently map out the exact size of the uterus. Then, should the patient, at any subsequent time, start to flow, keep her rigidly in bed for 3 or 4 days and then

examine again to see if the uterus is enlarging. Where there has been no evident enlargement after a lapse of two or more weeks, I should feel justified in allowing the patient to be up and about, sending her to the hospital if the discharge should at any time become foul but otherwise waiting a reasonable time for nature to empty the uterus. But, as soon as I had fully determined that the uterus was not enlarging, I should feel justified in emptying the uterus rather than run the risk incident to a missed abortion. I should certainly agree with Rongy and Arluck in their paper on "Missed Abortion" that, after three examinations four weeks apart, during which time no increase in size had been noted, there was every reason for emptying the uterus.

I do feel that we must observe our bleeding cases very much more carefully. I can recall during the period covered by the above series at least five patients who have had one or more attacks of bleeding during pregnancy not due to polyp, placenta prævia or erosions. With rest in bed the bleeding has subsided and the pregnancy proceeded at least to the period of viability if not to term. By careful study, I feel sure that we will be able to find some rule for a fairly early differentiation between the uterus containing a growing living foetus, and one that contains a mass of macerating photoplasm.

I believe this can best be accomplished by a careful estimation of the size of the uterus as early in pregnancy as is possible; re-examination after onset of bleeding and in the event of an abortion the careful examination of the products of conception by some one trained in Pathological Embryology.

In closing, I wish to express my gratitude to Dr. Streeter and Dr. Heuser of the Carnegie Laboratory of Pathological Embryology for their assistance so vitally important to my patients and so valuable to me.

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PREGNANCY COMPLICATING HEART DISEASE.*

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THE question of the effect of pregnancy upon patients with heart disease has had my special attention now for about two years. I was attracted to it by the fact that the mortality which has been presented by the obstetricians who have written on this subject was so remarkably great, varying from 25% to 50% in different reports. These reports, it is true, were concerned only with the patients who developed symptoms or signs of cardiac failure and so did not give a proper picture of the mortality from heart disease during pregnancy and labor. They entirely left out of the picture the large number of patients who pass through this period without cardiac insufficiency in spite of having well developed valvular disease. Even in this special group of those showing evidence of cardiac insufficiency the mortality seemed much higher than it should be, and so the management of these severe cases presented a very definite and pressing problem.

Besides this, one is often called upon to give an opinion as to whether or not a certain woman with heart disease should be allowed to undertake childbearing. This is a question which we find it most difficult to answer, because the criteria upon which a decision should be based have not yet been definitely laid down. Here then we were doing pioneer work. It was felt that if a careful record were kept of the patient's complaints together with a thorough examination of the heart and lungs, the filling of the arteries and veins and a test of the patient's exercise tolerance, it would give us information, which, when considered in the light of the patient's further course, should go far toward finding out what features will help us in this prognosis. We should be able to say with reasonable certainty whether or not the patient is liable to develop severe cardiac failure during pregnancy or labor, and whether or not she will be worse off in respect to her cardiac compensation after having had the child than if she had not had it.

We have encountered cardiac disease in about 1% of the patients who have applied to the hospital, to date about 50 patients in all but for various reasons only 35 are included in this report. See Table I.

* Read at the Annual Meeting of the Medical Society of the State of New York, at Albany, April 20, 1922.

* From the Department of Medicine, Cornell University Medical School, and the Lying-In Hospital, New York City.

TABLE I.
ANALYSIS OF THIRTY-FIVE CASES.

Valve Lesion	Cases	Per Cent	Enlargement	Cases	Per Cent
Mitral regurg.....	7	20	Marked	6	17
Mitral stenosis.....	20	57	Moderate	10	29
Aortic regurg.....	5	15	Slight or none	19	54
Mitral stenosis and aortic regurg.....	3	9			

TABLE II.
ANALYSIS OF FIFTEEN SEVERE CASES.

Valve Lesion	Cases	Per Cent	Enlargement	Cases	Per Cent
Mitral stenosis	9	60	Marked	5	33
Aortic regurg.....	3	20	Moderate	4	27
Mitral stenosis and aortic regurg.....	3	20	Slight or none	6	40

Of these 7 had mitral regurgitation, as the chief valve lesion, 20 had mitral stenosis, 5 had aortic regurgitation while 3 had both mitral stenosis and aortic regurgitation, so that there were 23 stenosed mitral valves and 8 leaking aortic valves in the series. Marked enlargement of the heart was present in 6 patients, four of these having both aortic and mitral disease. Ten patients had moderate (more than slight) cardiac enlargement. One of these had aortic disease, one a simple mitral regurgitation and the other eight mitral stenosis with or without regurgitation.

Evidences of cardiac failure were prominent in 15 of the patients of this series and four died of it. This more serious group (see Table II) included 9 with mitral stenosis as their chief valve lesion, 3 with aortic regurgitation and 3 with both of these lesions; 5 of these hearts showed marked enlargement and 4 moderate (more than slight) enlargement.

Mitral stenosis is more frequent than aortic regurgitation in the serious group but I do not feel that this indicates it to be a more serious lesion. Its occurrence in the serious group is 60% and in the series as a whole 57% while aortic regurgitation comprises 20% of the serious group and 15% of the series as a whole in each case practically the same percentage. Note though that all 3 cases of combined aortic regurgitation and mitral stenosis appeared in the serious group. Moderate cardiac enlargement was present in 27% of the serious cases and 29% of the series as a whole—practically the same percentage, but marked enlargement was found in 33% of the serious cases and in only 17% of all cases.

The presence of marked cardiac enlargement and of combined aortic regurgitation and mitral stenosis seem then to be the only pathological conditions which have a determining influence upon the seriousness of the patient's cardiac disease; that is, they are the only

lesions more frequent in the serious group than in the whole series. Yet patients with one of these conditions and even with both of them have been observed to go through pregnancy and labor without alarming symptoms developing.

FUNCTIONAL GROUPING OF PATIENTS

In a further attempt to solve the problem we have used a classification of these patients based upon an estimation of the functional condition of the heart. They were divided into four groups on a basis of the circumstances under which they complained of symptoms of cardiac failure (breathlessness palpitation etc.) and upon their observed reaction to a test exercise (swinging a 5 or 10 lb. dumbbell held in both hands 20 times from near the floor to over the head).

Group I includes those women who have definite physical signs of valvular disease and yet have never noticed unusual shortness of breath on exertion either before or during pregnancy. Their reaction to the test exercise was normal, or if not they were placed in Group II.

Group II includes in addition to these, women who, with definite signs of valvular disease, have never noticed unusual shortness of breath on exertion except during this pregnancy or a preceding one, or on unusual exertion when not pregnant. Their reaction to the test exercise was normal or moderately increased. If it was markedly increased they were placed in Group III.

Group III includes besides these, women who have been kept conscious of their heart disease by the appearance of shortness of breath or palpitation on unusual exertions when they were not pregnant, and whose symptoms have increased during this pregnancy or a preceding one but have not become severe enough to necessitate rest in bed, either during this pregnancy or at a time less than 6 months before its beginning. Their reaction to the test exercise was moderately increased; if markedly increased they were placed in Group IV.

Group IV includes besides these, women who have had symptoms of cardiac failure on moderate exertion when they were not pregnant or who have been in bed from cardiac failure within 6 months of the time of pregnancy. Their symptoms have become more easily produced during pregnancy but need not have made rest in bed necessary. Their reaction to the test exercise was moderately or markedly increased.

The results of using this grouping have been published in detail* and it seems to be of con-

* *Journal A. M. A.*, 1922, LXXVIII, 1188. Pardee, H. E. B. The Fitness for Pregnancy of Patients with Heart Disease.

siderable value in helping to decide whether or not the patient will have severe cardiac failure during pregnancy or labor.

None of the 17 patients in Groups I and II developed marked symptoms of cardiac failure. Three of the 9 patients in Group III went through labor at full term without marked symptoms and 3 of the 9 patients in Group IV did the same. It was felt that two of these three Group IV patients owed their relatively good condition at labor only to the fact that the delivery was of the precipitate character so that the strain of labor was at a minimum.

It seems, then, that patients who fall into Groups III and IV comprise all or almost all (for our series of 35 is too small to allow us to draw very sweeping conclusions) of those who will later develop a serious degree of cardiac failure, and that the patients of Group IV are not likely to go through an average pregnancy and labor without trouble.

That some are able to go through without serious symptoms is due perhaps to features of the individual patient quite outside of the heart. During pregnancy some women are very active and cannot be restrained from doing a great deal while others are quite lethargic; moreover the reactions of the nervous system to the usual events of life will be very different from one patient to another. These things are an important feature of the management of a woman with failing compensation, for the overactive or nervous woman will continually be throwing more strain on her heart than will one who is quiet and composed.

The strain of labor itself is very different in different patients also, and this is obviously of great importance from the point of view of heart failure. A quick, easy delivery will be much less of a drain on the reserve powers of the heart than will a protracted and difficult one. Therefore, a small pelvis or a large baby or a primiparous mother are matters which must be considered as carefully as the more special circulatory features of cardiac enlargement or valvular lesion.

TREATMENT

The management of patients with heart disease during pregnancy is vitally dependent upon these observations. It is evident that no matter what the valvular disease or the size of the heart, the patient is safe as long as she does not develop severe heart failure. Therefore abortion need never be advised on any grounds but those of the appearance of heart failure. Nor need we fear its sudden and unexpected appearance, for it is a very rare event for severe failure to appear suddenly without warning—we have seen it only once in 50 cases. Usually it comes on gradually over a period of several

days or weeks. Occasionally it comes less gradually during the hours of labor, but practically always gradually, so that when its onset is recognized we can take steps to ward it off before it is too late. Quickening of the pulse and an increase in the respiration are the first signs in any case, and along with these may go the finding of persistent rales at the bases of the lungs posteriorly which do not disappear with deep breathing. If these signs are disregarded the pulse and respiration become still quicker and oedema of the lungs may appear with cyanosis and frothy sputum. This latter state may sometimes appear abruptly on exertion in a patient who has previously shown some quickening of the pulse and respiration.

The secret of the successful treatment of these patients is to endeavor to prevent the appearance of oedema of the lungs. During pregnancy when the pulse and respiration are constantly more rapid than normal and rales appear at the bases of the lungs the patients should receive the usual treatment for heart failure of this degree. They should be kept in bed on a light diet with restricted fluids and should be given a properly thorough course of digitalis for at least 2 weeks. If this does not relieve the dyspnea and diminish the rales in the lungs, and usually it *will* do so, then and not until then, do I feel that operative interference is indicated.

When interference is indicated in these patients, no matter whether during pregnancy or during labor, the operation is performed for the purpose of relieving a strain on the heart which is trying it beyond the limit of its capabilities. It seems almost unnecessary to make this statement and yet I think that only by facing it squarely can we be brought to see what sort of an operation is indicated and what sort contra-indicated. The operation must be such a one that it relieves the strain upon the heart *promptly*, and must not itself impose an added strain. If the cervix is not dilated the operation of choice seems to me, without question, to be the abdominal section. If the cervix is dilated and the head engaged then forceps may suffice. I am not favorable to version and extraction for I feel that the shock of the intrauterine manipulation is a factor to be avoided, so with a high, disengaged head I would advise abdominal section even with some dilatation of the cervix. Ether is the anesthetic of choice, and gas I think very dangerous even if given with oxygen, for it raises the blood pressure and increases the work which the heart must do, thus throwing an added strain on the circulation.

Never operate during a period of severe cardiac failure. The risk is greater then than at any other time and I think greater with

operation than without it. The added strain may be the decisive factor in causing death. We should aim to operate either before severe failure has set in or after it has been recovered from and thus deal with a heart whose reserve is not almost entirely used up.

When a patient has reached such a state of cardiac failure that treatment has necessitated rest in bed and when treatment has resulted in improving the compensation so that rales have disappeared from the lungs and perhaps the effort of walking on the level can be undertaken without undue shortness of breath, it is then time to consider what this patient's further course should be. How important is it that this baby should be born? How much chance with her own life does the mother wish to take? Interference may be advisable but is not obligatory at this time for some cases go on very well even after an attack of severe decompensation and may, with proper care, complete their pregnancy and labor without further serious failure. Other cases though will relapse even with the most careful treatment and these should have an abdominal section performed when the relapse is seen to be imminent. The severe patients should never be allowed to go beyond the 40th week, for a large baby is, as has been pointed out, very undesirable. With patients who are considered to be of the most serious type—the Group IV cases—it seems to me that it would be well to induce labor at the eighth month, thus ensuring a small child and an easy delivery, though this is less true with primipara than with multipara.

Sometimes in hospital work patients are first seen during an attack of acute cardiac failure with oedema of the lungs. They are markedly dyspneic, cyanotic, coughing up pinkish, frothy sputum, and show a very rapid heart rate, 120 or over, distended veins in the neck and labored, rapid respirations. If this woman is in labor and it cannot be quickly ended by a medium or low forceps operation her case is nearly hopeless. Even before the operation is attempted, though, the cardiac failure should be treated, to, if possible, improve her chances of pulling through. A hypodermic of $\frac{1}{4}$ grain of morphine sulphate along with $\frac{1}{50}$ grain of atropine sulphate should be given at once. Phlebotomy should be done and continued until the distended neck veins are collapsed, removing from 5 to 10 or more ounces of blood if necessary to produce this effect. Digitoxin should be given intravenously in a dose of $\frac{2}{100}$ grain.

This treatment will usually result in a temporary cessation of labor, an improvement in the respiratory distress and a diminution in the rales in the lungs. The patient should be care-

fully watched when labor shows signs of starting again and if the dyspnea increases an operation, either low forceps or Cæsarean must be done in spite of the poor chances that it offers. An expectant policy at this time offers, I think, a poorer one.

If the woman is not in labor this treatment offers a very good chance of recovery. We have had only one death from pulmonary oedema when the patient was not in labor and this was during her third attack. When the patient is not in labor we have used oxygen inhalations from a closed inhaler with great benefit to the cyanosis and decrease in the dyspnea and have also noted a slight slowing of the heart rate. The oxygen used was diluted with about $\frac{1}{3}$ air and was given during alternate 15 minute periods. There is no indication for operative interference in these cases unless the above measures do not bring about improvement, and as we have said they usually do so.

When the patient shows only the lesser grades of failure during pregnancy she should be carefully guarded from exertions which cause shortness of breath or palpitation, for if such exertion is persisted in, the result will be cardiac overstrain and severe failure. A thorough course of digitalis lasting for a month or six weeks will be found to improve the compensation of these less severe patients to some extent at least, and should be used in addition to the restriction of activity. We have had three instances in our series of acute severe failure with oedema of the lungs coming on as a result of sexual intercourse after the fifth month, and one instance following a quarrel with the husband, so that these things too must be warned against.

Long continued rest in bed is not necessary for these patients unless the result of allowing them to be up is the appearance of rapid pulse and dyspnea on such exertions as walking about the house. If the compensation is as poor as this, though, they are to be considered as in the serious class and the question of treatment should be approached as has already been outlined.

I am as yet unprepared to say whether or not pregnancy has a permanently bad effect upon the mother's heart. We have been able to follow up so few cases and the time of observation is so short that I cannot yet feel sure of the answer. It is, I think, in view and seems to depend a great deal upon whether or not the pregnancy and labor were associated with severe heart failure, as well as upon the character of the postpartum treatment of the cardiac condition.

SUMMARY

It should be evident from what has been said that it is not my feeling that abortion is often indicated for women with heart disease. Most of them will go through very well indeed, but it is our urgent duty to find some means of picking out those cases that will not go through without developing serious symptoms. Cardiac failure is the thing which we fear in all cases, and we should be guided in our prognosis and treatment by the presence or absence of symptoms or signs of cardiac failure and by the degree of severity of these when present. The pathological condition is of much less importance than the physiological reactions.

With proper observation and treatment severe cardiac failure should not occur during pregnancy, for if medical treatment does not ward it off, then interference is indicated. Even during labor its occurrence should be rare with careful observation and prompt intervention as described whenever severe failure seems imminent.

Operation should not be withheld at any stage, even though the signs of failure are slight, if they are seen to be growing progressively worse under proper medical treatment. It is better to operate when the failure is moderate than to have to do so when it is severe.

By such a co-ordination of medical and surgical treatment I feel sure that it will be possible to obtain more live babies and to have fewer maternal deaths than any of the figures which have so far been published. In our series the maternal mortality of the serious group was 26% and of all cases 10%. I feel that this is unnecessarily large and should be capable of reduction by more than half.

THE DIGESTIVE COMPLAINTS OF THE CARDIAC PATIENT.*

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THE common gastric complaints of the cardiac patient are: pain about the epigastric region, vomiting, diarrhoea, lack of appetite, constipation, belching, fullness and flatulence. These complaints are not placed in order of frequency, but for convenience will be taken up in the above order.

In discussing the relationship between gastro-intestinal symptoms and cardiac diseases, it is scarcely necessary to call attention to the fact that the old rule, when a patient complains of pain about his heart, one should visualize such

a patient at once as more likely to be a stomach rather than a heart case. Like all rules, the exceptions are almost as frequent as the rule. It is quite true that the "magenblase" or gas bag in the stomach does push the heart up and produces very much discomfort, even faintness, in susceptible patients, and is often associated with extra systole and dyspnoea. When there is present also an old quiescent endocarditis, as evidenced by a systolic murmur, the diagnosis as to which factor is the cause; i. e., some disturbance of the autonomic nervous system, or is the result of a possible fresh involvement of the endocardium, is at times a puzzling question.

In the presence of such a combination, and without any other evidence, one is at first warranted in considering the more serious side of the question as being the more likely. After finding that the heart reacts well to exercise, returns to normal quickly, that there is an absence of dyspnoea, absence of rales over the left lung base, absence of palpable liver involvement, absence of pulse frequency, absence of marked accentuation of the second sound over the pulmonary area, one is warranted in considering the trouble to be functional and dependent on some other cause. No harm can come from the first postulate except some mental anguish on the part of the friends, whereas not unfrequently when such an attack is followed by severe and fatal decompensation and death, the practitioner is never forgiven if he has made light of the symptom.

Fortunately, in most instances of cardiac pain and gastric disturbance, no such combination exists; either the case being one without cardiac involvement, or the cardiac cause is quite evident. In aortic cases, digestive symptoms are very late in appearance, and when they do occur in the course of aortic decompensation and are severe and resistant to treatment and can be definitely labelled as of cardiac origin, one is warranted in considering that death is not far off—certainly not more than a year. On the other hand, aortic cases are frequently irritable and have sensitive nervous systems that account for occasional digestive upsets. Most of the deaths from so-called "acute indigestion," the policeman's diagnosis of sudden death, are aortic regurgitation.

On the other hand, the frequency of hysterical manifestations of the digestive tract in severe cases of mitral stenosis warrants much reserve in considering them as serious as they look. We have all seen patients suffering from mitral stenosis who have manifested such severe evidences of pain, gas and vomiting that requires half a grain of morphine to subdue it, and exitus seemed inevitable, yet on the next day the patient would be quite well, only

* Read at the Annual Meeting of the First District Branch of the Medical Society of the State of New York at Yonkers, November 1, 1922.

to be followed by some other unquestionable hysterical manifestation of a like character; the whole resulting from either a difficult menstruation or because the patient's wishes had not been complied with.

Even here, when in doubt, (and doubt must always exist in such a case) it is wiser to consider the phenomenon as part of the mitral syndrome, proved than as pure hysteria, until definitely proved otherwise.

Persistent vomiting is a most distressing symptom. It is commonly associated with disease of the kidney. The great question is usually to determine whether or not it is due to the drugs, digitalis or morphine, or to the disease. It is wiser to stop all medicines for 48 hours, when, if it is due to the medicines, it will quickly cease. If due to the heart itself, as is usually the case, it will continue intermittently.

Just one therapeutic hint: i. e., to combine an alkalai as sodium bicarb gr. v., small doses of calomel gr. $\frac{1}{8}$ gr. $\frac{1}{6}$ with cerii oxalas, gr. v., and if much distress, codein gr. $\frac{1}{2}$ should be added. In H. B. P. cases $\frac{1}{200}$ of nitroglycerin may often be added to the prescription. In general in such cases the bismuth preparations have not been successful in my hands. Small doses of chloral gr. ii—gr. v. every 3 hours well diluted are often of great service. Ipecac in homeopathic doses often turns the scale.

Diarrhœa is sometimes a distressing feature. It is often difficult to deal with. It is due to (1) the ingestion of faulty food, (2) to drugs, (3) to toxemia of the disease itself, (4) to the faulty elimination of kidneys. A dose of castor oil and starvation with stopping the medicines will eliminate the first two causes, a study of the urine and blood will determine whether (3) or (4) are responsible. Of course if it be an attempt of nature to eliminate toxins, one must be slow in stopping it. Either morphine or tannigen gr. x every four hours, or both will usually stop a diarrhœa, due to cardiac disease.

Lack of appetite is usually nature's warning that food cannot be satisfactorily handled. A bitter, such as tincture gentian co, or the rhu-barb and ipecac mixtures before meals, sometimes cause the patient to relish his food. In general, I believe that the lack of appetite is a conservative process and should be left alone.

Other uncommon symptoms; such as thirst and hiccough are sometimes classed as due to digestive disturbance. In my experience thirst is often closely related to hunger in that the patient feels like taking something for the "all gone" feeling. It is often due to an associated renal disease. In a seriously ill cardiac, it is a bad omen. As to hiccough, the stomach should be emptied. If the hiccough is very severe and continues, gastric lavage should be

done. The drugs of the digitalis series should be interdicted. A Rehfus tube may be kept continually in stomach. These failing, a hypo of morphine is the best remedy.

The subject of belching, constipation, fullness and flatulence are so bound up in the single symptom of "Flatulence" that they will be considered together.

Factors that go far in the making for flatulence in the cardiac patient may be classed as: (1) the ingestion of food when it is not utilized in the body. This is due to the fact that diseases of the heart produce a sense of weakness or "all-gone-ness" in the epigastrium, which the patient feels must be overcome, and he wrongly translates it as hunger, and for that reason he feels he must eat; the more food or liquid he puts into his stomach in the endeavor to satisfy this sense of hunger, the worse he becomes; (2) in practically all decompensating mitral cardiacs, the liver is congested to a certain degree. This congestion interferes with its function so that it is unable to handle the accustomed amount of food, and consequently there is less bile poured out, and that which is poured out is altered in character; (3) the local congestion in the bowel and pancreas also interferes with their functions and the food is not utilized, and thus it acts as a foreign body; (4) the congestion of the blood vessels of the bowel interferes with the motor function and is an added factor. French observers often state that a true chronic gastro enteritis is present in these cases and that microscopic section of the stomach confirms this statement. (The fact that such stomachs frequently functionate quite well at a later period, throws some doubt on this pathology.) As a further check on the absorption of food is the lessened motor function due to the sedentary habits of the patient which, while lessening the demand for food, does not assist the passing of gas when it is formed. (5) That there is a close relationship existing between kidney excretion and the formation of gas, is a well established clinical observation. That dry diet is followed by excellent results in disturbances of the kidney is a well-known, positive fact. We are fully convinced that the custom of feeding large amounts of *liquid foods*, under the impression that they are more easily absorbed, is frequently the cause of much gastric distress in those suffering from cardiac decompensation. In cardiac diseases the kidneys are always congested and unable to do the same amount of work and to handle the same quantity of fluids, that is normal in health. This constitutes a fifth reason for the digestive disturbances of the cardiac; (6) the presence of large amounts of unabsorbed fluid in the stomach, certainly makes for ptosis of that organ, interfering with

its normal contraction, and is thus a fertile field for the development of flatulence; (7) because of the disturbance in circulation in the brain, consequent on heart disease, cardiacs are for the most part, irritable and nervous, which indirectly accounts for the causation of some of their flatulence; (8) because of the frequency of the sensation of a lump in the throat, due to enlargement of the vessels in the neck, there is a frequent desire to gulp air, or swallow, so that the cardiac, during decompensation, often swallows considerable amounts of air. The possibility of swallowing air being an attempt or the part of nature to vicariously promote the exchange of gas by the intestinal tract, when the lungs are unable to function as is the case in decompensation, might be worthy of investigation. Furthermore: Stacy Wilson has called attention to the high position of the diaphragm commonly present in decompensating hearts. The gastric resonance often extends as high as the third rib, and almost always to the fourth and fifth. The extent of this distention is best ascertained by making a physical examination of the patient when he is on his back. When improvement occurs he believes the distention becomes less in proportion to the improvement. He postulates that there are four sets of tissues in the chest: (1) Lung tissue and the bronchi, (2) Air in the bronchi, (3) The heart and blood vessels, (4) A certain quantity of blood. Only two of these can possibly change; i. e., the air and the amount of blood, and he believes that it is the amount of blood that is diminished. This is somewhat contrary to present views as to the nature of pulmonary congestion in most decompensating cardiacs. Most of us feel that there is far more blood in the chest than under normal conditions. It seems more likely that the air is diminished. In any event, the stomach and intestines balloon out with air to follow the diaphragm.

Prognosis: One may, often in a general way, prognosticate the condition of the heart by the severity of the flatulence. While it is true that cardiacs suffer from attacks of flatulence for many years during the ups and downs of their heart failure, yet, when severe decompensation has occurred, the digestive symptoms are very much more severe, and until they begin to mitigate, the outlook is gloomy, because this keeps up a vicious circle which does much to prevent recovery. Unfortunately, once established, they are seldom missing to a greater or less degree throughout his afterlife. When flatulence becomes a constantly recurring, troublesome symptom (in spite of ordinary means; such as, complete rest, diet, etc., instituted for the relief of the cardiac condition) then, in the case of a manifestly ill aortic car-

diac, one is justified in giving a probably fatal prognosis. In mitral cases, this phenomenon will recur and recur without warranting an immediate fatal prognosis. Ordinarily in aortic diseases, it is quite frequently associated with sudden death; hence, after a state banquet, when the heart of a prominent citizen suddenly gives out, acute indigestion is the term that satisfies the coroner's physician. In most of the cases of cardiac indigestion stomach analysis reveals only an excess of mucous and a low HCL content. *Treatment:* Many years ago the elder Broadbent stated that in the treatment of heart disease, the treatment of the stomach and nervous systems are more successful in placing the patient on his feet than is the treatment of the heart itself, and I believe that clinicians in general will bear out this statement.

The subject of the treatment may be divided into: (1) the management of the acute attack, and (2) of the sub-acute or recurring cases. In the management of the hyper-acute attack, it is well to have ready on the tip of one's tongue, to be ordered over the telephone, if need be, a regular sequence of remedial measures to be employed:—

(1) A glass of hot water with one teaspoonful of soda bicarb.

(2) Clove water, made by dropping a dozen whole cloves in a glass of boiling water and allowing it to stand five to ten minutes, then drink the solution.

(3) Hoffman's anodyne (always to be kept in the home of cardiacs).

(4) Aromatic spirits of ammonia.

(5) Jamaica ginger, or any household carminative.

(6) A simple c.c. enema.

(7) This prescription:

Spts. ammonia, aromatic.....	3iv
Spts. chloroform	3ii
Tr. zinziberis	3ii
Spts. lavendulaeco	3vi

Sig.: 3i every two hours.

(8) Mustard plaster over stomach.

(9) Turpentine stupes.

(10) Turpentine enema.

(11) Turpentine by mouth.

(12) Milk of asafœtida enema.

(13) Caution the patient to avoid gulping or air swallowing.

(14) Rehfus tube.

(15) Stomach tube. Ordinarily, in a manifestly ill cardiac, the suggestion to use a stomach tube for either persistent vomiting, or for flatulence and distress will be viewed with horror. No one wants the patient to die while such an operation is being performed, but I have never seen anyone seriously injured by the performance of stomach lavage. On the

other hand, I have seen relief and sleep that could not be secured by morphine. In a severe case, resisting all of the ordinary measures, it is of inestimable benefit. Auto lavage may sometimes be practised, but as a rule the general prostration and distress following vomiting is more of a strain than the retching resulting from passing a small stomach tube. The passing of the Rehfus tube and washing through it will sometimes avoid the use of the larger tube.

(16) Pituitrin (surgical) 1 CC by hypo.

If there is any reason to feel that the trouble is likely due to colon distention, a simple enema will often effect the quickest and most satisfactory relief. If high blood pressure is present, nitro-glycerine, grains 1/100 under the tongue often gives relief. It should always be tried early, in the high blood pressure cases.

DON'TS.

Don't give strychnin, except for moral effect.

Don't give morphin or digitalis.

Don't neglect to reassure the patient. He may not say he is frightened, but in most instances he is secretly alarmed.

Don't get excited!

Generally the clinical picture is rather that of recurring attacks, with a varying interval, until finally, in the bed-ridden patient, he suffers continually after each meal. These cyclical attacks occur with considerable degree of regularity. It is an open question whether the underlying cause is a fresh infection or whether these attacks are in the same category with other cyclical disturbances; such as migraine, epilepsy, menstruation, etc. Personally, I am quite sure that many such digestive attacks in normal individuals are of a cyclical nature.

In the management of recurring cases the diet is of utmost importance: (1) Dry diet—this means that these patients should not be allowed any liquids with their meals, nor within an hour after the meals. This is the most difficult rule to enforce, one must explain the ptotic result of ingestion of liquids with meals to secure the patient's co-operation. A diet list should be furnished each patient. (2) No condiments—this includes celery, radishes, etc., flatulent foods; such as cabbage, beans, onions, and bananas are forbidden. No raw fruits, butter, fats, cream, cheese or eggs. The liver efficiency test, as suggested by Widal, goes far to prove the time-honored clinical observation, that these fatty foods are not well borne by the liver. In the performance of this test, which may be made by anyone, a blood count is taken before the meal, and again an hour afterward. With a normal liver, there is an increase of the leucocytes of approximately two thousand. If there is an insufficiency in

the liver function, from any cause, this increased leucocytosis does not occur, and often there is a diminished leucocytosis. It is necessary that no food be ingested for at least six hours before meals. At Fordham Hospital about 2 years ago, we tried out this test in a group of decompensating cardiacs with large livers, and in approximately seventy-five per cent of the cases, leucocytosis did not occur within an hour after the meal. In a few cases where no liver enlargement could be made out, and yet the patients were suffering from some of the minor symptoms of cardiac failure, there was no increased leucocyte count. Widal believes that it is due to a protein shock reaction on the liver function. In spite of his lengthy argument, it seems to us that it is due rather to the reaction against the fats, than against the proteins. At any rate the test opens up a fruitful field for research. When milk is taken, it preferably should be skimmed milk. Tea or coffee should not contain cream or milk, nor should food be taken with either of them. However, a dry roll is often permissible with coffee. Cocoa and chocolate in any form is not allowed. Soups are generally condemned. I have found that meat, in small quantities, is not badly borne, provided the other rules above mentioned are followed. Many of these patients say that meat does not agree. The disagreement is most often due to: (1) either too much is ingested, or (2) fluids are taken at the same time. Unless a personal idiosyncrasy exists, meat in small quantities is not harmful, provided that there is not also present an advanced interstitial nephritis. A urine with a sp.gr. over 1015 at all times, with a normal urea output, even though there is a trace of albumen and casts present, does not warrant any restriction in protein intake. In fact, a fair, but not excessive protein diet is indicated, and often transforms the disheartened, dejected invalid into one who can earn his living.

Cold drinks and unfermented juices must be avoided. Lemonade is a common offender. No salt should be put on the tray, especially if edema is present. No exercise should be allowed within at least one hour after meals. The meals should be eaten slowly. In every case not readily responding to treatment, the colon must always be viewed as a likely cause of the distress, and above all else, constipation must be avoided. The first thing to do for the recurring attacks is to administer a dose of castor oil; no other agent acts quite so well in temporarily ridding the bowels of gas. In some patients a daily enema is satisfactory. Others are much prostrated after enemas. Care should be taken not to use a flatulent cathartic, such as magnesium citrate. Thin

cardiacs bear salines badly—in plethoric patients they do well. As a rule, for continued use, one of the vegetable cathartics, as cascara aromatic every evening after supper is preferable. As a matter of fact death at stool is a common form of death among cardiacs. In his essay on Death, Lord Bacon calls attention to this fact: In the Rome of the Cæsars, whenever an emperor died he became a God. The Emperor Otho who was suffering from cardiac disease while seated at stool feeling life ebbing away, exclaimed “Ut puto, ut Dei,” which may be rendered as “I sit at stool; I become a God.” If high blood pressure is present, a bi-weekly dose of castor oil is better as a cathartic, provided prostration does not follow. Occasionally, however, such a patient is much prostrated by its use. In cases where digitalis is indicated, after digitalization has been accomplished, medicines of this series should not be given in more than two daily doses. Opiates, when indicated, are best combined with a laxative such as:

Tr. opii deod.....	3iiss
Fl. ex. cascara aromatic.....	3iv
Elix adjurans, q. s. ad.....	3ii
3i, q. i. d.	

In all cases, during the cycle of the attack, an alkali, either in the form of soda bicarb. or magnesia, or both, should be given half an hour after meals and at bedtime. The rationale is the same as in any other disturbance of stomach motility. It forces the opening of the pylorus. In spite of the low acidity present, hydrochloric acid has not been serviceable in my hands. Inasmuch as hyper-excitability of the vagi is responsible for so many cases wherein one cannot incriminate the faulty motility as being due to either abdominal pathology or faulty food, it is good practice in such cases to begin with a course of bromide: 20 to 30 grains of bromide of soda with equal amounts of cinnamon water and milk of magnesia after meals. This is generally in the first instance a good routine prescription. I would suggest this prescription as a refuge for the dispensary physician when he has not time to unearth the cause of the flatulence, rather than the routine use of the R. & S. mixture, which is so commonly prescribed under such conditions. In other instances the following prescription has served me well, especially when epigastric pain was complained of:

Chloral hydrate	3iiss
Sod. hyposulphite	3ii
Aq. menth pip. q. s. ad.....	3ii
3i. a. c. in water	

This was originally suggested by H. A. Hare for painful digestion.

In all high blood pressure cases where the flatulence comes on shortly after getting up from the table, 1/100 gr. or less of nitro-glycerine should be given immediately after the meal, and before the patient gets up from the table. From time to time carminatives such as: asafoetida, ginger, creosote, peppermint or oil of cloves, must be employed. Many of these patients suffer from a potential visceroptosis, which only becomes troublesome during the cycle of the attacks. In a large proportion of cases the application of two or three strips of wide adhesive plaster across the abdomen is of utmost service. The use of plaster in this way is often one of the most satisfactory procedures in the management of these patients. This is particularly true in long-waisted people. Inasmuch as patients are fairly free from symptoms between attacks, this may avoid the purchase of an abdominal support. The peroxides of magnesium have not been successful in relieving gas in my hands. As has been stated many times, in all complaints for which a large number of remedies have been suggested, it is not possible to successfully treat them by any one method. Careful attention to the eight factors so prominent in favoring the production of flatulence, and observation of the minor details of hygiene, rest and food, is more often crowned with success in the sense of lessened distress than from any single specific prescription.

To sum up, these patients are satisfactorily managed if: (1) Careful attention is paid to the eight factors so prominent in the causation of flatulence in cardiacs, (2) by particular attention to diet and hygiene, (3) castor oil at first visit (4) alkalai and alkaline-bromide mixture after meals, (5) an adhesive bandage about the waist, (6) rest after meals, (7) carminatives as required, (8) special cardiants and nitro-glycerine in selected cases.

ON QUACKERY AND CAUSES FOR ITS GROWTH.

By MATTHIAS NICOLL, Jr., M.D.,
Deputy Commissioner of Health, New York State.

FROM the medical standpoint a quack is any person who, as a means of livelihood and without the necessary knowledge of the structure and functions of the human body in health and disease, claims to be able by special methods to prevent, alleviate and cure pathologic conditions.

Those who deny the existence of disease, except as a manifestation of faulty habits of thought, or who believe that faith alone can prevent and cure disease and suffering, however

scientists may disapprove of their methods and practices, should not be included in the above definition, for the reason that they possess at least the virtue of sincerity, whereas the professional quack, if he knows anything, usually knows that he is a fraud and his clients gullible dupes.

The patronage of pure quackery under whatsoever weird titles it masquerades is spreading throughout this country by leaps and bounds. One state legislature after another is yielding to the importunities of quacks and their misguided victims and granting various cults separate boards of licensure and authority to practice on the human body, but up to the present time with certain restrictions. Now comes the state of California with the proposal to its legislature to remove these restrictions and grant them unlimited authority to practice general medicine. As a result, at the recent session of the American Public Health Association at Cleveland, there was passed a resolution to the effect that licenses to practice the art of healing be granted by but one body in each state, namely, that authorized to issue licenses to regular practitioners of medicine. If the California proposal be sanctioned it requires no gift of prophecy to foresee the time when the cultist will be permitted to practice surgery also—in short, granted a license to commit murder.

It makes little difference to the cause of public health under what titles, however ludicrous, a practitioner chooses to carry on his profession, provided only that he be qualified by education, experience and personal character to recognize disease and apply those general principles of prevention and cure which have received scientific approval and stood the test of time and experience. It is very true that people love to be fooled and that in every day and generation there are many seekers after strange gods, but for the enormous growth of quackery which is taking place today there is one very definite and overwhelming cause, namely, the disappearance of the old-time family practitioner and the substitution of diagnosticians and specialists.

This is the age of specialization in the professions and industries. Knowledge relating to the medical sciences has increased so enormously, especially during the past quarter of a century, that no single mind may cope with the almost daily discoveries of far-reaching importance to the well-being of mankind, and thus one or more specialists, wherever they are available, have come to take the place of the general practitioner in the solution of difficult

problems of the diagnosis and treatment of disease.

Again, this is the age of machinery as against the work of the hand. Physicians are becoming more and more dependent on the reports of chemical, physical and pathological laboratories and the results of mechanical tests, while the power of accurate, personal observation and judgment based upon the employment of the highly trained senses which characterized the great physicians of a bygone day, seems to be given but little consideration in the modern medical curricula. Physicians today give but scant attention to the little details of care and treatment which go to make up such an important part of the art of healing, as contrasted with purely scientific procedures.

The good physician of a former generation knew his patients and was never too busy to lend a helping hand in any matter relating to their physical and mental welfare. He was not only their medical adviser, but, next to the minister of God, their counsellor and guide. His cures were often seemingly miraculous, for the reason that he inspired faith in those who sought his help. And it is that faith, born of keen personal interest, which is so largely denied the modern physician.

With the rapid disappearance of the family physician his field has been invaded by a crew in motley, the clowns of the healing art, who with tongues in cheek wax fat on the credulity of their helpless victims. The quack is here. Licensed or unlicensed, he will conduct his business under ever-changing names until such time as the public is taught by health education and demonstration what medical science can and can not do to alleviate their mental and physical ills; until physicians return again to the practice of the art of medicine and thus regain the faith of the mentally and physically sick and of that large class of persons who, for the need of a little sound advice, lead a life of misery; until specialization is restricted by boards of licensure to those who are actually qualified, and furthermore have given a certain period of years to the general practice of medicine; and, finally, until medical students are taught as a part of their regular curriculum the history of medicine including the story of the rise and fall of quackery and the causes thereof, for only thus may the medical "heir of all the ages" learn to know the work of his professional forebears, and it is hoped, profit by following their very many valuable methods of practice, which have been so nearly forgotten.

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AN IDEAL.

The success of the well edited, bright, newsy, informative, *Medical Week*, published by the Medical Society, of the County of New York, furnishes another strong argument for weekly communications to and between the members of the State Society.

If the JOURNAL is to publish only the papers read at the annual meeting, a monthly issue will take care of that material although most of it grows stale before it reaches the general reader.

If the JOURNAL is to present the current news of County Societies, the current news of legislation, the current news of all collateral social activities that are of possible value to the physicians of the State, it must be issued while that news is still news.

Our deduction, from information sent us from many sections, is that an up-to-the-minute JOURNAL is desired. We believe that many are willing to furnish the necessary material support, and we are convinced that our members are now awake with a new sense of personal responsibility to each other and to the public they represent.

As an object lesson in County Society activity we print in full "News Letter No. 1 of the Suffolk Society, etc., date of Nov. 10, 1922:

News Letter of the Suffolk County Medical Society

NUMBER 1—NOVEMBER 10, 1922

This is the first of a series of News Letters which will be issued monthly to the members of the Suffolk County Medical Society in order to show what the Society is doing. The Society cannot progress if it lives on its past achievements. It has existed principally as a scientific body, and that object must ever be prominent. But it must also consider medical economics, and must take its place among the social and political forces of the County. A physician's duty is no longer merely to minister to private patients, but he must join with his fellows, and with them take the lead in all things relating to health, be they matters of private practice, public health, or the sanitary education of the people.

The Society also has a field of usefulness in promoting the welfare of its individual members. How many know that lawsuits for malpractice have been brought against four members during the past year, and that those who were sued were defended and supported by other members of the Society? How many have any conception of the immense amount of work that was done by the Chairman of the Legislative Committee during the past winter? These News Letters will tell about these and other things, and will help the members to realize the mutual obligation that exists between the individual members and the Society.

THE ANNUAL MEETING

The Annual Meeting at Riverhead on Thursday, October 26th, 1922, was unique and interesting on account of the spirit of progress which was shown. It was attended by 22 members,—about one-fifth of the membership. The Towns from which the members came were as follows:

Southold,	5	Brookhaven,	4
Shelter Island,	0	Islip,	4
Riverhead,	2	Smithtown,	0
East Hampton,	0	Huntington,	1
Southampton,	6	Babylon,	0

Where were the members from the west end of the County?

The officers elected for the year 1923 were as follows:

President, Dr. J. L. Halsey, Islip.
Vice-President, Dr. A. C. Terrell, Riverhead.
Secretary and Treasurer, Dr. Frank Overton, Patchogue.

Censors: Dr. W. N. Barnhardt, Central Islip; Dr. J. W. Stokes, Southold; Dr. F. D. Peterson, Cutchogue.
Delegates to the State Society: Dr. Frank Overton, Patchogue; Dr. W. H. Ross, Brentwood.

Alternates: Dr. A. C. Loper, Greenport; Dr. E. P. Kolb, Holtsville.

The new members elected were: Dr. W. E. Granville, Bridgehampton; Dr. Rodney E. Wyman, Westhampton Beach; Dr. Louis F. Garbin, Islip; Dr. Sol Schlimbaum, Bay Shore.

The principal speaker on the scientific program was Dr. A. C. Martin, of Rockville Center, President of the Nassau County Medical Society, and Regional Consultant in obstetrics and prenatal care for the State Department of Health. He outlined the program of the Department of Health for saving the lives of mothers during childbirth. The members were surprised to learn that one mother died for every 172 births in Suffolk County during 1921. These figures convinced all those present that there is grave need of education in preventing these deaths.

The President's address by Dr. J. W. Stokes was much out of the ordinary, for he had the courage to call attention to better standards of medical ethics. One point to which he especially called attention was that of the performance of major operations by general practitioners who have not had special surgical training. The members present felt that the subjects brought up by Dr. Stokes were too personal for immediate action, but they commended him for his stand.

Dr. Ross, Chairman of the Legislative Committee, reported that he had written 104 letters and sent 45 telegrams in his official duties during the last session of the Legislature. He called attention to the impossibility of carrying on the work without funds. On motion a sum of one hundred dollars was voted for the expenses of the Legislative Committee during the coming year.

The Treasurer reported that the Society now had about \$975 on hand, but that one-third of the members were in arrears for dues—some for two or three years. Half a dozen had not yet paid their two-dollar assessment to the State Medical Society. (It is curious how some members object to that assessment, while they think lightly of buying two-dollar dinners every week.)

The questions of the collection of dues, and of the relation of the Secretary and Treasurer, were discussed, and it was voted unanimously to combine the office of Secretary and Treasurer and to appropriate one hundred dollars for the clerical hire of the office during 1923.

Dr. Ross gave notice that he would bring up the matter of raising the annual dues of the Society to five dollars at the next meeting.

MOST INTERESTING AND EXTRAORDINARY

After forty-six years of continuous practice, Dr. Clarence C. Miles has packed up his trunk and started with his good wife to go around the world. At present he is probably in Hawaii, to the envy of the younger doctors and the despair of the older ones who cannot go.

AN APPEAL

Do not think that because money is appropriated to hire work done, the individual members will have no work to do. You will be asked to see legislators, to send telegrams, to write letters, and to show your interest in the social phases of medicine. We know you will respond when you are kept informed regarding the work to be done and the results which are attained.

FRANK OVERTON, *Secretary*,
Patchogue, N. Y.

One hundred per cent of the members of the Suffolk County Society replied in favor of continuing these news letters. If every county society followed this lively example until such a time as the STATE JOURNAL should be in a position to take up intimate and timely publication, the membership of the State Society would be cemented as never before.

N. B. V. E.

MALARIA.

The registration at the National Malaria Conference, held at Chattanooga, Tennessee, during the week of November 12, 1922, showed that with the exceptions of New Jersey and New York, only Southern states had sent representatives. This does not mean that northern states are immune to malaria for only recently in the New York State Health Department *Public Health News*, there were noted several communities in which moderately severe outbreaks had recently occurred. Dr. Godfrey of the State Health Department has confirmed this in a letter in which he gives all the data in the possession of the Division of Communicable Diseases. An investigation shows that malarial outbreaks have been widespread.

Is it not time that the control of malaria should be taken up in New York State in a sane and scientific way instead of in the desultory way with which it is dealt in every county in New York State, excepting only New York City and Nassau County. Definite plans have been followed in these two places, and that the problem of malarial control has been well handled and that the results have justified the efforts and the money expended, is not denied by anyone living in New York City or Nassau County.

In Nassau County in 1915 in four communities on the north side of the county there were recorded four hundred and seventy-five cases of malaria in a population of about ten thousand. Unofficial statistics place the malarial infection at eighty-five per cent of the population before control work was begun. A doctor in one village said that one-half of his calls were on malaria cases but that in 1922 he has not had one case of malaria in his practice.

During the current year of 1922 there have been reported three cases of malaria in a population of one hundred and sixty-five thousand.

If it is true that there were these cases of malaria in Nassau County before control work began, then other counties must be having their cases. The only way to determine this is by a survey. The unit for a survey should be a county. Such survey should include the morbidity statistics of the Department of Health, a topographical survey, and an inspection of each possible mosquito-breeding body of water to determine the presence or absence of anopheles larvæ along the borders. Such a survey requires the services of a man trained in mosquito work and today there are few trained men who can intelligently act in an executive capacity.

It has been found impracticable to confine the control work to small communities as the mosquito is migratory in the nymphæ stage. It has been found that the only practical method of control has been to attack the pest in the larval state, getting rid of them before they are "on the wing."

The segregation of malarial carriers is an impossibility but the elimination of the host is practicable as has been shown by results in Panama, Havana and other tropical countries.

The application of the methods of elimination involve expense, technical knowledge, intelligence, and constant vigilance. Now is the time to prepare for the next year's campaign. Maps must be drawn, the organization of the personnel of the field and office forces must be perfected. Supplies and oil must be purchased as well as tools and machines for transportation. If all these details are left till summer the field force would be unprepared to deal adequately with the larvæ. It has been well stated that the efforts put forth to kill one mosquito on the wing will dispose of a thousand in the larval stage of its development.

A. D. J.

MALPRACTICE SUITS ARISING FROM THE BREAKING OF NEEDLES.

It appears from a number of malpractice suits brought against physicians based upon the breaking of hypodermic, aspirating, suturing and lumbar puncture needles, that the effort of the physician to safeguard his patient after such accident has not been reciprocated by a proper attitude of fairness by the patient when he subsequently sues the physician. The physician should be familiar with the rulings of the court so that he can guide his conduct, not only to protect his patient, but to prevent the patient from taking an unfair and undue advantage of him because of the accident.

We advise, therefore, based upon experience in numerous cases of this character, that when a needle is broken and not immediately found and removed, that the physician at once advise the patient, if that course is practicable and will not unduly disturb the patient in making recovery, or advise some responsible member of the patient's family or friend if there be no such member of the family available, that such accident has happened and what if any, immediate procedure should be followed for the removal of the needle. Endeavor in these circumstances likewise, to get consent before undertaking even a minor surgical procedure for the removal of such needle so as to avoid any subsequent claim being made that such minor operation was performed without the patient's consent. This course of procuring the consent thereby prevents the patient from asserting any claim that such operation was without consent and therefore, was an assault upon him. Where such claim of assault is made, there is but one question for the court's decision and that is, that of the patient's consent, and no medical testimony other than such as might prove the operation an emergency and inability to get consent would avail the doctor. On the plaintiff's side, no medical testimony whatever would be needed.

Under no circumstances, permit the needle to remain in the body of the patient without such advice being given, as such conduct may lead on the part of the patient, to a subsequent claim that the physician has been guilty of concealment and thereby has prevented the patient from consulting other professional help for the removal of the needle.

The observance of these simple rules of procedure will be a great protection to the physician against claims of exaggerated damage by the patient and will prevent a false and sinister construction being placed upon the physician's silence. The courts recognize that needles used in surgical procedures do sometimes break even when the utmost skill and care are employed and do not hold the physician liable for the mere breaking of the needle, but the law is strict and even harsh in placing responsibility on the physician where such accident has not been disclosed to the patient and the patient's consent received for the necessary surgical procedure to remove the needle.

The same general principles may be applied in other branches of the physician's relation with his patient and the physician should remember that his duty is one not only to his patient, but also one to protect himself against unjust claims being made against him by the patient.

G. W. W.

IN RE MEDICAL DIRECTORY

An erroneous idea regarding the Medical Directory of New York, New Jersey and Connecticut should be corrected immediately. This Directory has been published annually for a number of years, and is of the greatest value to a very large number of the members of the Medical Society of the State of New York. The writer is one of those who consult it many times daily. But a large number of our members in country localities rarely use it, they say, and they object to the supposedly large expenditure made from our treasury in printing it. This objection is founded upon error and want of information. The true statement of expense is as follows, from the Treasurer's report:

Cost of Directory.....	\$12,925.41	
Income:		
Advertisements	\$3,560.65	
Sales	2,723.75	
		6,284.40
		\$6,641.01

Thus we see that the net cost to the Society is only \$6,641.01, which we may consider as apportioned among the 9,800 members of the Society—a mere trifle *per capita*. The only inference to be made, therefore, is that no word should be raised against a continuance of the publication on the present lines.

A. W. F.

VOLSTEAD PROHIBITION AND THE PHYSICIAN.

In November, 1919, there went into effect the National Prohibition Act, familiarly but not affectionately known as "The Volstead Act," named after the congressman who successfully introduced it, and who was defeated for re-election in November, 1922. This Act made operative and defined the prohibition amendment to the Federal Constitution which was proposed in Senate Joint Resolution during the 65th Congress of the United States, and was thereafter ratified by the legislatures of 36 States, being three-fourths of the whole number of States in the United States, which action validated the proposed amendment.

Part of Section 6 of this Act runs as follows: "No one shall be given a permit to prescribe liquor unless he is a physician duly licensed to practice medicine and actively engaged in the practice of his profession. * * * Every permit shall * * * give the name and address of the person to whom it is issued, and shall designate and limit the acts that are permitted and the time and place where such acts may be performed."

In Section 7 occur these sentences: "No one

but a physician holding a permit to prescribe liquor shall issue any prescription for liquor. * * * Not more than a pint of spirituous liquor to be taken internally shall be prescribed for use by the same person within any period of ten days, and no prescription shall be filled more than once."

Physicians are nearly a unit in the desire to continue forever the abolition of bars and saloons, and all places where a single drink is sold. Physicians form an absolute unit in the belief that they are the only ones who know how much at a time and how often an individual patient needs alcoholic stimulant. The linking of excessive indulgence in alcoholic beverages with their use as medicines by medical men is absurd and very unjust, works a hardship and interferes with the proper and legitimate practice of medicine to which the licensed physician is entitled, and which cannot constitutionally be denied him by an Act which nullifies the qualifying State Act passed by a Commonwealth independently invested with the power it has exercised.

It is academic and foreign to our present contention to say that the Volstead Act was designed to protect the weak brother, and save the people of our country from the real danger of mental deterioration, of incentive to crime, and of dependency. All this is granted. But by what right do laymen, or even other physicians, decide how much of any remedial agent the attending physician shall employ, or in what form he shall use it, in conscientious care of his individual case of illness?

The answer is that cases are known in which physicians have ordered alcoholics for beverage purposes and in beverage amounts. Very well. Let these malefactors be denounced to the proper legal authorities by those who have this knowledge. Shear the question of all outside arguments and all obscuring platitudes and come down to the consideration of the authority and the responsibility for prescription of remedies, in kind, quality and frequency; they are the physician's, and his only. Shall we expect Congress to tell us how much strychnine to prescribe? Strychnine is a deadly poison—in improperly massive doses. Should not the lay Solons at Washington control this drug also?

The writer's experience is not unusual. He has frequently an aged patient who thrives on the judicious use daily of stout, or liquid bread, or malt extract—call it what you will. He cannot prescribe it (and nothing will take its place) because no brewer is allowed to make it, under the limitation of the Volstead Act. It needs 2.75 per cent. of alcoholic content to keep it, and Volstead limits brewers to one-half of one per cent. in any product containing alcohol. But this old lady, denied the medicinal relief of stout,

may be kept intoxicated for five days a week on a pint of whisky containing 65 per cent. of alcohol, legally and properly; for a pint may be prescribed for her under the law every ten days. So much for consistency.

It is very refreshing to learn that over 100 reputable N. Y. physicians have formed an organization to test the constitutionality of the part of the Volstead Act which limits the dosage of alcohol in its medicinal use by physicians, and, incidentally, the variety of alcoholic product, whether distilled or fermented.

In its control of the purchase and sale of alcohols the Federal Government has a plain duty in protecting physicians. It should inspect, seal and guarantee the quality of each pint or larger package sold, if it is to continue to limit the places of purchase.

The thoughtful co-operation of all intelligent people should be enlisted on the side of their physicians.

A. W. F.

ABRAMS, THE MIRACLE MAN.

People love magic and mystery and desire it above medicine. Statements which cannot be understood have a fascination for the immature or the unstable mind, and claims that the impossible can be accomplished are extremely alluring. Everyone likes to close one's eyes and be hoodwinked by the clever tricks of the professional prestidigitateur—for an hour; but few except the credulous and those of immature power of judgment can believe in and accept extravagant claims that do not bear the test of reason and that are contrary to all experience.

Yet such is our fatuity that large numbers of sufferers, grasping at any possible relief, rational or absurd, will believe in the preposterous theories of Dr. Albert Abrams, now exploiting his "dynamizer," his "measuring rheostat," his "electronic reactions" and his "oscilloclast." Even some physicians, dreamy theorists with insufficient balance, or unprincipled commercialists, are using Abrams' paraphernalia and coining money by duping wretched sufferers, eager for relief.

Abrams claims he can diagnose from a drop of blood on a piece of blotting paper the age, sex, race and disease of a patient he has never seen. Yet more; he claims he can diagnose all these things from an autograph of an individual, living or dead, affirming syphilis, leprosy, tuberculosis or what you will. Thus the "electronic reactions" from an autograph of Henry Wadsworth Longfellow showed congenital syphilis, as was also the case with an autograph of Edgar Allen Poe, which also gave the "reactions of dipsomania."

If the invalid appears in person, Abrams per-

cusses his abdomen while the patient faces West, and maps out areas of dulness, while an electrode is pressed to the patient's forehead, connected by means of a wire to the "measuring rheostat." Abrams finds in the abdomen distinctive areas of dulness which determine the religion of the victim. Thus, in his house-organ, *Physico-Clinical Medicine* for September, 1922, he maps out the areas of dulness for (1) a Catholic, (2) a Methodist, (3) a Seventh Day Adventist, (4) a Theosophist, (5) a Protestant, and (6) a Jew. The dulness for a Protestant he finds in the right iliac fossa, while that for a Methodist in the left lower quadrant. Since when did Methodists cease to be Protestants? The Jew exhibits to Abrams a very large area of dulness in the right lower quadrant. What would happen if he should become a Christian?

Abrams claims a specific vibration rate for each drug. He has devised therefore an instrument termed an "oscilloclast" capable of producing vibrations of varying rapidities. Instead of administering a drug, he applies the "oscilloclast" to the patient, and moves its indicator to a number corresponding to the vibration rate of the indicated drug, and the therapeutic action of that drug is thereby secured, he claims.

The "oscilloclast" is not for sale. It is leased to those who pay for it and who sign a contract that they will not open it. We have a hazy remembrance of a similar restriction upon examination in the case of the "Oxydonor," a swindling device sold to the credulous, under the claim that if it be put in a pail of water with the attached cuff firmly placed about the ankle, oxygen from the water would be transferred to the system of the sufferer. But the "oxydonor" must on no account be opened. For about a year dupes purchased this instrument, and daily sat with seraphic smiles on their little innocent, upturned faces, believing that oxygen was just rushing, in torrents, into their veins.

The facts are these: (1) Diseases do not cause such areas of dulness as Abrams claims. (2) No information can be elicited from the forehead which will assist in diagnosis. (3) Religious beliefs do not cause areas of dulness in the abdomen. (4) The secrecy which necessitates a contract not to open the "oscilloclast" would be unnecessary if the claims for it were honest. (5) Abrams refused absolutely, a few years ago, to co-operate with Dr. Sol. Hymans and Dr. Alfred C. Reed, of San Francisco, in an investigation of his method applied to the blood of clinical patients. (6) During the past Autumn, while in Boston, Mass., Abrams claimed to find by his method, in a healthy individual, streptococcus infection, tubercu-

losis of the intestinal tract, congenital syphilis and intestinal sarcoma. At the conference where this claim was made, the physicians who sat near could not see or hear any reactions while his followers, far distant, claimed to be able to do so. Abrams persistently refused to submit his methods to tests that could be scientifically controlled.

It would be well for all physicians to inform inquiring patients of these facts and save them from expense, discouragement and humiliation.

Is it not time for the Federal Government to take up this matter of the pretensions of Abrams with a view to closing the U. S. mails to him if he be found by Washington authorities to be an impostor? A. W. F.

CONSCIOUS AUTOSUGGESTION RUN RIOT.

Information is prized above education. There is no hungering and thirsting for knowledge apparent to-day; the utilitarian spirit rules in education.

The infant prefers to grunt and point, rather than speak, and many a mother obeys the gesture and thus encourages the babe to defer the acquisition of speech.

The young child does not want to learn to read, and, therefore, fatuously yielding to his disinclination, many a parent does not insist upon teaching him to read at a reasonable age.

In college, to the moderately prepared student is offered a list of elective studies, from which his inclinations prompt him to choose what he already knows, or what is easiest for him. Mathematics (perhaps the best agency for general mental development) is rejected by the boy, because he is not going to be an accountant. Greek and Latin, those splendid, enduring humanities, whose conscientious study gives real culture, are refused by him because they are not spoken languages. The departments of Natural History are derided by him because he does not care a continental for sticks and bugs and rocks.

Hence he acquires a slight familiarity with English branches and little else; and in later years, when his deficiencies are easily recognized and his mediocrity is plainly apparent, people wonder if he really ever achieved a collegiate degree.

Of course, he should be gauged and surveyed by a mature educator, and the needful should be prescribed for him, to round up the beginning of a well-balanced education that college should give, without appeal, exactly as a proper course of gymnastics is prescribed for him, without recourse, by the physical director to enlarge groups of spindling muscles and secure a general average physical development.

In the absence of such guidance and control, youthful zest and acquisitiveness are devoted to less valuable mental developpers, and are largely

frittered away upon excessive social enjoyment and sports, in the precious formative and absorptive period of juvenility, which, alas, soon terminates and never returns!

The result of this mismanagement and waste is a large number of credulous skeptics, gullible primitives, and citizens with little power of discernment or of judgment. The unusual, the bizarre, the crude, the elementary appeals to them, especially if its acceptance involves no exertion or effort. In support of this statement, witness the wide popularity with our best people of the colored Sunday supplement of the large newspapers, or the eager approbation of "jazz music" and of "coon songs," or the undisguised approval of the cheapest farce-comedies on the boards.

Our erudite colleague, Dr. James J. Walsh, stated in a lecture on Dante that the best seller among any books for a year past, a work that ran into hundreds of thousands of published copies, was not a history, not a book on one of the natural sciences, not a story of travel or of discovery, not a brilliant novel, but that cleverly drawn series of pictures, with explanations, published on the "funny page," and entitled "Bring-up Father."

So we are ready for conscious autosuggestion run riot.

Perhaps the most undermining mental agency is fear. It is stronger than hope, it is more potent than love, it is more disabling than bereavement and grief, it is more damaging than even anger. Fear, reduces efficiency, paralyzes muscles, devitalizes the organs of circulation and nutrition. When a prey to fear, one seeks protection, a hiding place, the defensive help of a stronger person, and naturally turns to a higher than human agency, a supreme power. This has been the pathetic attitude of humanity from time immemorial.

Hence arose placation of the supposedly evil forces, as well as the enlistment, by propitiatory rites, of the supposedly good forces. The greater the average of illiteracy the deeper the belief in good demons and bad demons, and in methods of cajoling or resisting them. Among the rites or ceremonies esteemed as of great avail in the earliest times were incantations. In the second century a favorite incantation, quite familiar to us, was the word Abracadabra. This arbitrary word, written on parchment, in acrostic or pyramid form, was worn beneath the clothing folded in the form of a cross and so suspended by a strip of linen from the neck as to lie against "the pit of the stomach." Similarly in kind is the anulet recently suggested by an opera singer as a remedy for seasickness, which consists of an empty, flat glass bottle, so suspended from the neck by a ribbon as to lie against that same overworked "pit of the stomach."

Abracadabra was supposedly potent in protecting the individual against fevers, and especially against agues. It was adopted by one of the exponents of the Gnostic School, and taken with such intense seriousness that minute directions for the use of this charm were given in the *Præcepta de Medicina* by Serenus Sammonicus.

In the rites of the Negro Voodoos the use of incantations was prominent, generally to invoke upon enemies the wrath of the evil divinities.

The Chinese had their prayer-incantations printed on slips of paper which were affixed to a solid cylinder provided with winch and axle. The worshipper stood before the deity addressed and whirled the wheel about over a hundred revolutions, this action being equivalent to repeating the incantation as many times with as little effort of mind or of organs of speech—a plain lesson in conservation of devotional action, or ecclesiastic economy, if you will. This action is quite comparable to the acts of the average movie-goer, who absorbs what he can without effort; or to the activities of the day-old robin, who opens his bill and rouses himself only when a worm is dropped therein.

There is a survival of heathen superstition in Christendom. There is a belief in and fear of signs and omens, to our humiliation be it admitted. We are all too familiar with the dread of Friday's influence; the dismay at the breaking of a mirror; the fear of the number thirteen; the affright at anyone's opening an umbrella in the house; and that widespread idiocy of "knocking on wood" to avoid evil influence or "bad luck," if one has recounted good fortune, or reported good health, or published success.

Part of this survival of superstition consists in the repetition of incantations, which plainly include the formula: "Every day in everyway, I am better, I am better." This method is no wiser than it is new, when used with the indiscrimination of a new apostle of a method of allaying fear, while it will in no sense cure disease.

Many years ago a Roman patrician uttered the sneer: "*Populus vult decipi; decipiatur ergo.*" But today we feel that it is the province and the duty of the medical profession to lead and instruct the people and prevent loss of money and bitter disappointment through following fallacies.

In the Proverbs of Solomon we read: "As he thinketh in his heart, so is he." That is, if a man be encouraged to harbor only sound and sane thoughts, he will be sound and sane. Suggestion is not new; it is as old as the Sphinx, that great mystery which has stood for ages inscrutable upon the plain of Thebes. We all know that discouragement and hope deferred, the feeling of inadequacy as well as of actual pain, cause a lack of interest and of effort, with a resulting loss of appetite and of sleep. Secondarily, therefore,

circulation and nutrition are impaired and the patient grows worse. Let us secure tranquility and serenity, encourage and enhearten by means of suggesting possibility of improvement, and by magnifying good features, and the patient will improve, because he sleeps and is nourished. Let us continue to allay apprehension, therefore, and to reassure; to teach the patient to cast out fear; to be reasonable; to take up his symptoms with common sense; to refuse to be stampeded by vague fears, or dread, or "vain imaginings"; teach him to say to himself that he will brace up, buck up, forget his limitations and do his best. Give him some of that sterling poem of W. E. Henley:

"Out of the dark that covers me,
Black as the pit from pole to pole,
I thank whatever gods may be
For my unconquerable soul.

In the fell clutch of circumstance,
I have not winc'd or cried aloud.
Under the bludgeonings of chance
My head is bloody, but unbowed.

It matters not how strait the gate,
How charged with punishment the scroll;
I am the master of my fate,
I am the captain of my soul."

Let him also remember the words of wise old King Solomon: "A merry heart doeth good like a medicine."

To adopt this method with oneself is to adopt philosophy through autosuggestion, and physicians who are also psychologists have always used this helpful and proper agency, paving the way for the only really curative power in all cases (as all physicians take pleasure in admitting) the great *vis medicatrix Naturæ*.

But when he goes beyond reason and experience and claims cure, through autosuggestion only, of asthma of 8 years' duration with severe orthopnoea; of paralysis of the lower extremities lasting for 2 years as a result of injuries "at the junction of the spinal column and the pelvis"; of a person "in the last stages of consumption," who becomes perfectly well; of gout; of eczema; when these things are reported we become gravely concerned lest an advocate of such alleged cures is self-deceived, and lest his statements may raise false hopes and eventually result in bitter disappointments and much added distress. For we know that no more unsafe principle could be adopted in caring for the sick than to agree with the translator for the latest advocate of autosuggestion when he enunciates emphatically: "Treatment consists in prediction of recovery."

Volatile, excitable, credulous as we Americans are, we will flock in great numbers to hear any new advocate of the old, old agency; but when the furor blows over, when "the tumult and the shouting cease," there will be just as much autosuggestion as before—no more, no less.

A. W. F.

**TO THE CALIFORNIA MEETING IN
JUNE 1923!**

Physicians who are thinking of traveling westward next June should get into communication with the Secretary of the State Society, Dr. Edward Livingston Hunt as soon as possible.

A.M.A. tours are in preparation now. Large groups of families and friends of physicians can be very pleasantly and inexpensively routed together—but the time is short for making the best arrangements through railroads and hotels.

BRONX PEDIATRIC SOCIETY.

The Bronx Pediatric Society, organized November 2d, 1922, has for its object the advancement of the knowledge of Physiology, Pathology, and Therapeutics of infancy and childhood. Will hold its first meeting Wednesday, December 13th, 1922, 8.30 P. M., at Dr. I. J. Goldberger's office, 2562 Grand Concourse. Subject, "Pediatric Activities in Europe."

**NATIONAL BOARD OF MEDICAL
EXAMINERS.**

The National Board of Medical Examiners announces the following dates for its next examinations:

Part I: February 12, 13 and 14, 1923.

Part II: February 15th and 16th, 1923.

The fees for these examinations have been continued at the reduced rate for another year. Applications must be forwarded not later than January 1, 1923. Application blanks and circulars of information may be obtained from the Secretary of the National Board, Dr. J. S. Rodman, Medical Arts Building, Philadelphia.

NOTES.

Dr. Nelson K. Fromm of Albany has been appointed to take charge of the Department of Kidney Diseases in the *Progressive Medicine*, edited by H. H. Hare of Philadelphia, Pa., a yearly publication.

The American Gynecological Society will hold its next annual meeting in Hot Springs, Va., May 21, 22 and 23, 1923.

The 13th Annual Meeting and Luncheon of the National Committee for Mental Hygiene was held at the Pennsylvania Hotel in New York on November 9th. Addresses were made by Dr. Haven Emerson, Professor Stephen P. Duggan and Mr. John J. Carty of New York, Professor Elton Mayo of the University of Queensland, Australia, and Dr. Frankwood E. Williams, Medical Director of the National Committee.

Deaths

BARNES, FRANCIS GRANVILLE, Hamburg; Hahnemann, Chicago, 1885; Member State Society. Died October 17, 1922.

BREWER, FREDERICK H., Utica; Albany Medical College, 1878; Fellow American Medical Association; Member State Society; Staff Faxon Hospital. Died October 24, 1922.

FEINBERG, MOSES MURRAY, New York City; College of Physicians and Surgeons of New York, 1913; Fellow American Medical Association; Member State Society; Alumni Lebanon Hospital; Assistant Admitting Physician Lebanon Hospital. Died December 1, 1922.

GARDINER, HULL S., Hamilton; Bellevue Medical College, 1868; Member State Society. Died November, 1922.

HARRIG, PERCIVAL WILLIAM, Albany; Albany Medical College, 1906; Fellow American Medical Association; Member State Society; Attending Physician South End Dispensary. Died October 28, 1922.

HOARD, VOLNEY A., Rochester; New York Homeopathic Medical College, 1881; Member State Society. Died November 7, 1922.

HOWK, LOREN WHITNEY, Rochester; University of Michigan, 1891; Fellow American Medical Association; Fellow American College of Surgeons; Member State Society; Rochester Pathological Society; Academy of Medicine; Surgeon County Hospital; Associate Surgeon St. Mary's and General Hospitals. Died October 22, 1922.

HUNTER, GARNET L., Westfield; Toronto, Canada, 1898; Fellow American Medical Association; Member State Society. Died November 8, 1922.

LOWN, MARCUS M., Rhinebeck; Albany Medical College, 1877; Member State Society. Died November 13, 1922.

MOSHER, JESSE MONTGOMERY, Albany; Albany Medical College, 1889; Fellow American Psychiatric Society; American Neurological Society; Member State Society; Physician Albany Hospital and Albany Dispensary. Died December 7, 1922.

SCOTT, WALTER A., Niagara Falls; Syracuse, 1892; Fellow American Medical Association; American Roentgen-Ray Society; Member State Society; Academy of Medicine. Died November 6, 1922.

NOTES FROM THE STATE DEPT. OF HEALTH.

DR. COON TO SERVE AS CONSULTING ORTHOPEDIST.

Dr. Clarence E. Coon of Syracuse University has accepted the invitation of Commissioner Biggs to serve as Consulting Orthopedic Surgeon of the State Department of Health. Dr. Coon graduated from Syracuse University in 1898, and has practiced orthopedic surgery in Syracuse for a number of years. He is now Professor of Orthopedic Surgery of the Medical Department of Syracuse University and Orthopedic Surgeon of St. Joseph's Hospital and the Free Dispensary in that city. He is an active member of the Rotary Club of Syracuse, the first club to take up the work of the care of crippled children. Dr. Coon has been much interested in the efforts of the State Department of Health to promote the after-care of poliomyelitis cases and frequently gives his counsel and performs operations in these cases. His appointment gives the department two consulting orthopedists, Dr. Robert W. Lovett of Boston having served in the same capacity since the initiation of the after-care work in New York State under his direction, following the great epidemic of poliomyelitis in 1916.

BOTULINUS AND ANTHRAX SERUMS.

The Department is occasionally asked whether the State Laboratory furnishes botulinus and anthrax serums. Botulinus serum is produced and distributed by the State Laboratory. Two types of bacillus, each producing a different toxin, have been recognized. They have been designated as A and B. The laboratory produces two separate monovalent serums. Since the immediate determination of type is not practicable, either a polyvalent serum or both the A and B serums mentioned above may be used. The latter may be combined or given separately. Theoretically, on account of the high titre of the A serum, a relatively larger amount of B serum should be given. The serums are distributed on *direct application* to the laboratory, in bottles of 20 cc. From 40 to 80 cc. should be given intravenously at the earliest possible moment.

The Laboratory does not produce anthrax serum, its actual value as a therapeutic agent not yet having been fully determined. The Department is, however, at present prepared to furnish it in limited quantities for use in emergency, upon direct application to the Division of Laboratories and Research, New Scotland Avenue, Albany. It is put up in bottles containing 50 cc.

TEACHING PUBLIC HEALTH TO MEDICAL STUDENTS.

The State Department of Health is co-operating with the Albany Medical College in giving instruction in public health and sanitation to the fourth year medical students. In addition to the regular courses in hygiene hitherto given at the school, arrangement has been made this year for a series of sectional exercises and field trips calculated to give the students practical demonstrations of the Department's work. The senior students visit in turn the ten divisions of the State Department of Health for informal conferences and observation of the methods of following up epidemics, of holding a field consultation in tuberculosis and child hygiene, of registering births, marriages and deaths, of the inspection of water supplies, sewage disposal plants, pasteurization plants, the making of laboratory examinations, the distribution of laboratory products, etc. It is believed that students who have had opportunity to make even this brief survey of the working of the State health organization will acquire a mutually helpful understanding of the actual meaning and eventual utilization of the various reports and procedures which will mark their working relations with the State Department of Health as soon as they enter private practice.

VACCINATION BY NURSES.

The Department has received word of an instance where vaccinations against smallpox have been performed by the office nurse of a local health officer, and has pointed out that such procedure is apparently in direct violation of Section 311 of the Public Health Law, which states that none but a duly licensed physician may perform vaccination in the State.

NEW EDUCATIONAL REQUIREMENTS FOR PUBLIC HEALTH NURSES.

The Public Health Council has just adopted a resolution requiring that after January 1st, 1924, public health nurses appointed by county and municipal authorities shall possess the following qualifications:

(1) They shall be not less than 21 years of age at the time of appointment.

(2) They shall be registered nurses.

(3) They shall have completed a course in public health nursing approved by the Public Health Council.

These educational standards have been adopted under the provision of the State public health law, which directs the Public Health Council to prescribe the qualifications of local health officers and public health nurses, as well as those of the directors of divisions and sanitary supervisors of the State Health Department. Similar qualifications were formerly required of public health nurses in the public service, but owing to the great shortage of nurses during the war it was necessary to relax the rules. The Public Health Council believes that the time has now come when it is possible to re-establish these requirements for all public health nurses employed by the State and municipal authorities, and that the standards thus set in the public service will be practiced and adhered to by most private agencies that employ nurses in public health work.

RADIO HEALTH TALKS TO BE GIVEN BY PROMINENT PHYSICIANS.

In continuing the program of weekly radio health talks broadcasted from the Station WGY at Schenectady, N. Y., Dr. Hermann M. Biggs, State Commissioner of Health, has invited a number of well-known sanitarians and public health workers to prepare addresses to be given in this series. Among those whose co-operation has been sought in developing this new agency of public health education are Dr. Victor C. Vaughan of the National Research Council, Dr. Simon Flexner of the Rockefeller Institute, Dr. Milton J. Rosenau of Harvard University, Dr. Haven Emerson, Professor of Public Health of Columbia; Professor C. E. A. Winslow, who occupies the corresponding chair at Yale; Mr. Homer Folks, Secretary of the New York State Charities Aid Association; Dr. Donald Armstrong, Director of the National Health Council; Dr. Walter B. James, President, and Dr. Frankwood Williams, Medical Director of the National Committee for Mental Hygiene; Dr. Livingston Farrand, President of Cornell University; Dr. Philip B. Van Ingen of New York, and other physicians and health workers of like standing. Many of these have already indicated their willingness to prepare popular health talks for this service.

The State Commissioner of Health believes that in view of the many addresses on health subjects that have been broadcasted from other radio stations by speakers who have little or no qualification to discuss medical subjects, the discriminating patrons of the radio programs will be glad to listen to a series of health talks from WGY given by men of unquestioned attainments and established position in the scientific world.

PRUNES.

Contributions Invited

Feelings.

A New York banker, aged eighty, recently, seriously grieving over the loss of his wife with whom he had lived many happy years, was advised by a friend to try "Christian Science." He was introduced to a healer, a handsome woman who lived in a beautiful home and wore beautiful clothes, and possessed a beautiful voice. The old gentleman told her his story and she proposed that they kneel down. Holding his hand she read to him from Mary Baker Glover Eddy's books at great length. Then she rose, and when he had risen she said brightly: "How do you feel now?" "Well," said he, "I feel like a damned fool! How do you feel?"

First Class.

A distinguished Brooklyn physician tells of a lady who recently acquired a parrot guaranteed by the bird man to have been well bred and carefully educated. The lady stipulated against profanity and was assured that "ze bird have jus come over in ze first cabin."

The parrot was kept in the dining room and on the occasion of a dinner party given soon after his arrival the hostess and her guests were shocked to hear the parrot exclaim, on the entrance of the butler with the soup: "Steward, quick, the basin!"

Maud Muller, on a summer's day,
Raked the meadows sweet with hay.

As she hove the hay (she was quite a heaver),
She sneezed and said, "Darn this old hay fever!"

As she pitched and tossed the far famed hay,
Who should come by but Doc. Coué.

"Get better, kid," said the doctor, "please.
It's silly to sneeze and sneeze and sneeze."

And Maud now sings as she rakes the hay,
"I'm better and better in every way."

Possibly Doc. Coué's effect on journalism is best shown in the A. P. dispatch from London, which says: "Day by day in every way the situation grows complicated and more complicated."

Heaven's Demand.

Dr. Blake, the town's sole physician, was, in his additional capacity of Sunday School superintendent, questioning a class on the day's lesson.

"What must we do to get to Heaven?" he asked.

"We gotta die," replied a bright scholar.

"Of course," said the doctor. "But what must we do before that?"

"We must get sick and send for you," was the reply.

Precocious.

The Riches are each twenty-eight years old. They were married in February, 1921, and the baby boy born six weeks ago was their first. He is an accountant for the Underwood Typewriter Company.—From a news item in the *New York World*.

An Error in Calculation.

Host (to guest, a retired doctor)—"And did you ever make a serious mistake in your diagnosis?"

Guest—"Yes, one serious one—I once treated a patient for indigestion and she could easily have afforded appendicitis!"—*The Passing Show (London)*.

Accomplished.

"Everybody should lie on the right side," is the advice of a medical man. The only exception, we gather, is the politician who can do it on both sides.—*Punch (London)*.

De Mortuis.

"Say, pa."

"Well, my son?"

"I took a walk through the cemetery today and read the inscriptions on the tombstones."

"Well, what about it?"

"Where are all the wicked people buried?"—*Syracuse Orange Peel*.

Defeat.

Before them stretched a white world—and how bitter, bitter cold it was! Cold whiteness above them as unfriendly chill as the expanse beneath, pressed down and enclosed them in a relentless circumference. Cold, Cold, so numbing cold! Side by side they advanced, just the faintest perceptible progress at every effort, clinging close to each other for such modicum of warmth as each could give the other. Perhaps they might have withdrawn; yet pride, or conscience, or whatever the impelling power might be, goaded them forward into the very teeth of the cold that drove them back. The very whiteness of it seemed to add to the chill. Yet darkness was all about them! They knew that it was white above and white beneath, in spite of the pitchy night.

At last they stopped. Will power could force them no farther. Clinging close, futilely intertwining, for each seemed now to add to the chill, rather than to the warmth of the other, they reached the point of utter surrender. It was horrible, horrible! The freezing whiteness pressed down from above, pressed upward from below, and the two were naked, utterly naked. They were my feet, and I simply could not force myself to push them farther down into the bed.—*B. J., in Life*.

An old woman was recovering from a long illness, propped up in an easy chair, with a sweet-faced parish visitor sitting beside her. This was a newspaper picture. Beneath the picture was this conversation: "And was your husband good and kind to you during your long illness?" asked the visitor. "Oh, yes! He was so good and kind he was more like a friend than a husband."

A Millionaire in the Making.

"I hear you've quit clerking and are going into business."

"Yes; I picked up cheap a penny weighing machine and a good soda fountain second hand, got the agency for Goo-Goo Chocolates and have a cellar full of hooch and a doctor friend around the corner, so I'm going to start a drug store."

Substitute.

A young man, who had heard that radium was going to cure the world of all its ills, entered a chemist's shop and asked:

"How much is radium an ounce?"

The chemist smiled and named a figure which made the young man blink.

"Really?" observed the customer. "Then give me an ounce of cough lozenges."

Interested.

Grad—"This university certainly takes an interest in a fellow, doesn't it?"

Tad—"How's that?"

Grad—"Well, I read in the graduate magazine that they will be very glad to hear of the death of any of their alumni."—*Siren*.

DEPARTMENT OF FICTION.

THE CAUSE OF DEATH.

By ALBERT WARREN FERRIS, A.M., M.D., F.A.C.P.

CERTAIN of being aroused by the nurse during the next hour, I had flung myself down on my bed without removing any of my clothing, in the attempt to secure the refreshment that an occasional snatch of sleep furnishes the hospital physician who is called up at night. Across the room gently snoring, lay my colleague, Dr. Rivers, the soundest of sleepers.

The gas was turned down, and but a feeble gleam entered from the connecting room. In that room I should have found Dr. Waite asleep; but evidently he had been lying on the outside of his bed, and he was now absent.

Through the thin partition wall I could hear the slight groans of the patient I expected soon to be summoned to attend. In an instant I fell into a doze. A muffled voice directed into my ear aroused me, and, standing over my bed I recognized Waite. "How much atropine do you give as a dose?" he asked, without preface or apology.

I had never liked Waite. Easy-going, irritably slow in his talk, his gait, his every movement; forever asking questions of the most unnecessary nature about the merest trivialities, he might have been tolerated, or even forgiven. But to these qualities he added an unrestrained propensity for punning. No theme was too sacred or too grave; no occasion was too important; no operation was too absorbing or difficult. He always contrived to interject a pun that diverted the attention of an assistant, or robbed the occasion of its proper dignity, or awakened in the mind of the patient a distrust of the apparently frivolous doctors.

Of course, as he was always in search of a joke, he necessarily stumbled upon a humorous thing occasionally; and it was only with an effort that some of the staff were able to frown consistently upon him and discountenance the practice. The result of its continuance was obvious. Waite was fickle and trifling, and had no habits of industry either in study or in practice. It was only with the greatest effort that he could persuade himself to go into his wards promptly after breakfast and attend to the wants of his patients. In fact, I know of one occasion upon which he wasted time over the newspaper and the view from the window until it was so late that he hated the idea of making rounds at all. So he sat in his room and wrote prescriptions in his order book without seeing his patients, trusting to a very ordinary memory to suggest necessary medication, and simply repeating former orders in cases in which he surmised the bottles might be empty.

It was not surprising, then, that I was annoyed at being awakened by the punster, with an examination question in elementary

Materia Medica about the dose of the principal alkaloid of Belladonna. To me at that time, that was not much of a joke, and I resented it. I rolled over and hurled at his abdomen the chair that stood at the head of my bed. He caught it, I am sorry to say, before it struck him. As I attempted to secure another missile, I was arrested by the earnest and anxious insistence of Waite, and his repeated inquiry.

"If you really want to know," I answered, "it depends upon the person, time, place, age, sex, and previous condition of servitude. What is it, you idiot, what is the case? Scarlet fever at the Nursery?"

"No," he answered, "it is that woman in 32. Will you come down and see her? I have been there for the past hour."

"Why, yes," said I, "if you are in trouble, I'll go down. But why in thunder don't you do your prescribing in the day time? Two o'clock in the morning is no time to study cases. I'm really too tired to go; I'll tell you that. But come on, what is the trouble?"

"It is that police case," gasped Waite; "you know about her. You sent her to my ward this afternoon."

So I did. I had climbed into the wagon that played substitute for an ambulance at our county hospital and there I had found a young woman and a policeman. She was charged with attempting suicide with poison, and had been run out to us that she might not die in the private hospital to which she had first been taken. Her death there would have caused trouble and publicity. So they passed her along to us in the heartless and practical way in which all the hospitals of the city acted toward us. Yet we managed to save enough of the apparently desperate cases thus sent us to keep our general average death-rate down to ten and one-half per cent. And that is a mighty good figure for a county hospital, half-equipped, with no regular visiting staff, and with a set of commissioners in charge whose only aim is to be more economical than their predecessors.

Many a time I had crouched under the cover of that old prairie schooner and edged alongside the mattress on which lay a delirious, or unconscious, or dead patient, or an alleged insane patient sent to us for observation and transfer. This time the patient was an unconscious girl. Cold, moist, and with a pallid, bluish face, she seemed lifeless. Her pupils were closely contracted, her lids sank slowly when raised. But with care, a feeble pulse was found, and very shallow and slow respirations were counted, though she could not be roused from her coma by gentle means.

The police officer who accompanied her stated that she was a suicide, and was under arrest, having been removed from her home

unconscious and incapable of being aroused enough to answer a question. Some over-zealous imbecile had poured whisky over her face, with a view to performing the impossible feat of "forcing it down her throat." Well, it was possibly opium poisoning, possibly apoplexy, possibly uremia, Acting in the absence of the medical superintendent I had sent her to the only available ward.

But that was twelve long hours ago; and now, at two in the morning, with a bunch of keys trembling in his hand, Waite was dragging me into a corner of the hallway leading from our rooms to the locked door that opened into the women's wing of the hospital.

"Do you think I've killed her? Do you think I've killed her?" he repeated anxiously, in a broken voice.

"I don't know anything about it," I answered, "but as it is you, I hazard a guess that you have. Pull yourself together and tell me what you have done," I commanded; "let me have the whole story."

"As soon as she was placed in 32," he began, "I applied external heat, and then, acting on the diagnosis of opium poisoning, I washed out her stomach, and gave her a hypodermic of atropine. Later I gave her one of caffeine. I have repeated the atropine occasionally since."

"Did her respirations become more frequent?" I enquired.

"Yes," he replied, "they came up to nine a minute, and her surface became warm and dry, and her face rosy. Later she lost ground again, and I increased the atropine. About eleven o'clock the night nurse called me, saying that she seemed peculiarly affected; she vomited a little, and great muscular relaxation followed. I have been back and forth to her room ever since. For Heaven's sake, will you not hurry down and tell me what to do for her?"

"Yes, yes, yes," I responded; "but for Heaven's sake will you not brace yourself, and put on a better front?"

We tiptoed down the three flights of bare wooden stairs and through the bare halls; but we did not escape the eagle eye of Charlie, the night watchman; and I'll wager that he had a memorandum in his report, turned in at breakfast time, to the effect that the acting superintendent and Dr. Waite were seen passing through the East wing in a stealthy and mysterious manner at 2.20 A. M. Entering Ward 32, we proceeded to Bed 4, where the patient lay.

"Well-nourished woman of about 25; thin, velvet skin; soft, fair hands that never did very hard work; beautiful hair and teeth," said I mentally, passing my hands over her forehead and then parting her dry lips. Glancing at the card over her bed I read: "Josephine Legrand. 912 Macon street. 25. Single. Religion unknown. Diagnosis and all the rest blank."

The night nurse stood at my elbow, and the patients in Bed 3 and Bed 5 listened intently and tried to see through the screen that walled off Josephine's bed. Her face was livid, her pupils widely dilated, her neck and chest of a bright scarlet. A slight convulsion occurred, followed by apparent paresis. Evidently a case of great gravity.

"My God! Is she dying?" cried Waite hoarsely.

"Hush," I hissed faintly in his ear, adding aloud, in a cheerful voice, "Oh no, she is not crying, she is only sighing in her sleep. I'm glad she is in no pain, and doing so well."

Turning to the puzzled night nurse I added, "Please turn down the gas, and let everybody go to sleep. Nothing further just now."

Then I seized Waite by his limp arm and walked him out of the ward. When we had reached the end of the long hall, I turned on him and, gripping him firmly said: "In the name of all the Saints in the whole blessed calendar try and exercise a little self-control and don't advertise a possible mistake to the nurse, the patients and the whole county."

"What do you think? What in Heaven's name is to be done?" he asked, in a voice of anguish.

"I am afraid she has had more atrophine than necessary," I said. "You have been in a blind panic for hours, evidently, or you would have seen that she could not have been saved. I've no doubt you did your best for her, and I do not believe anybody could have pulled her through," for I pitied him in his frenzy of fear.

"Now, let us consider. Calabar bean or jaborandi will antidote atropine, but she will not stand either of those counter-poisons. There is absolutely nothing to do. With the imperfect æration of her blood that her cyanotic face indicates, she is in imminent peril. You cannot check the failure of the respiratory and circulatory functions. Oxygen would be of no use. I will give this night-nurse a respite and put another one on duty. Tell the new nurse not to disturb the patient with any treatment, and be careful of what you say in her presence. I'll see you early in the morning."

With that, I gave the orders and went to my room.

An hour before breakfast, I met Waite in the hall, and his expression told the story. Immediately after breakfast it was the habit of the staff to go to the morgue, and plan the best time for the day's autopsies. The excellent custom prevailed for everyone to make an autopsy on each interesting or puzzling fatal case from his own wards, unless he had a service in the hospital that forbade the handling of infective material. Thus clinical study was supplemented with actual knowledge of the pathology of the case.

As I have said, with five men conscientiously devoting themselves to 400 patients, our death

rate was low. Strangely enough, the best physician of us all had the largest proportion of deaths; and so it was a sober group of men that gathered every morning and inspected the rude pine coffins, tinted with brown roofing paint, that were heaped upon the shelf by the side of the marble autopsy slabs, and read the names, the ward numbers and the bed numbers from the cards tacked on the ends of these primitive caskets. The only one Waite could see was labeled: "Josephine Legrand. Ward 32. Bed 4."

I don't know how Waite succeeded with his prescriptions that morning; but I am fairly sure that he ordered no alkaloids, and that he was more than usually painstaking and sympathetic. He was silent at luncheon. Not a pun came from him. While this relief was acceptable, it was very noticeable; and Waite was judiciously nagged by the men who had not been prowling about the hospital at 2 A. M.

In the middle of the afternoon, we met at the morgue, and Waite's case was the first prepared for the *post-mortem* examination. Showing some confusion, he began to stammer something about the autopsy's being unnecessary.

"What Cause of Death can you state in the certificate?" I asked in an undertone. "Go on and make your *post-mortem*."

Tremblingly he took up the knife and made the usual incision from episternal notch to *os pubis*, stripped back the soft parts and exposed the bony framework of the thorax. Severing the costal cartilages, he removed the triangle composed of breastbone and the cartilages, exposing the heart and the inner margins of the lungs. Grasping the heart and raising it from its bed, he suddenly started back and dropped his knife.

Coming over to my shoulder as if to look at the notes I was making for the record, he whispered, "I felt the heart throb and I think there is a peculiar oozing from severed capillaries, here and there."

The other members of the staff were smoking and chatting at a little distance, there being nothing to interest them till the thoracic organs were removed and placed on the next table for examination. They were probably laying small bets on the weight of the liver, or doing some other devilish thing—it was one of our few diversions.

Approaching the table I put my hand into the open thoracic cavity. It was warm, even hot. Josephine Legrand had died, the record said, two or three hours before. I took Josephine's heart in my hand. I suppose my hand trembled; but was there a tremor in the heart? Had the severed arterial twigs bled, here and there? Was Josephine alive, though fortunately still unconscious? Was I nervous?

It was an astonishing thing if Waite had noticed possibly the last spark of life, now

surely extinguished. Really, with a few years' study he might turn out a fair diagnostician yet.

"Well, my dear sir," I thought, as I turned to Waite and our eyes met, "where be your jibes now? Wretched punster and trifler, no wonder you are rattled. What are you dreaming of? Putting back the fragments? Are you dreaming of replacing the triangular gridiron of breastbone and costal cartilages, and stitching to each viscus the fragments of pleura, of pericardium, and of diaphragm, which adhere to its under side? Are you dreaming of stitching these things together and tying all bleeding points? Do you think for a moment that one can inflate one's lungs with a diaphragm that is slit and punctured? Poor devil, you are too incapable a diagnostician to have made out her dying condition yesterday, though there was plainly a fatal process at work all the time. Oh, weakening and infirm of purpose, let us get this morbid imagination out of our minds!"

The other men had stopped smoking and were looking at us. In a low voice I said to Waite rather sternly, "Oh, buck up! Take up that heart, cut it loose, and put it in the scale pan," adding aloud, in a nonchalant voice, "You were mistaken; the heart does not throb, and there are no oozing vessels, as a matter of course. Kindly proceed with your autopsy."

Waite picked up the knife, divided the large vessels, thus cutting the heart out, and put it in the scale pan. As I announced its weight aloud and noted it in the record book, Waite turned aside deathly white, and, pleading nausea, went to the door.

"What's the trouble?" inquired Rivers.

"Oh, Waite's nauseated with his last joke," I replied; "I'm not feeling too well myself. I am glad you did not hear it. Will you kindly finish his autopsy?"

Rivers was obliging, having already donned a gown for his own case, and the examination was completed rapidly. There was enough disease found in the kidneys to have killed half a dozen girls, and my record so states.

Waite therefore had a valid *causa mortis* to inscribe in his certificate. But at regular intervals during the remainder of my term of service he would bring up the dosage of atropine as an antidote to morphine, and the symptoms of opium poisoning in a uremic patient, with as much insistence as he used of yore to peddle his heavy jokes and his ill-timed witticisms. He was truly very tiresome.

Some months afterward I heard that Waite had sailed for the Netherlands on a transatlantic steamer. My sympathies were with the cabin passengers. The next I learned of him was to the effect that he had walked overboard at night in what was afterward decided to have been the delirium of ship fever.

Humph. Perhaps it was.

Medical Society of the State of New York

CLINICS AT OUR NEXT ANNUAL MEETING.

The Committee on Scientific Work has decided to make a special feature of clinics at our next Annual Meeting. It has, therefore, been agreed to set aside Thursday, May 24, for this purpose. Thus the reading of papers, in each Section, will be limited to three sessions, i. e., Tuesday afternoon, Wednesday morning and Wednesday afternoon. Thursday will be devoted to Clinics.

Dr. Parker Syms, who is Chairman of the Committee on Scientific Work, was authorized to appoint a special committee for this purpose. Dr. Seward Erdman has been appointed Chairman of this Committee, and will have entire charge of its organization.

The present plan is to have the Committee on Clinics co-operate with the Chairman of each Section, so that selective clinics may be arranged for. In this way, certain subjects which have been taken up in the Sessions of the Sections may be illustrated by properly selected clinical material and demonstrations.

This feature of making the meeting partly a clinical one is an innovation and an experiment, but it is hoped that the result may prove the wisdom of the decision of the committee to inaugurate it at this meeting.

District Branches

SECOND DISTRICT BRANCH

ANNUAL MEETING, BROOKLYN, N. Y.,
FRIDAY, NOVEMBER 10, 1922

The meeting was called to order in the building of the Medical Society of the County of Kings, and the following officers were elected for two years: President, Frank H. Lasher, Brooklyn; First Vice-President, Joseph S. Thomas, Flushing; Second Vice-President, Guy H. Turrell, Smithtown Branch; Secretary-Treasurer, Richard F. Seidensticker, Brooklyn.

The Scientific Session consisted of the following papers:

"Report of a Case of Fulminating Syphilis," Edward Livingston Hunt, M.D., Secretary Medical Society of the State of New York.

"Psychoanalytic Aspects of Neurotic and Psychotic States," Abraham A. Brill, M.D., New York City.

"The Maternity Welfare Project," Arthur C. Martin, M.D., Rockville Centre.

SEVENTH DISTRICT BRANCH

ANNUAL MEETING, NEWARK, N. Y., OCTOBER 4, 1922

The meeting was called to order in Grange Hall at 10 a.m. by the President, Dr. Ethan A. Nevin.

On motion of Dr. William I. Dean, seconded by Dr. W. Mortimer Brown, the following resolution was unanimously adopted:

"Resolved, That the Seventh District Branch of the Medical Society of the State of New York, in session at Newark on October 4, 1922, expresses its approval of any action taken by the Council increasing the annual dues, in order to widen the scope and usefulness of the State Journal, legislative efforts, etc.; and be it further

"Resolved, That a copy of this resolution shall be forwarded by the Secretary to each of the constituent societies of this district."

SCIENTIFIC SESSION

"Cancer Control," William I. Dean, M.D., Rochester. Discussion by Drs. John M. Swan, Rochester; E. Carlton Foster, Penn Yan, and Arthur W. Booth, Elmira.

"Intestinal Protozo," W. S. Thomas, M.D., Pathologist, Clifton Springs Sanitarium. Discussion by Drs. George W. O'Grady, Rochester, and Howard I. Davenport, Auburn.

"Some New Features in Differential Diagnoses of the Acute Surgical Abdomen," William H. Coe, M.D., Auburn. Discussion by Drs. Claude C. Lytle, Geneva; Alfred W. Armstrong, Canandaigua; Frederick W. Lester, Seneca Falls.

Address, Edward Livingston Hunt, M.D., New York, Secretary Medical Society of the State of New York.

Luncheon, 1 p.m.

"The State Medical Society," Arthur W. Booth, M.D., Elmira, President Medical Society of the State of New York.

"Efficient Medical Organization," William C. Woodward, M.D., Chicago.

"Aspects of Present Tendencies in Medical Legislation," James N. Vander Veer, M.D., Albany, Chairman Committee on Legislation, Medical Society of the State of New York.

"Irregular Practitioners," William L. Wallace, M.D., Syracuse.

The above three papers were discussed by Drs. Edwin MacD. Stanton, Schenectady; Arthur W. Booth, Elmira; William D. Cutter, Albany; Leslie D. Snow, Auburn; William I. Dean, Rochester.

"Repeated Abortion," James K. Quigley, M.D., Rochester.

County Societies

MEDICAL SOCIETY OF THE COUNTY OF ALBANY

REGULAR MEETING, NOVEMBER 8, 1922

The Meeting was called to order by the President, Dr. Thomas W. Jenkins, at 9 p. m. at the Adelphi Club.

The following members were present: Drs. Jenkins, A. B. Van Loon, E. A. Vander Veer, J. N. Vander Veer, Moore, Culver, Schneider, Freund, Traver, Hughes, J. Phelan, T. Phelan, Fromm, Kellert, MacFarlane, Kiernan, Rausch, Thomson, Hinman, L. Brown, G. Leonard, Gutmann, Curtis, Allen, C. E. Peck, Cutter, Olshansky, Bedell, Barrett, Morrow, Campbell, O'Leary, DeRusso, Todd and Worth.

Minutes of the previous meeting were read, and adopted with a correction by Dr. Bedell regarding Dr. Rooney's discussion of Dr. Faust's paper at the last meeting.

Dr. C. H. Moore and H. Richtmyer were appointed a committee to draw up resolutions on the death of Dr. Percival W. Harrig, former Secretary of the Society.

SCIENTIFIC PROGRAM.

Dr. A. H. Traver reported two interesting cases, namely: "Traumatic Asphyxia," discussed by Drs. Bedell and Traver; "Central Dislocation of the Head of the Femur."

Dr. A. S. Schneider read a paper on the History of the Ophthalmoscope. This was illustrated by slides. The paper was discussed by Drs. C. M. Culver, C. H. Moore, A. J. Bedell, T. W. Jenkins, and A. S. Schneider.

Dr. Vander Veer was unavoidably detained and could not report on the recent Congress of the American Society of Obstetricians, Gynecologists and Abdominal Surgeons.

Reports of the meeting of the American College of Surgeons this year were given by Drs. A. B. Van Loon, A. H. Traver and E. E. Hinman. These re-

ports were discussed by Drs. H. Peck, T. W. Jenkins and J. O. Kiernan.

Certificates of membership were presented to the following men who were admitted this year: Drs. J. O. Kiernan, E. J. Campbell, C. E. Allen, W. M. Hughes, T. Phelan, W. M. Thomson, A. L. Olshansky and L. P. Brown.

Meeting adjourned at 10:15, and luncheon followed at the Club.

BRONX COUNTY MEDICAL SOCIETY

REGULAR MEETING, NOVEMBER 15, 1922

The meeting was called to order in the Bronx Castle Hall.

The following officers were nominated for the year 1923:

President, Joshua H. Leiner; 1st Vice-President, Edward C. Podvin; 2nd Vice-President, Simon M. Jacobs; Secretary, I. J. Landsman; Treasurer, J. Adlai Keller; Board of Censors (two to be elected), Philip Eichler, Louis A. Friedman, Joseph H. Gettinger, I. H. Goldberger, Milton J. Goodfriend, William Klein, William L. Rost, Samuel F. Weitzner. (The outgoing President automatically becomes a member of the Board of Censors of the following year.) Delegates (four to be elected): J. Lewis Amster, Cornelius J. Egan, Edmund E. Specht, Maximillian Zigler. Alternates (six to be elected): Milton R. Bookman, Sidney Cohn, Robert Goldberg, Vincent S. Hayward, Jacob Jusko-witz, Nicholas Lukin.

The Comitia Minora reported that it had held special meetings for the purpose of obtaining the views of the Gubernatorial candidates in regard to Compulsory Health Insurance. At the meeting on November 3rd, the Committee on Legislation reported that the Committees, appointed at the Special Meeting of October 23rd, had interviewed both candidates for Governor and that they both were opposed to Compulsory Health Insurance.

MEDICAL SOCIETY OF THE COUNTY OF FRANKLIN

ANNUAL MEETING, MALONE, NOVEMBER 14, 1922

The meeting was called to order at the Elk's Club by the President, Dr. E. N. Packard.

Members present were Drs. Harrigan, Abbott, Finney, Harwood, Wilding, A. L. Rust, Dalphin, Coulter, Van Dyke, Kissane, Sprague, and White. Among the visitors present were Drs. Norman L. Hawkins, Watertown, Le Roy U. Gardner, Saranac Lake, A. H. Duerschner, Ray Brook and Dr. Likoque, Malone.

The business session was called to order at 12:30, the President, E. N. Packard, in the Chair.

The minutes of the last meeting were read and approved. The report of the Comitia Minora was read and approved.

The Secretary and Treasurer read their respective reports which, by vote, were accepted as read.

The following officers were elected for the ensuing year: President, J. D. Harrigan, Malone; Vice-President, F. B. Trudeau, Saranac Lake; Secretary and Treasurer, G. M. Abbott, Saranac Lake; Censor, for three years, E. N. Packard, Saranac Lake.

The meeting adjourned at 1 o'clock for dinner.

THE SCIENTIFIC PROGRAM.

"The State's Child Welfare Program," Norman L. Hawkins, M.D., Watertown.

"Purpura and Hemorrhagic Disease of the New Born, Treated with White Blood," John W. Kissane, M.D., Malone.

"Hemoptysis of Non-Tubercular Origin," Edward N. Packard, M.D., Saranac Lake.

"Pneumokoniosis," Le Roy Gardner, M.D., Saranac Lake.

"Aortic Aneurism Complicated with Pericarditis with Effusion," S. H. Duerschner, M.D., Ray Brook.

THE MEDICAL SOCIETY OF JEFFERSON COUNTY

ANNUAL MEETING, WATERTOWN, N. Y., NOVEMBER 9, 1922.

The meeting was called to order at the Black River Valley Club at 5:30 p. m.

The following officers were elected for 1922: President, M. M. Gardner, Watertown; Vice-president, Leonard Vincent, Brownville; Secretary, Walter S. Atkinson, Watertown; Treasurer, A. H. Allen, Watertown.

The following new members were elected: James E. McAskill, George S. Nellis, and Fred William Goundry.

SCIENTIFIC PROGRAM.

President's Address: "Smallpox and Its Prevention," Frederick G. Metzger, M.D., Carthage.

"Anaesthesia as a Specialty in Medicine," John J. Buettner, M.D., Syracuse. Discussion by Charles N. Bibbins, M.D., Watertown.

"The State Plan to Aid in Improving Maternal and Infant Care," Page E. Thornhill, M.D., Watertown.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK

STATED MEETING, NEW YORK CITY, NOVEMBER 27, 1922

The meeting was called to order by the President, Dr. Wightman, at the New York Academy of Medicine, at 8:15 p. m.

The following amendment to the Constitution was defeated:

Article 2, by striking out Chapter 1, and substituting the following:

The objects of the Society are to aid in regulating the practice of medicine and surgery in the County of New York and to bring into one compact organization the medical profession of the County of New York; to extend medical knowledge and advance medical science; to elevate the standing of medical education and to secure the enactment and enforcement of just medical laws: to promote friendly intercourse among physicians, to guard and foster the material interests of its members and to protect them against imposition; and to enlighten and direct public opinion in regard to the great problem of state medicine and to assist in the preservation of the public health.

The following officers were elected for 1923:

President, Arthur F. Chace; First Vice-President, Eugene H. Pool; Second Vice-President, Samuel J. Kopetzky; Secretary, Daniel S. Dougherty; Assistant Secretary, J. Milton Mabbott; Treasurer, James Pedersen; Assistant Treasurer, Ten Eyck Elmendorf; Censors, Edward M. Colie, Frederick H. Dillingham, De Witt Stetten. Chairmen of Committees: Membership, Robert H. Halsey; Civic Policy, Antonio Stella; Legislation, Edward C. Brenner. Delegates to State Society: Edward C. Brenner, Edward M. Colie, Ten Eyck Elmendorf, Howard Fox, Robert H. Halsey, Harold M. Hays, J. Milton Mabbott, James Pedersen, Wendell C. Phillips, and Alfred C. Prentice.

The address of the evening was given by Dr. George E. Vincent, President of the Rockefeller Foundation.

MEDICAL SOCIETY OF THE COUNTY OF QUEENS

ANNUAL MEETING, FOREST HILLS, NOVEMBER 28, 1922

The meeting was called to order at the Forest Hills Inn, the President, Dr. Thomas C. Chalmers, presiding.

The Secretary-Treasurer's report, showing a total membership of 225, with a substantial balance in the Treasury was read and approved.

There was a general discussion upon the advisability of holding the regular meetings at some central place in the Borough of Queens, rather than in the different

localities in the Borough, as had been the custom for the last two years. The sentiment seemed to be in favor of such a move, especially as this would be a preliminary step to acquiring a permanent home for the Society.

The report of the Committee for the dinner on December 18th, at the Forest Hills Inn was presented; at this dinner it is expected to have as guests the Executive Secretary of the Committee on Legislation of the American Medical Association, Dr. Woodward; the President of the Medical Society of the State of New York, Dr. Arthur W. Booth; Dr. Warren Coleman of the Committee of Physicians who are testing the constitutionality of the Volstead Act as it applies to physicians; and the President of the Medical Societies of the counties of New York, Kings and Nassau.

The first three of these will present the type of legislation that the Medical Profession stands for and is opposed to, both National and State.

The other guests will include: Governor-elect, Hon. Alfred E. Smith; U. S. Senator-elect, Royal S. Copeland, M.D.; the three Congressmen from the Borough of Queens, Hon. Robert L. Bacon, Hon. A. J. O'Connell, and Hon. J. J. Kindred, M.D.; State Senators McNally and Giorgio; and the six Assemblymen from the Borough of Queens.

The object of this dinner is to have the various Legislators meet the Medical Profession of the Borough, and their ladies, and hear direct the type of legislation that they are in favor of, or opposed to, and their reasons therefor; and also that when a committee is sent to a hearing on a Bill, they will have some idea of the people they represent.

The following officers who had been nominated at the October meeting were unanimously elected for 1923: President, Charles B. Story, Bayside; Vice-President, Carl Boettiger, Astoria; Secretary-Treasurer, Joseph S. Thomas, Flushing; Censors for 2 years, Henry C. Courten, Flushing, Thomas C. Chalmers, Richmond Hill, Dennis E. McMahon, Elmhurst; Delegates to State Society for two years: Ernest E. Smith, Kew Gardens, Henry C. Courten, Richmond Hill; Thomas C. Chalmers, Forest Hills; Historian: John D. MacPherson, College Point.

Upon the adjournment of the annual meeting the Scientific Session was convened and the first paper of the evening was "Cirrhosis of the Liver from the Gastro-Enterological Standpoint," by Anthony Bassler, M.D., New York City.

The second paper was "Cholecystitis, its Relation to the Liver and Pancreas," with lantern slides, by William Howard Barber, M.D., Richmond Hill.

Both of these papers were very ably presented and very general discussion was evoked. The discussers were Drs. H. A. Houghton, Joseph S. Thomas, Dennis E. McMahon, Joseph D. Hallinan, Thomas C. Chalmers, Ernest E. Keet and others.

After the meeting a supper was served in the dining room of the Inn.

MEDICAL SOCIETY, COUNTY OF SULLIVAN.

ANNUAL MEETING, LIBERTY, N. Y., OCTOBER 10, 1922.

The following officers were elected for the coming year: President, John A. Miller, Roscoe; Vice-President, Victor G. Burke, Livingston Manor; Secretary and Treasurer, Harriet M. Poindexter, Liberty; Delegates, Luther C. Payne, Liberty; Alternate, Charles Rayevsky; Censors, E. Singer, Cornelius Duggan. J. C. Gain, J. B. Amberson and H. M. Poindexter.

The Scientific Session consisted of a "Talk on Radium" for malignant growths, by Dr. C. I. Redfield, of Middletown, N. Y., describing the technic by black-board illustrations. An exhibit on the radium needles with special applicators for their insertion followed.

TOMPKINS COUNTY MEDICAL SOCIETY.

REGULAR MEETING, ITHACA, NOVEMBER 21, 1922.

The meeting was called to order at the Odd Fellows' Temple.

The minutes of the October meeting were read and approved as read.

The Comitia Minora reported that the annual dues for 1923 would be \$3.00 the same as last year.

The application of Prof. James Sumner of Cornell University for Associate Membership was received, and having the approval of the Board of Censors, he was duly elected.

The President announced that under the By-Laws, nominations for officers for the ensuing year must be made at this meeting or provision made therefor. It was moved and carried that the Comitia Minora act as nominating committee.

The business of the session being completed, the following Scientific Program was presented.

The President announced that the special object of this section was the presentation, by the Division of Maternity, Infancy and Child Hygiene of the State Department of Health of the proposed methods of administration of the law creating that Division, and as preliminary and introductory thereto two short papers would be presented dealing with subjects covered by this Division.

Dr. Esther E. Parker was then introduced, who presented the subject "Pre-Natal Care," covering well the ground of the prospective mother during pregnancy.

Miss Mary Henry, of the Home Economics Department of Cornell, was then introduced. Miss Henry covered the subject, "From the Cradle to the School," dealing largely with proper feeding.

Dr. Reeve B. Howland, of Elmira, was then introduced. Dr. Howland represented the Division of Maternity, Infancy and Child Hygiene, being the consultant in Obstetrics for this District. Dr. Howland gave numerous statistics showing the mortality of mothers and infants in this state and in different sections thereof. Material lowering of this mortality is the great object sought. The Doctor also spoke for the establishment of pre-natal and child welfare clinics and the instruction of nurses in the hygiene of maternity and infancy.

The following resolution was passed:

RESOLVED: That the Tompkins County Medical Society appreciates the value of the work proposed by the Division of Maternity, Infancy and Child Hygiene of the State Department of Health, and hereby gives it hearty endorsement.

Upon motion the meeting adjourned to the dining room for light refreshments and social relaxation.

THE MEDICAL SOCIETY OF THE COUNTY OF WESTCHESTER.

ANNUAL MEETING, WHITE PLAINS, N. Y. TUESDAY, NOVEMBER 21, 1922.

The meeting was called to order at the Burke Foundation. The following officers were elected for 1923: President, Edwin G. Ramsdell, White Plains; Vice-President, Arthur S. Corwin, Rye; Secretary, Harrison Betts, Yonkers; Treasurer, Walter W. Mott, White Plains. Censors: Francis R. Lyman, Hastings-on-Hudson; Henry W. Titus, New Rochelle; Elton G. Littell, Yonkers. Delegates to the State Society: Edward W. Weber, White Plains; Frank H. Knight, White Plains. Alternates: Clarence A. Read, New Rochelle; Edwin H. Huntington, Ossining.

The Scientific Session consisted of an address on "The Practitioner's Opportunity in Preventive Medicine," by Haven Emerson, M.D., Prof. Hygiene Columbia University, formerly Commissioner of Health, City of New York.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

THE ART OF ANAESTHESIA. By PALUEL J. FLAGG, M.D., Lecturer in Anæsthesia, College of Physicians and Surgeons, New York; Consulting Anæsthetist, Bellevue, Jamaica and St. Joseph's Hospitals; Visiting Anæsthetist, St. Vincent's, Roosevelt and the Woman's Hospital; formerly Lecturer and Demonstrator in Anæsthesia, Rockefeller Institute War Demonstration Hospital. Third Edition, Revised. 136 illustrations. J. B. Lippincott Co., Phila. and London. Price, \$4.50.

THE BIOLOGY OF DEATH. By RAYMOND PEARL, Johns Hopkins University. Being a Series of Lectures Delivered at the Lowell Institute in Boston in December, 1920. J. B. Lippincott Co., Phila. and London.

THE MEDICAL CLINICS OF NORTH AMERICA, SEPTEMBER, 1922. Volume 6, No. 2. San Francisco Number. W. B. Saunders Co., Phila. and New York.

ARAB MEDICINE AND SURGERY, A STUDY OF THE HEALING ART IN ALGERIA. By M. W. HILTON-SIMPSON, B.Sc. Author of "Among the Hill Folk of Algeria," &c. Oxford University Press, American Branch, 1922. Price, \$3.50.

I BELIEVE IN GOD AND IN EVOLUTION. By WILLIAM W. KEEN, M.D., Emeritus Professor of Surgery, Jefferson Medical College, Philadelphia. J. B. Lippincott Co., Phila. and London. Price, \$1.00.

THE SURGICAL CLINICS OF NORTH AMERICA. October, 1922, Volume 2, No. 5, Southern Number. Published Bi-monthly. W. B. Saunders Co., Phila. and London.

A TEXT-BOOK OF HUMAN PHYSIOLOGY, INCLUDING A SECTION ON PHYSIOLOGIC APPARATUS. By ALBERT P. BRUBAKER, A.M., M.D., L.L.D., Professor Physiology and Medical Jurisprudence Jefferson Medical College; formerly Lecturer on Physiology and Hygiene in the Drexel Institute of Art, Science and Industry. Seventh edition, revised and enlarged. 367 illustrations. Blakiston's Sons & Co., Philadelphia.

NERVES AND PERSONAL POWER; SOME PRINCIPLES OF PSYCHOLOGY AS APPLIED TO CONDUCT AND HEALTH. By D. MACDOUGALL KING, M.D., Author of "The Battle with Tuberculosis and How to Win It." With introduction by Rt. Hon. W. L. Mackenzie King. Fleming H. Revell Co., New York.

BRAIN ABSCESS, ITS SURGICAL PATHOLOGY AND OPERATIVE TECHNIC. By WELLS P. EAGLETON, M.D., Newark, N. J. Lt.-Colonel, M.R.C.; Medical Director, Newark Eye and Ear Infirmary; Chief Division of Head Surgery, Newark City Hospital; Consulting Craniologist, St. Barnabas Hospital and St. Michael's Hospital. The Macmillan Co., 1922, New York.

PULMONARY TUBERCULOSIS. By MAURICE FISHBERG, M.D. Third Edition, revised and enlarged. Octavo of 891 pages with 129 engravings and 28 plates. Phila. and New York, Lea & Febiger, 1922. Cloth, \$8.50.

TUBERCULOSIS AND THE COMMUNITY. By JOHN B. HAWES, 2d, M.D. 12 mo. of 168 pages. Phila. and New York, Lea & Febiger, 1922. Cloth, \$1.75.

SYPHILIS. By BURTON PETER THOM, M.D. Octavo of 525 pages with 69 engravings. Phila. and New York, Lea & Febiger, 1922. Cloth, \$5.50.

Book Reviews

CHLOROFORM ANAESTHESIA. By A. GOODMAN LEVY, M.D., M.R.C.P., Physician City of London Hospital Diseases of Chest. With a Foreword by ARTHUR R. CUSHNY, M.D., L.L.D., University of Edinburgh, John Bale, Sons & Danielsson, Ltd., London, 1922.

It has been a long time since the publication of a book dealing with Chloroform alone; and how appropriate that the seventy-fifth anniversary of that memorable scene in Simpson's dining-room should be the time for the reading of this new book. What if after a generation of increasing disfavor, Chloroform should come once more into general use; another generation of students may have learned to master its tricks.

Dr. Levy for years was the anesthetist to Guy's Hospital and quite evidently had ample opportunity to use and to witness the misuse of Chloroform. His book accordingly reads authoritatively, and it gives no shock to cisatlantic readers to discover that he recognizes a suitable field for its use. Indeed the terms "indication for use" and the contrary do not appear in the index; and as a matter of fact, although many suggestions and cautions are made, only once (on page 145) is a distinct contraindication given; and that, curiously, in the case of operations requiring a light anesthesia! Morphia is not particularly useful and may be even harmful because of the respiratory depression and myosis; atropine is of doubtful value because of lessened vagal force; warmed chloroform atmosphere gives no substantial benefit; oxygen is a valuable agent to employ in case of emergency, but its routine use tends to disguise a faulty method; and so on.

The major part of the book is taken up with scientific aspects of the subject. Ten pages are given to the matter of dosage. Twenty pages contain the grim facts of fatalities. Methods and apparatus are assigned thirty pages. The administration is dealt with in ten pages. There is a fine bibliography in which five American sources are named.

The particular contribution which Levy makes is the elucidation of the cause of death. Strangely enough the "overdose" is absolved of its hitherto peccable position; in its place a light anesthesia is the height from which the victim topples. Cardiac failure is ascribed to articular fibrillation. Levy himself in 1911 reported this in a note to the Physiological Society, and proved a similar form of death by injecting small doses of adrenalin into the vein of a cat lightly anesthetized with chloroform. In chapter four the argument consumes twenty-four pages. "All cardiac depressants tend to prevent fibrillation through their action upon the heart muscle. Increased vagal tone likewise acts in this way and tends to diminish the onset of extra systoles, so that vagal action is a protective against these dangerous irregularities. The cardiac depressant which is the most powerful antagonist to the irritable phenomena of the ventricle is chloroform in full doses, and this fact should constantly be kept in mind."

Anesthetists will want to read this book.

A. F. ERDMANN.

A COMPEND ON BACTERIOLOGY, INCLUDING PATHOGENIC PROTOZA. By ROBERT L. PITFIELD, M.D., Pathologist to the Germantown Hospital. Fourth Edition, 4 plates and 82 other illustrations. P. Blakiston's Son & Co., Philadelphia, Pa., 1922. \$2.00 net.

This is a new edition of an old friend issued in the same form as in our student days. It contains an abundance of condensed information, is quite up to date and no doubt will be popular with students with the approach of examination time.

E. B. SMITH.

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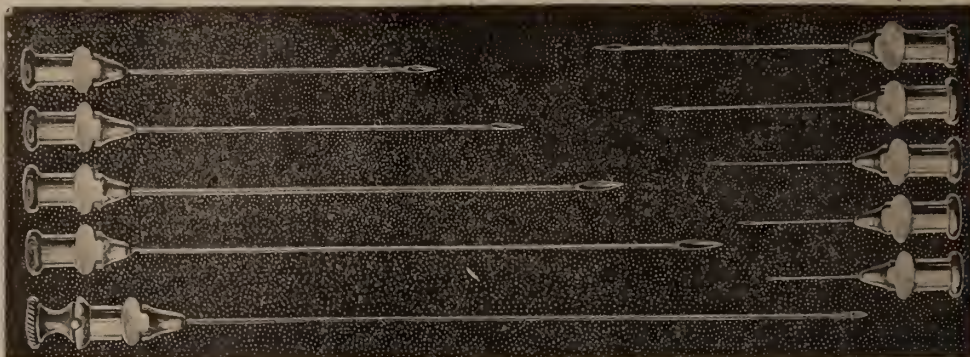
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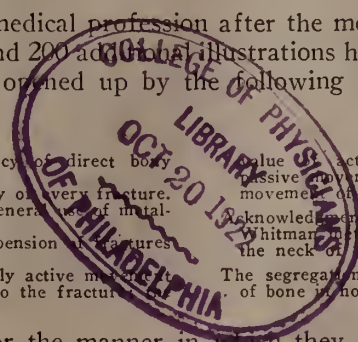
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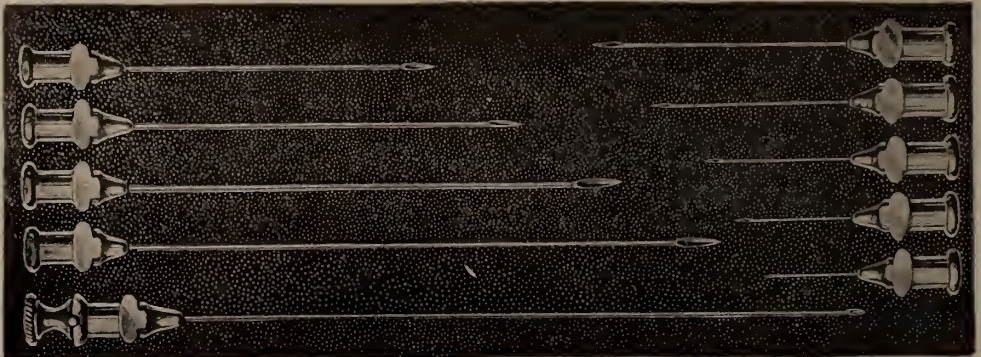
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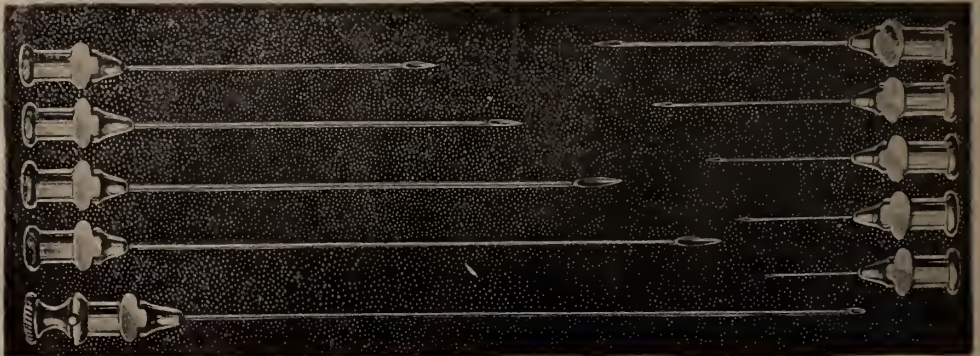
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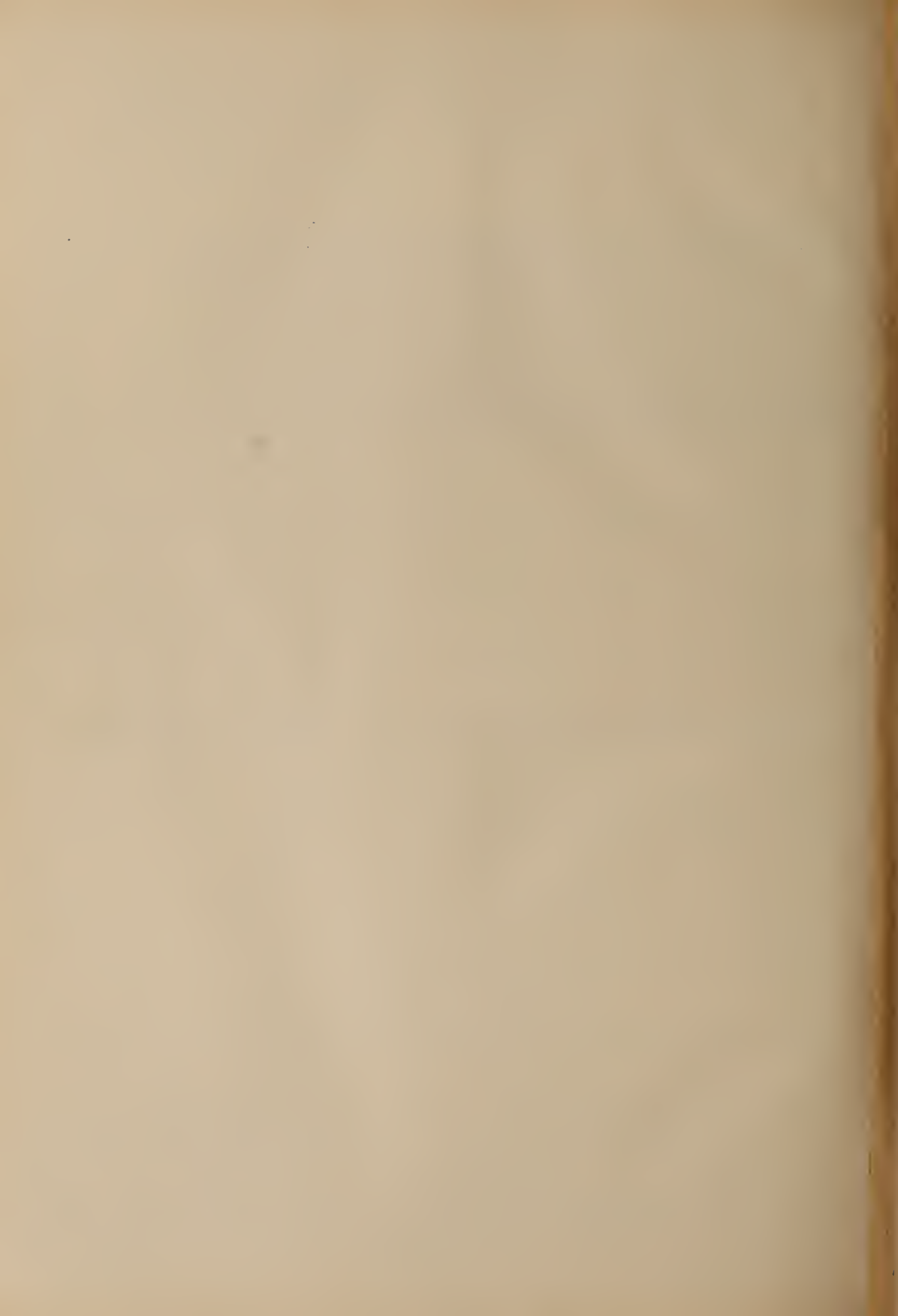
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